



THE ARCHITECTURE OF CONNECTIVITY

Systems & Solutions Catalogue



Platform & Systems

- [Estella](#)
- [Estella UniHUB](#)

VSAT & Networking Equipment

DVB-RCS2 Modems

- [C7700](#)
- [U7720](#)
- [U7720-ODU](#)
- [U7400](#)
- [U7780](#)

SCPC Modems

- [SBM90x](#)
- [SBM100 SCPC](#)

RF Infrastructure

C-Band

- [25W](#)
- [40W](#)
- [60W](#)
- [80W](#)
- [100W](#)
- [125W](#)
- [200W](#)
- [250W](#)
- [400W](#)
- [500W](#)
- [600W](#)
- [800W](#)
- [1000W](#)
- [2000W](#)
- [3200W](#)

X-Band

- [25W](#)
- [50W](#)
- [50W outdoor](#)
- [60W](#)
- [100W](#)
- [125W](#)
- [200W](#)

- [400W \(SBB0400X Series\)](#)

Ku-Band

- [3W Transceiver](#)
- [16W](#)
- [20W](#)
- [25W](#)
- [25W](#)
- [40W](#)
- [50W](#)
- [60W](#)
- [80W](#)
- [100W](#)
- [125W](#)
- [200W](#)
- [250W](#)
- [400W](#)
- [500W](#)
- [800W](#)
- [1000W](#)

Ka-Band

- [3W Transceiver](#)

Antenna Systems

Fixed

- [SBAF-Type 98cm Ka-band and 1.2m Ku-band](#)
- [1.2m Lower Ku-band](#)

Manpack

- [SBMP090](#)
- [SBMP100](#)

Fly Away

- [SBFA120](#)
- [SBFM120](#)

Drive Away

- [SBDA120](#)

SOTM

- [SBDM080](#)

ESTELLA redefines scalable and high efficiency TDMA solution via dynamic network automation and performance optimization. ESTELLA provides total capacity management, harnesses most efficient forward and return link waveforms to deliver flexible and dynamic capacity to support more customers, provide differentiated services, and better SLAs.

ESTELLA Harnesses 3 INNOVATIONS

ESTELLA combines our 3D Time Division Multiple Access (TDMA) Waveform, our quasi-SCPC WaveSwitch™ waveform, and our Dynamic Rate Assignment (or Burst Mode-Frequency Division Multiple Access; BM-FDMA) features together to offer a SATCOM solution which can meet any operator requirement everywhere.

Innovations

ESTELLA 3D TDMA preserves the structured and interference free communication benefits of traditional TDMA but enhances the efficiency of the satellite channels/carriers by allowing for variable timeslot sizing to accommodate our 3D (3 Decision Factor) Modulation/Coding/Block sizes (MCB) selections/per burst/per site. The ESTELLA can instruct each remote to select from among 60 MCB options (ranging from spread spectrum Es/No at -15dB to 64QAM Es/No at +18dB) to best meet its connectivity needs allowing for ESTELLA to rapidly adapt the remote MCB selections providing best performance while inherently utilizing adaptive coding modulation (ACM) to protect against link degradations or interference

MODULATION
SS-BPSK to 64QAM

CODING
1/3, 1/2, 2/3, 3/4, 5/6, 6/7, 7/8

BLOCK SIZE
266, 532, 1616, 3232

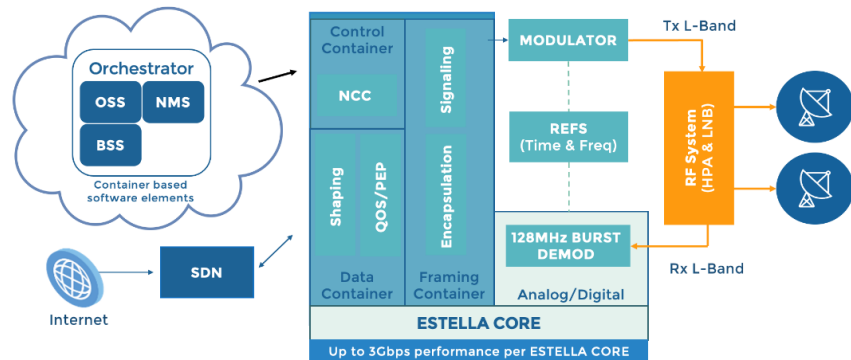
Dynamic Rate Adaptation (DRA or BM-FDMA) is a component of the ESTELLA scheduler which redefines return link satellite channels/ carriers per burst to accommodate the ever-changing traffic patterns and 3D TDMA timeslot profiles. This DRA is akin to BM-FDMA in that the carrier definitions are created dynamically every burst interval and so carrier frequency allocations are always changing to provide the highest yield of performance across the entire network

WaveSwitch™ builds upon our 3D TDMA and DRA capabilities, allowing for remotes to be switched between shared TDMA carriers to dedicated SCPC carriers based on factors to determine the overall best interest of the network. Switching is dynamic, completely hitless (errorless) and preserving full bit count integrity, on per burst interval. Switching to Waveswitch allows remotes to focus BUC power to improve MCB selection leading to higher throughput with less Hz.



ESTELLA CORE

- ESTELLA is a Compute and Multi-Channel Demodulator (MCD) platform which couples with external Modulators and RF Systems to provide a flexible and highly scalable VSAT HUB solution.
- UniHUB is a reduced capacity ESTELLA with up to 2x integrated modulators in a 3U chassis (intended for tactical deployments or starter HUBs)



Features and Benefits

Dual L-band Interfaces

- Two separate L-band 950-2400MHz interfaces are provided to support wideband HTS, connections to dis-contiguous channel on a polarity, or even connect to both satellite polarities at the same time.

Multi-Channel Demodulator (MCD)

- MCD provides support for 3D TDMA, DRA and WaveSwitch across 128MHz capacity. Carriers are auto defined as small as 160kHz to as large as 32MHz.
- Upto 800 carriers over the entire band.
- Massive return capacity : upto 640Mbps

Spectral efficiency

- MCD supports 16-state Turbo codes providing high spectral efficiency with low delay.
- RLS modern algorithms and filtering allows for carrier spacing as tight as 5%. Providing more useable bandwidth within the VSAT return technology range.

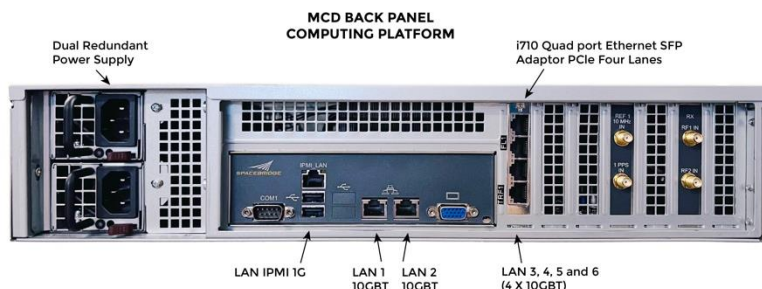
Modulator (UniHub)

- UniHub may include up to 2x DVB-S2X modulators.
- Each modulator supports up to 80MHz in a single or multi-carrier environment.

Compute Platform Functions

The Compute platform provides the ability for ESTELLA to support up to 3Gbps of traffic. It consists of:

- **Network Communication Controller (NCC):** dynamically allocate satellite capacity to/from individual remotes based upon predefined metrics such as remote demands, QOS, Service Level Attributes (SLA) coupled with knowledge of remote site information (remote dish size, BUC power, modem type, and return link EsNo).
- **Shaping/QOS:** Allow operators to effect essential management of traffic and differentiated services across the ESTELLA platform.
- **Encapsulation/Signaling:** provides the function of encapsulating user traffic and NCC signaling within GSE streams and building baseband frames (BBFrames).
- On the return, it decapsulates RLE traffic from the remotes, rebuilds IP packets and forwards the traffic to the core routers.



BURST DEMODULATOR CHARACTERISTICS

RX Burst Demod Capacity	128MHz
Return Link FEC	RCS2 (TPhi)/WaveSwitch™
License Based	YES
Min carrier	160kHz
Largest Carrier	32MHz
Min WaveSwitch™ carrier	160kHz
RO/Spacing factor	down to 5%
Number of carriers	800
MODCOD	DSSS-BPSK/QPSK, BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Block sizes	266, 536, 1616
# of Waveforms	60

Variable MODCOD/Site YES

Dynamic Rate Assignment (DRA)	YES
Frequency range	950-2400MHz
Return Link Fade Mitigation	Dynamic Rate Assignment (DRA) coupled with dynamic Waveform provide per site ACM capability.

INTERFACE

User Data Interface	2x RJ45 (10Gbase-T)
MGMT Interface	4x RJ45 (100/1000baseT)
Monitor and Control	Web Server (HTTPS) Syslog (encrypted)
Connector Type	5xSMA : 2x RX, 2x TX, 1x10MHz for LNB
Return Loss	>+ 12 dB
Carrier Signal to Noise ratio	-15.6 to +18.5 dB (lowest is DSS Repetition 16, BPSK, CR 1/3; Highest 64 QAM CR 6/7)
10 MHz Ref Clock	BNC: -5 to +15 dBm (50 Ohm) sinus reference input
1 PPS Input	BNC: 1PPS input TTL/50 Ohm

MECHANICAL ENCLOSURE SPECS

Form factor	Server format
Dimensions (WxHxD)	WxHxD: 19 " x 2 RU x 26"
Weight	8 kg
Power	90-130 & 180-260Vac, 125 VA, 47-63 Hz, 200W
Operating Conditions	0°C to 50°C
Storage Conditions	-20°C to 85°C
Humidity	10% to 90% humidity, non-condensing

BURST DEMODULATOR CHARACTERISTICS

RX Burst Demod Capacity	36MHz
Return Link FEC	RCS2 (TPhi)/WaveSwitch™
License Based	YES
Min carrier	160kHz
Largest Carrier	20MHz
Min WaveSwitch™ carrier	160kHz
RO/Spacing factor	down to 5%
Number of carriers	200
MODCOD	BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Block sizes	266, 536, 1616
# of Waveforms	60
Variable MODCOD/Site	YES
Dynamic Rate Assignment (DRA)	YES
Frequency range	950-2400MHz
Return Link Fade Mitigation	Dynamic Rate Assignment (DRA) coupled with dynamic Waveform provide per site ACM capability.

Demod INTERFACE

Connector Type	5xSMA : 2x RX, 2x TX, 1x10MHz for LNB
Return Loss	>+ 12 dB
Carrier Signal to Noise ratio	-15.6 to +18.5 dB (lowest is DSS Repetition 16, BPSK, CR 1/3; Highest 64 QAM CR 6/7)
10 MHz Ref Clock	BNC: -5 to +15 dBm (50 Ohm) sinus reference input
1 PPS Input	BNC: 1PPS input TTL/50 Ohm



MODULATOR CHARACTERISTICS

Number of modulators	2x 80MHz modulators (each modulator can support multi-carrier partitions)
Waveform/FEC	DVB-S2/S2x (BPSK, QPSK, 8PSK, 16APSK to 256APSK, Short and Normal Frame)
RO/Spacing factor	down to 5%
License Based	YES
Output	+7 dBm to -35 dBm / SMA 50 Ω
Frequency range	950-2150MHz
PCR insertion	Yes

Compute INTERFACE

User Data Interface	2x RJ45 (10Gbase-T)
MGMT Interface	4x RJ45 (100/1000baseT)
Monitor and Control	Web Server (HTTPS) Syslog (encrypted)

MECHANICAL ENCLOSURE SPECS

Form factor	Server format
Dimensions (WxHxD)	WxHxD: 19 " x 3 RU x 26"
Weight	18.5 kg
Power	90-130 & 180-260Vac, 125 VA, 47-63 Hz, 200W
Operating Conditions	0°C to 50°C
Storage Conditions	-20°C to 85°C
Humidity	10% to 90% humidity, not condensing

This powerful cost-effective satellite modem/bridge/router for high-speed internet follows the DVB-RCS2 (EN 301 545-2-V1.2.1) open standard, incorporates proprietary SRC3 Return Link Waveforms for Broadband Internet Access and packed with lots of advanced features, provides L2/L3 network connectivity, high spectral efficiency for High Throughput Satellites (HTS) on ASAT-II and UHTS/Software Defined Satellites (SDS) on Estella VSAT Platforms



Applications and Uses

- Mass market Satellite Broadband Internet Access
- Small Office Home Office (SOHO) or Small and Medium Enterprises (SME)
- Rural internet access and community hotspots
- Cellular Backhaul for thin routes applications
- IIoT, USO, OTT IPTV

Options

- Convenient and attractive desktop enclosure with noiseless fan to keep low temperature inside and hence the high MTBF
- DVB-S2X Forward Link, Supports all MODCODEs and roll-offs as per ETSI EN 302 307-2 V1.2.1
- DVB-RCS2 and proprietary SRC-3 return channels supporting BPSK-64QAM (QPSK to 16QAM on ASAT-II Platform), up to 5% roll-offs and carriers/channels spacing on all MODCODs
- Forward Link Adaptive Coding and Modulation (ACM)
- Return Link ULPC and ACM/DRPA (Dynamic Rate and Power Assignment)
Highest spectral efficiency via highly granular MODCODs in both directions
- Operates with most COTS RF BUCs/LNBs or transceivers
- Internet-traffic optimization (Performance Enhancement Proxy) and QoS, enhancing user experience and conserving satellite bandwidth
- Supports both L2 and L3 networks connectivity
- Designed around a System on Chip (SoC) architecture providing the power of Software Defined Radio (SDR) and flexibility of future waveform adaptation and customization
- Optional: IPsec mode 256AES encryption

U7700 is a powerful, yet compact broadband internet modem/bridge/router supporting IP download/ upload speeds of 120Mbps/20Mbps respectively. With integrated TCP acceleration and Performance Enhancement Proxy (PEP) and compression internet surfing is quick and seamless, resulting in high level of User Experience and customer satisfaction. Simultaneously operates in both TDMA for oversubscribed and BM-FDMA for dedicated traffic with lowest signal thresholds and highest bandwidth utilization.



C7700 – Broadband Satellite Modem for use on ASAT-II or Estella VSAT Platforms

Technical Specifications

FORWARD LINK		TRAFFIC ENHANCEMENT AND QOS AND PEP	
Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all modulations, coding and roll-off rates	QoS	Up to 256 flows QoS, based on ToS/DSCP, IP addresses, protocol and ports
Encapsulation Modes	GSE or MPE Encapsulation	Application Optimization	SpaceBridge proprietary L3 Performance Enhancement Protocol (PEP) which accelerates IP TCP flows, compresses streams and significantly reduces return link TCP ACK (improves return link utilization and saves up to >80% return link ACK related bandwidth)
FEC	LDPC/BCH, Normal and Short block sizes		
Symbol Rate	From 128Ksps to 125Msps (optional 250Msps or 500Msps)		
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35%		
Terminal IF RX Interface	F-type 75 Ohm, 950MHz to 2150MHz satellite/band independent	VoIP/Multimedia	ASAT-II: Programmable VoIP, Video-over-IP /video-conferencing detection and guaranteed QoS behavior Estella: Carriers assignment on-a-fly within available bandwidth either as dedicated quasi-SCPC carriers (BM-FDMA), or pulled MF-TDMA carriers, reassigned every 26.5msec to 848msec
LNB DC Power Feed	Off/13VDC/18VDC		
LNB DiSeqC Feed	Off/22KHz		
RETURN LINK		Security	Optional: Encryption up to AES256
Modulation Technology	ASAT-II: MF-TDMA, QPSK, 8PSK, 16QAM ESTELLA: BM-FDMA or MF-TDMA: BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM		
Encapsulation Modes	ASAT-II: 53/106/188/212 MPE, RLE ESTELLA: variable length RLE		
Waveforms/FEC	Up to 140, Turbo-Phi		
Symbol Rate	ESTELLA: 0.128-15Msps		
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35% for all MODCODs		
Link Variation Mitigation	Built-in Uplink Power Control (ULPC) and Return Link ACM/DRPA, power/symbol rate optimization (Power/Bandwidth ratio =1)		
Tx Output Power Level	-30dBm to 0dBm		
Terminal IFL TX Interface	F-type 75 Ohm, 950-2400MHz satellite/band independent, reference: off/10MHz/50MHz, Power: off/24VDC, matching COTS ODU. Provides up to 45W power to the BUC (i.e. 24VDC @1.875A)		
TRAFFIC PORTS AND PERFORMANCE		ENVIRONMENTAL AND MECHANICAL	
Interfaces	User ports: 1x1000BaseT Ethernet MGMT ports: 1x1000BaseT Ethernet, could be used as optional second VLAN port	Form factor	Plastic indoor desktop enclosure
Download speed	Up to 120Mbps	Dimensions (WxHxD)	2" x 7.25" x 5" (51 x 182 x 127 mm)
Upload Speed	Up to 20Mbps	Weight	0.89 lbs (0.34kg)
Packet Processing	20kpps with full QoS and PEP enabled	Power	- External universal power supply, 95-240VAC, 47Hz to 63Hz, 65W - C6 (Mickey Mouse) inlet - Consumption: 12W (not including RF equipment / BUC power) 45W available for ODU equipment at maximum room temperature
Network Services	- Support Layer-2 and layer-3 traffic modes at the same time - Layer 2 VLAN tagging and bridging - Layer 3 NAT, DHCP server/relay, IP Routing	Operating Conditions	32°F to 122°F (0°C to 50°C) 10% to 90% humidity, non-condensing
		Certifications	CEmarking, FCC
		Product Compliance	RoHS
		Form factor	Plastic indoor desktop enclosure



The U7720 is a high-performance professional satellite modem designed for seamless operation on the ESTELLA VSAT platform. Fully compliant with the DVB-RCS2 open standard (EN 301 545-2 V1.2.1), it comes standard with SpaceBridge's innovative WaveSwitch™ technology, enabling dynamic switching between TDMA and SCPC return link waveforms. This ensures optimal return link efficiency, especially for today's High Throughput Satellites (HTS/VHTS). U7720 supports L2/L3 network making it ideal for a wide range of applications, including: basic Internet access, IoT, Cellular Backhaul (CBH), Homeland security and military

U7720 is a high performance networking satellite modem/router capable of supporting IP speeds of 100Mbps download and up to 20Mbps upload. All U7720 modems support industry standard OpenAMIP, which when coupled with SpaceBridge multi-beam mobility and beam switching technology, provides a very effective, robust and secure maritime/ mobility communication solution. The U7720 is available in the following formats :

- U7720-60: rackmount low power (<40W 24VDC power to BUC)
- U7720-120: rackmount mid power (<100W 24VDC power to BUC) + Quad GigE interface
- U7720-ODU: IP67 outdoor enclosure (<40W 24VDC power to BUC)
- U7720-SA: stand-alone board level for 3rd party integration

Key Features & Benefits

- DVB-S2X Forward Link. Highest spectral efficiency via highly granular MODCOD, low roll off rates and Adaptive Coding and Modulation (ACM)
- Dynamic Rate Assignment: Automatically generates the return carrier waveform every Superframe to optimally match user traffic with either 3D-TDMA or SCPC (via WaveSwitch™), while also adjusting block size and MODCOD for maximum efficiency.
- DVB-RCS2 return channels supporting from SS-BPSK to 64QAM and up to 5% roll offs/spacing
- WaveSwitch return link waveform offering highest Dynamic SCPC efficiency and performance.
- Hitless and dynamic switching between TDMA and WaveSwitch services.
- Internet-traffic optimization and QoS, enhancing user experience and conserving satellite bandwidth and power
- OpenAMIP support with major antenna manufacturers
- Operates with most COTS BUC/LNBs or transceivers



U7720-120



U7720-SA



U7720-ODU



U7720 – High-Performance Networking Satellite Modem/Router Technical Specifications

FORWARD LINK (Rx)

Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all modulations.
Encapsulation Modes	GSE Encapsulation
Receive frequency Range	950-2150 MHz
Symbol Rate	From 256Ksps to 125Msps
Link Variation Mitigation	Adaptive Coding Modulation and AULPC
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%
Terminal IF RX Interface	F-type 75 Ohm, 950-2150MHz satellite/band independent, LNB power OFF/13VDC/18VDC, 22KHz tone ON/OFF

FORWARD LINK TDMA (Tx)

Waveform Technology	3D-TDMA and WaveSwitch SS-BPSK, BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Encapsulation Modes	RLE Encapsulation
Symbol Rate	From 160Ksps to 20Msps (20Msps for QPSK to 16QAM, 11Msps for 32APSK to 64QAM)
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35%
Link Variation Mitigation Dynamic Rate Assignment	- Terminal built-in Uplink Power Control (ULPC) - Adaptive return carrier sizing every 26.5msecs - Adaptive block size and MODCOD per timeslot/per carrier, every 26.5msec
Tx Power	-30dBm to 0dBm
Terminal IFL TX Interface	F-type 75 Ohm, 950~2400MHz satellite /band independent, BUC timing reference - OFF/10MHz/50MHz reference, BUC Power - OFF/24VDC selectable

Return Link dSCPC (Tx)

WaveSwitch	- SpaceBridge high efficiency proprietary TDMA block mode concatenation (i.e. eliminates TDMA overhead) to provide equivalent to SCPC grade service, sizing carrier symbol rate every frame - WaveSwitch carrier size and MODCOD selection every 20msec. - Hitless switching from regular TDMA to WaveSwitch and back
Upload Speed	Up to 20Mbps

QOS and PEP

QOS	Up to 8 flows QoS, based on ToS/DSCP, IP addresses, protocol and ports
Application Optimization	SpaceBridge proprietary L3 Performance Enhancement Protocol (PEP), compresses streams and significantly reduces return link TCP ACK (improves return link utilization and saves up to 50% return link ACK related bandwidth) DNS Caching
Security	Optional: IPSec encryption up to AES256

Traffic ports and performance

Interfaces	U7720-60/SA/ODU: 1 User 1000BaseT and 1 MGMT 1000BaseT Ethernet U7720-120: 4xUser 1000BaseT and 1 MGMT 1000BaseT Ethernet
Download speed	Up to 100Mbps
Upload Speed	Up to 25Mbps
Packet Processing	25kpps with full QoS and PEP enabled
Network Services	- Support Layer-2 and Layer-3 traffic modes at same time - Layer 2 VLAN and bridge support - Layer 3 NAT, DHCP server/relay, Access List, IP Routing

Environmental and Mechanical

Form factor/Dimensions (WxLxH)	U7720-60: 19 x 6 x 1.75 inches (482.6 x 153.4 x 44.4 mm) U7720-120: 19 x 12 x 1.75 inches (482.6 x 306.8 x 44.4 mm) Outdoor IP-67 enclosure: 5 x 9 x 7 inches (127 x 229 x 178 mm)
Weight	<7.5 lbs (3.4kg)
Power	- U7720-60 and ODU: 60W AC PS (90-260VAC), 40W max to power RF/BUC. - U7720-120: 120W AC PS (90-260VAC), 100W to RF/BUC - U7720-SA: external 24 VDC up to 60W (40W max to power RF/BUC)
Operating Conditions	Indoor rack mount: 32°F-122°F (0°C-50°C) 10% to 90% humidity, non-condensing Outdoor enclosure: -22°F-140°F (-30°-60°C)
Storage Conditions	-40° to +85°C (-40° to +185°F) 5 - 95% non-condensing
Altitude	< 3,000 meters/10,000 feet
Certifications	CE, FCC, RoHS

U7720-ODU is a high-performance satellite modem/router designed for networking applications. Its enclosure enables seamless integration with SpaceBridge's manpack (SBMx) and flyaway (SBFx) terminal product lines



Up to 100Mbps

FORWARD LINK (Rx)

Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all modulations. Adaptive Coding and Modulation (ACM) GSE Encapsulation Automatic Up Link Power Control (AULPC) 5%, 10%, 15%, 20%, 25%
Terminal IF RX Interface	F-type 75 Ohm, 950-2150MHz satellite/band independent, LNB power OFF/13VDC/18VDC, 22KHz tone ON/OFF

Traffic ports and performance

Interfaces	U7720-60/SA/ODU: 1 User 1000BaseT
Download Speed	Up to 100Mbps
Upload Speed	Up to 40Mbps
Packet Processing	25kpps with full QoS
Network Services	IP Routing, NAT, DHCP server/relay, Access List, IP Routing

FORWARD LINK TDMA or dSCPC (Tx)

Waveform Technology	3D-TDMA and WaveSwitch™ dSCPC supporting SS-BPSK, BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM
Encapsulation	RLE
Roll off/Spacing	5%, 10%, 15%, 20%, 25%, 35%
Dynamic Rate Assignment (DRA)	Adaptive return carrier sizing every 26.5msecs Adaptive block size and MODCOD per timeslot/per carrier, every 26.5msec
ULPC	Terminal built-in Uplink Power Control
Tx Power	-30dBm to 0dBm
Terminal IFL TX Interface	N-type 50 Ohm, 900~2400MHz satellite /band independent, BUC timing reference - OFF/10MHz/50MHz reference

Environmental and Mechanical

Form factor/ Dimensions (WxLxH)	Outdoor IP-67 enclosure: 7.2 x 7.7 x 1.3 inches (183 x 196 x 33 mm)
Weight	<2.6 lbs (1.2 kg)
Power	External 24 VDC up to 20W
Operating Conditions	From -22°F to +140°F (-30°C to +60°C)
Storage Conditions	From -40°C to +85°C (-40° to +185°F)
Relative Humidity	5 - 95%, non-condensing
Altitude	< 3,000 meters/10,000 feet
Certifications	FCC, RoHS

The U7400 is a telecom grade VSAT satellite modem for professional and mobility applications.



Features and Benefits

- Indoor 19" rack-mountable.
- Vast deployment flexibly.
 - Support hub-less point-to-point deployments as well as ASAT™ System hubspoke.
 - Start small with point-to-point SCPC links and grow to large hub-spoke MF-TDMA/ SCPC network.
- WaveSwitch™ hub-spoke multi-waveform support:
 - Automatic on-the-fly MF-TDMA / SCPC Return Link switching, based on application, traffic density and scheduled triggers.
 - SCPC Return Link dynamic channel adaptation to meet traffic demand while conserving satellite bandwidth.
 - Real-time waveform switching provides real savings for applications seeing drastic traffic density changes such as cellular backhaul and trunk.
- Layer-2 and Layer-3 support
- Built-in PEP (Performance Enhancing Proxy) enhancing user experience and conserving satellite bandwidth usage, optimizing the link in both in both point-to-point SCPC deployments and in hub-spoke mode.
- Built-in GTP optimization – traffic compression and TCP session optimization and acceleration over the satellite link.
- Encrypted VPN tunnel support, allowing traffic protection from VSAT modem to the hub or to enterprise own router (ordering option).
- OpenAMIP antenna interface support for SATCOM on the Move (SOTM) applications.

Typical Applications and Uses

- Broadband trunks.
- Mass-population Internet access.
- Dynamic video-stream contribution applications such as homeland security (HLS) and smart cities.
- Mission-critical backup links.
- Dynamic-throughput high-capacity links.
- Critical communications satellite-as-backup links.



UNIT CHARACTERISTICS

Form Factor	Rack mountable
Installation	- Indoor. - Matching variety of outdoor / RF options: C-band, X-band, Ku-band and Ka-band. - OpenAMIP antenna integration, GPS integration for on-the-pause / on-the-move applications.
Typical Applications	- IP and Layer-2 trunks. - Mobile on-the-move and on-the-pause applications, video contribution. - Surveillance, government, defense and military. Point-to-point or hub-spoke
Form Factor	Rack mountable
Installation	- Indoor. - Matching variety of outdoor / RF options: C-band, X-band, Ku-band and Ka-band. - OpenAMIP antenna integration, GPS integration for on-the-pause / on-the-move applications.
Typical Applications	- IP and Layer-2 trunks. - Mobile on-the-move and on-the-pause applications, video contribution. - Surveillance, government, defense and military. Point-to-point or hub-spoke
Form Factor	Rack mountable

FORWARD LINK / TX

Technology	DVB TDM Forward Link.
Channel Rate	Up to 500MHz.
Waveform	DVB-S2/S2X ACM, GSE encapsulation, QPSK up to 256APSK LDPC/BCH.
Channel Spacing	5%, 10%, 20%, 25% or 35% channel spacing (roll-off factor).
Terminal IFL Input	F-type 75 ohm, 950 – 2150MHz satellite / band independent.

RETURN LINK / TX

Technology	3D BoD™ Return Link multi-waveform technology: - MF-TDMA CF-DAMA (Combined Free and Demand Assigned Multiple Access). - Point-to-point and hub-spoke DVB-S2X SCPC. - WaveSwitch™ on-the-fly and automatic waveform switching. - Terminal built-in Uplink Power Control (ULPC) and network-wide PowerACM™ link/DRA variability mitigation providing support for Ka, Ku and C-band.
MF-TDMA Channel Rate	64Ksps up to 8192Ksps.
MF-TDMA Waveform	BPSK, QPSK, 8PSK, 16QAM.
MF-TDMA Channel Spacing	10%, 15%, 20% or 25% channel spacing (roll-off factor).
SCPC Channel Rate	500Ksps up to 25Msps.
SCPC Waveform	DVB-S2 QPSK up to 32APSK LDPC/BCH.
SCPC Channel Spacing	5%, 10%, 20%, 25% or 35% channel spacing (roll-off factor).
Terminal IFL Output	F-type 75 ohm, 950 – 2150MHz satellite / band independent.

ENVIRONMENTAL AND MECHANICAL

Interfaces	10/100/1000 Mbps Eth RJ-45. 1x out-of-band satellite modem management.
Download Speed	Up to 100Mbps.
Upload Speed	Up to 100Mbps.
Connectivity	- Wireline transparent Layer-2 connectivity. - VLAN and VRF (Virtual Routing and Forwarding) support. - Layer-3 NAT and DHCP server / DHCP relay. RIP routing protocol. VRRP support. - Full multicast support from hub or from behind remote.
Application Optimization	TCP/IP and HTTP acceleration.
QoS	Built-in embedded QoS support integrated with Forward and Return Link ACM.
Security	IPSec VPN tunnel strong encryption (availability limited by export control regulations).

ENVIRONMENTAL AND MECHANICAL

Dimensions	435 x 45 (1RU) x 315mm (W x H x D)
Weight	3.3Kg
Power	35W (not including RF equipment / BUC power), universal 100-240V AC 50/60Hz power supply; -48V DC power supply option available. 24V DC provided to BUC. 80W available for installation and RF equipment.
Operating Temperature	0 – 50°C, 5% to 90% humidity non-condensing.
Certification	CE, FCC, CSA

AVAILABLE CONFIGURATIONS

U7400 - standard satellite modem.

NOTE: U7400E is also marketed as U7400V and VR7400V

Powerful VSAT satellite modem for advanced enterprise connectivity and cellular backhaul, with a focus on advanced L2 and L3 support.

U7780 is a high performance L2/L3 networking satellite modem/router capable of supporting download speeds of 100Mbps download and upload up to 25Mbps. With integrated L2/L3 optimization, the U7780 is ideal solution for supporting VSAT connected cellular sites (supports cellular traffic header/payload compression and 4G/LTE/5G acceleration) and/or enterprise L2 networks (IP traffic within VLAN/L2 tunnels can be accelerated across satellite).



Key Features

- DVB-S2X forward link. Highest spectral efficiency via highly granular MODCODs, low roll off rates and Adaptive Coding and Modulation (ACM)
- Dynamic return carrier creation to best match needs of TDMA and WaveSwitch users.
- DVB-RCS2 return channels supporting SS-BPSK to 64QAM and up to 5% rolloffs. Dynamically selects optimal block size, and modcod per timeslot/per carrier, per frame interval (every 26.5msecs) to maximize efficiency and throughput.
- WaveSwitch return link waveform offering highest Dynamic SCPC efficiency and performance.
- Hitless and dynamic switching between TDMA and WaveSwitch services
- Internet-traffic optimization and QoS, enhancing user experience and conserving satellite bandwidth
- Operates with most COTS BUC/LNBs or transceivers

Application and Uses

- True broadband capabilities for L2 applications ranging from SMB office productivity to rural community connectivity
- Enterprise and retail connectivity
- 2G,3G, 4G and LTE/5G rural Cellular Backhaul links
- Critical communications satellite-as-backup links
- OpenAMIP support with major antenna manufacturers..

FORWARD LINK		TRAFFIC PORTS AND PERFORMANCE	
Waveform Technology	DVB-S2/S2X ACM, QPSK to 256APSK, all coding and roll off rates	Interfaces	User ports: 1x1000BaseT Ethernet MGMT ports: 1x1000BaseT Ethernet
Encapsulation Modes	GSE Encapsulation	Download speed	Up to 100Mbps
Symbol Rate	From 256Ksps to 125Msps	Upload Speed	Up to 25Mbps
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%, 35%	Packet Processing	20kpps with full QOS and PEP enabled
Terminal IF RX Interface	F-type 75 Ohm, 950~2150MHz satellite/band independent, off/13/18VDC off/22KHz selectable matching COTS ODU and wideband LNBs	Network Services	• Support Layer-2 and layer-3 traffic modes at same time • Layer 2 VLAN and bridging • Layer 3 NAT, DHCP server/relay, IP Routing
RETURN LINK (DVB-RCS2 ENHANCED)			
Waveform Technology	DVB-RCS2 : 16-state QPSK, 8PSK, 16QAM, 32QAM, 64QAM		
Encapsulation Modes	RLE Encapsulation		
Symbol Rate	From 160Ksps to 20Msps (20Msps for QPSK to 16QAM, 11Msps for 32APSK to 64QAM)		
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%		
Link Variation Mitigation	• Terminal built-in Uplink Power Control (ULPC) • Adaptive return carrier sizing every 26.5msecs. • Adaptive block size and MODCOD per timeslot/per carrier, every 26.5msec.		
Tx Power	-30dBm to 0dBm		
Terminal IFL TX Interface	F-type 75 Ohm, 950-2400MHz satellite /band independent, off/10MHz/50Mhz reference, off/24V DC selectable, matching COTS ODU. Provides up to 36W power to the BUC (i.e. 24VDC 1.5A)		
Waveform Technology	DVB-RCS2 : 16-state QPSK, 8PSK, 16QAM, 32QAM, 64QAM		
Encapsulation Modes	RLE Encapsulation		
Symbol Rate	From 160Ksps to 20Msps (20Msps for QPSK to 16QAM, 11Msps for 32APSK to 64QAM)		
Channel Roll-off and Spacing	5%, 10%, 15%, 20%, 25%		

The SBM-90X high throughput SCPC modem with 1.47Gbps aggregated throughput.



Overview

The SBM-90x is SpaceBridge's Advanced Ethernet L2 Trunking Modem offerings with wide band symbol rates (up to 125Msps). The SBM90x was designed with minimal implementation loss to provide near theoretical performance DVB-S2X (EN 302 307-2) across the full range of available high efficiency MODCOD selections. The SBM90x can prioritize traffic based on IP DSCP markings which, in conjunction with SBM90x two-way Adaptive Coding Modulation (ACM), ensuring your high priority traffic is delivered in the most robust and efficient manner.

Applications and Uses

- Satisfies low to high bandwidth trunks with ACM enabled S2X carriers.
- Ideal for broadband Internet trunks
- Community Internet Access Distribution
- 3G/4G/LTE/5G aggregation cellular backhaul
- Mission-critical backup or disaster recovery links.
- Surveillance, government, defense and military.

Features

- Up to 1.47Gbps aggregate throughput (Symmetric 723Mbps)
- Ethernet Jumbo frame support
- Over 1 million packets per second symmetric (2M pps total)
- Software Defined Network support
- Indoor 19" rack-mountable
- LCD Active Front panel for easy configuration
- Layer-2 transparent support
- L3 DSCP Quality of Service (QoS) support within L2 stream

UNIT CHARACTERISTICS

Installation	- Indoor 19" Rack mountable - Matching variety of outdoor / RF options: C-band, X-band, Ku-band and Ka-band.
Typical Applications	- Telecomm: Trunking , community Internet distribution, 3G/4G/LTE/5G cellular backhaul - Professional: Mobile applications, video contribution - Surveillance, government, defense and military - Point-to-point

FORWARD LINK / RX

Technology	DVB-S2X (EN 302 307-2) compliant link.
Channel Rate	500 kbps to 125 Msps Data rate to 738Mbps.
Waveform	DVB-S2X ACM, QPSK up to 256APSK LDPC/BCH
Channel Spacing	5%, 10%, 20%, 25% or 35% channel spacing (roll-off factor)
Encapsulation	GSE Encapsulation
Link variation mitigation	Terminal built-in Uplink Power Control (ULPC) with ACM supporting Ka, Ku and C-band
Terminal IFL Input	50 Ohm N type - L-band 950 – 2150MHz (satellite band independent) - ODU LNB Power: OFF/13Vdc/18Vdc 10MHz RX reference: ON/OFF 22 kHz tone: ON/OFF

ENVIRONMENTAL AND MECHANICAL

Dimensions	435x45 (1RU)x292mm (WxHxD)
Weight	~5Kg
Power Input	150W AC

RETURN LINK / TX

Technology	DVB-S2X (EN 302 307-2) compliant link
Channel Rate	500 kbps to 125 Msps Data rate to 738Mbps.
Waveform	DVB-S2X ACM, QPSK up to 256APSK LDPC/BCH
Channel Spacing	5%, 10%, 20%, 25% or 35% channel spacing (roll-off factor)
Encapsulation	GSE Encapsulation
Link variation mitigation	Terminal built-in Uplink Power Control (ULPC) with ACM supporting Ka, Ku and C-band
Terminal IFL Output	50 Ohm N type - L-band 950 – 2150MHz (satellite band independent) - BUC 10MHz reference ON/OFF - Power to BUC: None (requires external BUC power)

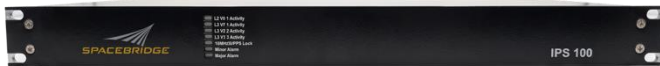
L2 SERVICES AND QOS

Interfaces	2 x 1GbT user data Eth RJ-45 ports, 1x out-of-band modem management Eth port
Download Speed	Up to 738 Mbps
Upload Speed	Up to 738 Mbps
Connectivity	Layer-2 transparent between two end-points.
QoS	Support for IP DSCP markings within the Layer-2 transport stream to prioritize access to satellite bandwidth when link is congested or during ACM.
Packet Handling	2,000,000 pps (1,000,000 pps in each direction)



IPS-100 Disciplined Time Reference / NTP Server

The IPS-100 combines precision timing generation with integrated networking capabilities, enabling seamless deployment in modern synchronization environments. Its hybrid architecture eliminates the need for external timing distribution hardware, simplifying system design and reducing operational complexity.



Overview

The **IPS-100** is a high-precision time and frequency reference system designed to deliver reliable synchronization across a wide range of critical applications, including:

- Satellite communications (DVB-RCS / DVB-RCS2)
- Digital radio and broadcast (DVB-T / DVB-T2)
- 5G and cellular base stations
- Synchronous Ethernet networks

Leveraging advanced disciplining algorithms, the IPS-100 meets stringent requirements for **frequency stability** and **absolute time accuracy**, ensuring continuous and dependable network synchronization.

Optimized for DVB-RCS2 platforms, the IPS-100 distributes a platform-wide NCR/PCR clock, synchronizing all remote terminals to a unified system reference. This results in improved network efficiency, enhanced robustness, and reduced timing drift across the VSAT infrastructure.

Applications and Uses

- VSAT and satellite ground systems
- Broadcast transmission networks
- Mobile and 5G infrastructure
- Financial and data center timing
- Critical infrastructure synchronization

Features

- High-stability Stratum 2 10 MHz reference
- Holdover stability: $\pm 1 \times 10^{-10}$ per day
- 3 isolated 1PPS outputs
- 3 isolated low phase-noise 10 MHz outputs
- Integrated 4-port Layer 2 switch
- Integrated 3-port Layer 3 router
- Remote management via GUI and SNMP
- RS-232 console and dedicated Ethernet management port
- Compact 1U 19" rack-mount chassis
- Front-panel LED status and alarm indicators



10 MHz Frequency Reference

Phase Noise (1 Hz / 10 Hz / 100 Hz / 1k / 10k)	< -100 / -123 / -150 / -150 / -160 (dBc/Hz)
Harmonics	< -40 dBc
Spurious Signals	< -70 dBc
Input	1
Outputs	3
Waveform	Sinewave
Output Level	+7 dBm $\pm$ 1 dB
Impedance	50 Ω
Connectors	BNC (female)
Return Loss	15 dB (typical)

FREQUENCY STABILITY

Short-term	< 1×10^{-10} per day
Long-term	< 1×10^{-8} per year
Frequency Adjustment Range	> 1.6×10^{-8}

1PPS TIME REFERENCE

Input	1
Outputs	3 (individually controlled)
Signal Level	5 V
Drive Capability	50 Ω
Accuracy	$\pm$ 15 ns
Jitter	$\pm$ 2.5 ns
Rise/Fall Time	< 15 ns
Pulse Width	0–50 μ s (configurable)
Timing Reference	Rising edge aligned with IPS-100 update
Connectors	BNC (female)
Impedance	50 Ω
Return Loss	15 dB (typical)

NETWORKING PROTOCOLS

Interfaces	7 $\times$ 10/100/1000 Base-T (RJ-45)
NTP Server	RFC 1305 compliant
Protocols	UDP/IP, TCP/IP, Ethernet (IEEE 802.3)
Management	SNMP v1 / v2

POWER

Input Voltage	90–264 VAC, 50–60 Hz
Power Consumption	25 W

MECHANICAL AND ENVIRONMENT

Form Factor	1U, 19" rack-mount
Dimensions (H $\times$ W $\times$ D)	4.5 cm $\times$ 43.5 cm $\times$ 27.5 cm
Weight	5.5 kg

OPERATING CONDITIONS

Temperature	0°C to +50°C
Humidity	5% to 90% (non-condensing)



This compact yet powerful 25W outdoor BUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS			
RF CHARACTERISTICS	SBB0025CS	SBB0025CX	SBB0025CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz
RF CHARACTERISTICS			
P _{rated} , Rated Output Power	44 dBm / 25 W min		
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	42 dBm / 16 W min		
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	41 dBm / 12.6W min		
Small Signal Gain	70 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.4 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	±0.5 dB		
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P _{Lin2C}		
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level	0 dBm, ±5 dB		
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Up-Converter SSB Phase Noise, max (not present if SSPA)	-80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Integrated Phase Noise	1° RMS max		
Output Spurious: In-band	< -13 dBm		
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P _{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P _{Lin1C}		
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz		
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	175 W
Power Consumption at P _{Lin2C}	150 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 40W outdoor BUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS			
RF CHARACTERISTICS	SBB0040CS	SBB0040CX	SBB0040CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz

RF CHARACTERISTICS	
P _{rated} , Rated Output Power	46 dBm / 40 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	44 dBm / 25 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	43 dBm / 20W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max (not present if SSPA)	
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	300 W
Power Consumption at P _{Lin2C}	260 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 60W outdoor Gen III GaNBUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS			
RF CHARACTERISTICS	SBB0060CS	SBB0060CX	SBB0060CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz
RF CHARACTERISTICS			
P_{sat} , Saturated Output Power	48 dBm / 60 W min		
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	46 dBm / 40 W min		
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	45 dBm / 32 W min		
Small Signal Gain	70 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.4 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	± 0.5 dB		
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P_{Lin2C}		
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level	0 dBm, ± 5 dB		
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Up-Converter SSB Phase Noise, max (not present if SSPA)	-80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Integrated Phase Noise	1° RMS max		
Output Spurious: In-band	< -13 dBm		
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P_{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P_{Lin1C}		
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz		
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P_{Sat}	450 W
Power Consumption at P_{Lin2C}	385 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 80W outdoor Gen III GaNBUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS			
RF CHARACTERISTICS	SBB0080CS	SBB0080CX	SBB0080CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz
RF CHARACTERISTICS			
P_{sat} , Saturated Output Power	49 dBm / 80 W min		
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	47 dBm / 50 W min		
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	46 dBm / 40W min		
Small Signal Gain	70 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.4 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	± 0.5 dB		
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P_{Lin2C}		
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level	0 dBm, ± 5 dB		
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Up-Converter SSB Phase Noise, max (not present if SSPA)	-80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Integrated Phase Noise	1° RMS max		
Output Spurious: In-band	< -13 dBm		
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P_{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P_{Lin1C}		
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz		
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P_{Sat}	450 W
Power Consumption at P_{Lin2C}	385 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude	
Temperature Derating	5° C/1000 m
Factor)	
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5"
	229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 100W outdoor Gen III GaNBUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS			
RF CHARACTERISTICS	SBB0100CS	SBB0100CX	SBB0100CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz
RF CHARACTERISTICS			
P_{sat} , Saturated Output Power	50 dBm / 100 W min		
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	48 dBm / 63 W min		
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	47 dBm / 50W min		
Small Signal Gain	70 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.4 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	± 0.5 dB		
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P_{Lin2C}		
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level	0 dBm, ± 5 dB		
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz		
Up-Converter SSB Phase Noise, max (not present if SSPA)			
Integrated Phase Noise	1° RMS max		
Output Spurious: In-band	< -13 dBm		
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P_{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P_{Lin1C}		
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz		
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	-40 °C to +55 °C
RF Output Connector	CPR137 grooved	Operating Storage	-55 °C to +85 °C
Output VSWR	1.3:1 max	Relative Humidity	100%, up to 4" of rain precipitation/hour
RF Sample	50 Ohms N-type (F)	Altitude	10,000 ft (3,000 m) AMSL
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P	Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P	Environmental	IP67 Rating
Redundancy	MS3112E14-19S		
M&C	RS-232, RS-485, Ethernet (Web, SNMP)		
POWER		MECHANICAL	
AC Voltage Range	90-265 VAC	Dimensions (LxWxH)	9" x 5" x 6.5"
Frequency Range	47-63 Hz		229 x 127 x 165 mm
DC Voltage Range*	36 – 72 VDC	Weight	10 lb (4.5 kg)
Power Consumption at P_{Sat}	500 W		
Power Consumption at P_{Lin2C}	430 W		

* When DC power option is ordered, AC power is not available

This compact yet powerful 125W outdoor Gen III GaNBUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS			
RF CHARACTERISTICS	SBB0125CS	SBB0125CX	SBB0125CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range	950-1525 MHz	950-1825 MHz	975-1275 MHz
LO Frequency	4.9 GHz	4.9 GHz	5.750 GHz

RF CHARACTERISTICS	
P_{sat} , Saturated Output Power	51 dBm / 125 W min
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	49 dBm / 79 W min
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	48 dBm / 62.5W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	± 0.5 dB
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power @ P_{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ± 5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max (not present if SSPA)	
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P_{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P_{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P_{Sat}	510 W
Power Consumption at P_{Lin2C}	445 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 200W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity for both single carrier contribution and multicarrier, multi-transponder DTH distribution applications, for CBH, data and broadband VSAT

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution applications, for CBH, data and broadband VSAT.

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS1000K; SSPB (BUC): SBB1000K

SBS0200C & SBB0200C 200W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS0200CS & SBB0200CS	SBS0200CX & SBB0200CX	SBB0200CI & SBB0200CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1150-1450 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.575 GHz

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	53 dBm / 200 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	51 dBm / 125 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	50 dBm / 100 W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-26 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz; -125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)*	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	
RF Output Connector	CPR137 grooved, threaded 10-32 UNF	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102E16-10P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating

POWER		MECHANICAL	
AC Voltage Range	196-265 VAC	Dimensions (LxWxH)	12.88 x 11.0 x 7.36 in 327 x 279 x 187 mm
Frequency Range	47-63 Hz	Weight	30 lb (13.6 kg)
Power Consumption at P _{Sat}	900 W		
Power Consumption at P _{Lin2C}	785 W		

*Parameters marked with asterisk related to the BUC option

This compact yet powerful 250W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity for both single carrier contribution and multicarrier, multi-transponder DTH distribution applications, for CBH, data and broadband VSAT

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution applications, for CBH, data and broadband VSAT.

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0250K; SSPB (BUC): SBB0250K

SBS0250C/SBB0250C 250W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS0250CS/SBB0250CS	SBS0250CX/SBB0250CX	SBB0250CI/SBB0250CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1150-1450 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.575 GHz

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	54 dBm / 250 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	52 dBm / 160 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	51 dBm / 125 W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz; -125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)*	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	
RF Output Connector	CPR137 grooved, threaded 10-32 UNF	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102E16-10P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating

POWER		MECHANICAL	
AC Voltage Range	196-265 VAC	Dimensions (LxWxH)	12.88 x 11.0 x 7.36 in 327 x 279 x 187 mm
Frequency Range	47-63 Hz	Weight	30 lb (13.6 kg)
Power Consumption at P _{Sat}	1000 W		
Power Consumption at P _{Lin2C}	870 W		

*Parameters marked with asterisk related to the BUC option

This compact yet powerful 400W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Phase Combining/Fail Safe two units to achieve 700W / 400W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0400C; SSPB (BUC): SBB0400C

MODELS			
	SBS0400CS/SBB0400CS	SBS0400CX/SBB0400CX	SBB0400CI/SBB0400CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1275-1575 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.45 GHz

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	56 dBm / 400 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	54 dBm / 250 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	53 dBm / 200 W min
Small Signal Gain	75 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3	-25 dBc at total power = P _{Lin2C}
Measured with 2 equal tones 5 MHz apart	-30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Output Spurious: Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved, threaded 10-32 UNF
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces:	
Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	196-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	1500 W
Power Consumption at P _{Lin2C}	1310 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-55°C to +85°C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	20.00 x 15.00 x 5.48 in 508 x 381 x 139 mm
Weight	58 lb (26.4 kg)

*Parameters marked with asterisk related to the BUC option

This compact yet powerful 500W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Phase Combining/Fail Safe two units to achieve 700W / 500W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0400C; SSPB (BUC): SBB0500C

SBS0500C/SBB0500C 500W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS0400CS/SBB0500CS	SBS0400CX/SBB0500CX	SBB0500CI/SBB0500CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1275-1575 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.45 GHz

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	57 dBm / 500 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	55 dBm / 316 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	54 dBm / 250 W min
Small Signal Gain	75 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band Out-of-band	< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved, threaded 10-32 UNF
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	196-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	1900 W
Power Consumption at P _{Lin2C}	1650 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-55°C to +85°C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	20.00 x 15.00 x 5.48 in 508 x 381 x 139 mm
Weight	58 lb (26.4 kg)

*Parameters marked with asterisk related to the BUC option

This compact yet powerful 600W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Phase Combining/Fail Safe two units to achieve 840W / 600W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0400C; SSPB (BUC): SBB0600C

SBS0600C/SBB0600C 600W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS0600CS/SBB0600CS	SBS0600CX/SBB0600CX	SBB0600CI/SBB0600CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1275-1575 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.45 GHz

RF CHARACTERISTICS	
P_{Sat} , Rated Output Power	58 dBm / 600 W min
P_{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	56 dBm / 400 W min
P_{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	55 dBm / 316 W min
Small Signal Gain	75 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P_{Lin2C} -30 dBc at 6 dB total power back-off from P_{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ± 5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band Out-of-band	< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P_{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P_{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR137 grooved, threaded 10-32 UNF
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	196-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P_{Sat}	2300 W
Power Consumption at P_{Lin2C}	1950 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-55°C to +85°C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	20.00 x 15.00 x 5.48 in 508 x 381 x 139 mm
Weight	58 lb (26.4 kg)

*Parameters marked with asterisk related to the BUC option

This compact yet powerful 800W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Phase Combining/Fail Safe two units to achieve 1400W / 800W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0800C; SSPB (BUC): SBB0800C

SBS0800C/SBB0800C 800W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS0800CS/SBB0800CS	SBS0800CX/SBB0800CX	SBS0800CI/SBB0800CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1150-1450 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.575 GHz
RF CHARACTERISTICS			
P _{Sat} , Rated Output Power	59 dBm / 800 W min		
P _{LinC} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	57 dBm / 500 W min		
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	56 dBm / 400 W min		
Small Signal Gain	80 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.5 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak		
Linearity: IMD3			
Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}		
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level*	0 dBm, ±5 dB		
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;		
Up-Converter SSB Phase Noise, max* (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;		
Integrated Phase Noise	1° RMS max		
Output Spurious: In-band	< -60 dBc		
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P _{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P _{LinC}		
Noise Power Density	Tx < -80 dBm/Hz; Rx < -155 dBm/Hz		
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	
RF Output Connector	CPR137 grooved, threaded 10-32 UNF	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102R14S-7P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating
POWER		MECHANICAL	
AC Voltage Range	195-265 VAC	Dimensions (LxWxH)	28.63 x 19.00 x 6.49 in 727.2 x 482.6 x 164.8 mm
Frequency Range	47-63 Hz	Weight	99 lb (45 kg)
Power Consumption at P _{Sat}	3500 W		
Power Consumption at P _{Lin2C}	3060 W		

*Parameters marked with asterisk related to the BUC option

This compact yet powerful 1000W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Phase Combining/Fail Safe two units to achieve 1750W / 1000W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS1000C; SSPB (BUC): SBB1000C

SBS1000C/SBB1000C 1000W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS1000CS/SBB1000CS	SBS1000CX/SBB1000CX	SBS1000CI/SBB1000CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1150-1450 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.575 GHz
RF CHARACTERISTICS			
P _{Sat} , Rated Output Power	60 dBm / 1000 W min		
P _{LinC} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	58 dBm / 630 W min		
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	59 dBm / 500 W min		
Small Signal Gain	80 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.5 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak		
Linearity: IMD3	-25 dBc at total power = P _{Lin2C}		
Measured with 2 equal tones 5 MHz apart	-30 dBc at 6 dB total power back-off from P _{Sat}		
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level*	0 dBm, ±5 dB		
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;		
Up-Converter SSB Phase Noise, max* (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;		
Integrated Phase Noise	1° RMS max		
Output Spurious: In-band	< -60 dBc		
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P _{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P _{LinC}		
Noise Power Density	Tx < -80 dBm/Hz; Rx < -155 dBm/Hz		
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	
RF Output Connector	CPR137 grooved, threaded 10-32 UNF	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102R14S-7P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating
POWER		MECHANICAL	
AC Voltage Range	195-265 VAC	Dimensions (LxWxH)	28.63 x 19.00 x 6.49 in 727.2 x 482.6 x 164.8 mm
Frequency Range	47-63 Hz	Weight	99 lb (45 kg)
Power Consumption at P _{Sat}	3600 W		
Power Consumption at P _{Lin2C}	3100 W		

*Parameters marked with asterisk related to the BUC option

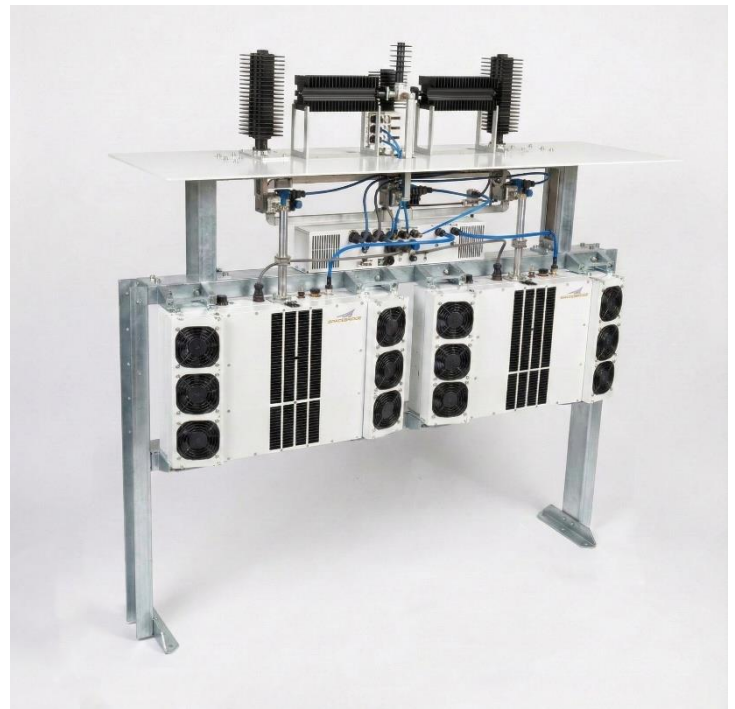
Powered by advanced Gen III GaN broadband technology, this 2000W outdoor SSPA/SSPB delivers exceptional RF performance across the full band, superior efficiency, and outstanding linearity and reliability for high-capacity applications such as multicarrier, multi-transponder TV broadcast (DTH) and HTS VSAT hub networks

Key Features

- Built-in 2:1 and 1:1 Redundancy
- Phase Combining/Fail Safe switching matrix
- High Linearity, efficiency and MTBF
- Built-in High Precision High dynamic range true and accurate RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal overheat protection (shutdown)

Options

- SSPA or SSPB
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 2U Rack mountable RCP for Phase Combining application and 2:1 or 1:1 redundancy



Built for mission-critical satellite communications, this high-performance outdoor HPA delivers outstanding linearity, efficiency, and reliability in a compact, fully integrated HPA. Comprehensive monitoring and control via Ethernet, RS-232, RS-485, and dry contacts enables seamless integration with modern network management and control systems. Its ultra-linear broadband RF architecture maximizes full satellite transponder utilization, illuminating all transponders on the same polarization and supports 256 APSK advanced modulation schemes, enabling highly efficient multicarrier and multi-transponder operation. This makes the unit ideally suited for

DTH broadcast, HTS/UHTS VSAT GateWays and demanding electronic warfare applications including Electronic Countermeasures (ECM) and Electronic Attack (EA).

The rugged IP67 enclosure allows installation directly on the antenna structure or near the kingpost, eliminating waveguide loss associated with indoor installation, simplifying infrastructure and cost. Designed to operate in direct sunlight without air-conditioning, it significantly reduces CapEx for infrastructure requirements eliminating the need for nearby shelter construction and OpEx energy consumption, and maintenance costs, delivering a lower total cost of ownership.

* SSPA: SBBS2000C; SSPB (BUC): SBB2000C

SBS2000C/SBB2000C 2000W C-Band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS2000CS/SBB2000CS	SBS2000CX/SBB2000CX	SBS2000CI/SBB2000CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1150-1450 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.575 GHz
RF CHARACTERISTICS			
P _{Sat} , Rated Output Power	With Phase Combining Single Thread	63 dBm / 2000 W min 60.4 dBm / 1100 W min	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers		60 dBm / 1000 W min	
Small Signal Gain		80 dB typ	
Gain Flatness over full frequency range		± 1.5 dB max	
Gain Flatness over any 40 MHz		± 0.5 dB max	
Gain Control		20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges		± 1.5 dB max	
Gain stability over 24h at constant drive and temperature		0.5 dB peak-to-peak	
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart		-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}	
External Reference Frequency*		10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level*		0 dBm, ±5 dB	
External Reference SSB Phase Noise, max*		-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;	
Up-Converter SSB Phase Noise, max* (not present if SSPA)		-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;	
Integrated Phase Noise		1° RMS max	
Output Spurious: In-band Out-of-band		< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Harmonics at P _{Lin2C}		< -60 dBc	
AM/PM Conversion		2.0°/dB max at P _{LinC}	
Noise Power Density		Tx < - 80 dBm/Hz; Rx < - 155 dBm/Hz	
Output RF Power Monitor		-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.4:1 max	Temperature	
RF Output Connector	CPR137 grooved, threaded 10-32 UNF	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102R14S-7P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232, RS-422 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating
POWER**		MECHANICAL**	
AC Voltage Range	195-265 VAC	Dimensions (LxWxH)	28.63 x 19.00 x 6.49 in 727.2 x 482.6 x 164.8 mm
Frequency Range	47-63 Hz	Weight	99 lb (45 kg)
Power Consumption at P _{Sat}	3900 W		

* Parameters marked with asterisk related to the BUC option

** Per single thread

This compact yet powerful 3200W outdoor SSPA/SSPB harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

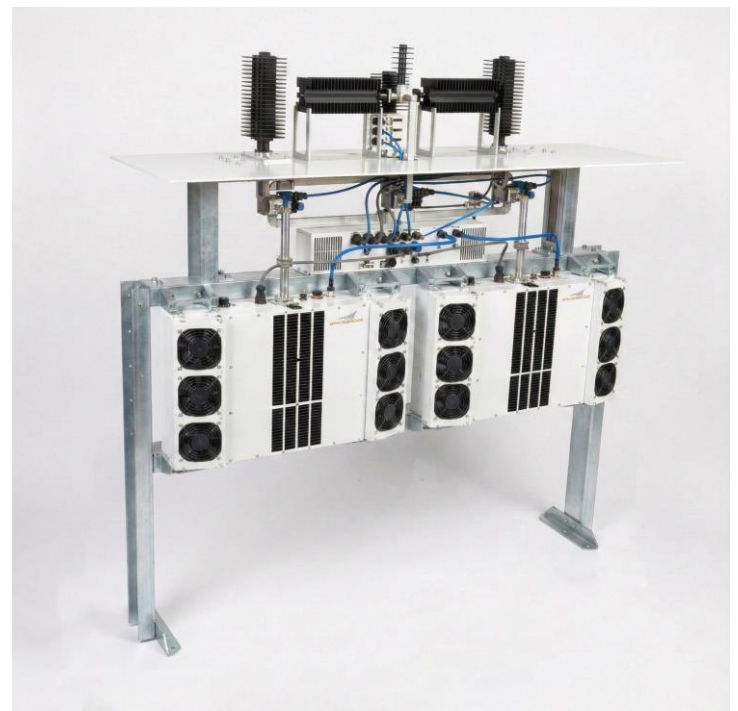
Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- Phase Combining/Fail Safe four 1000W units to achieve 3200W / 1000W P_{sat}
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- SSPA or SSPB
- Standard (CS, 5.850-6.425 GHz), Extended (CX, 5.850-6.725 GHz) and Insat (CI, 6.725-7.025 GHz) bands
- Internal High-stability 10 MHz Reference
- 2U Rack mountable RCP for Phase Combining application and 2:1 or 1:1 redundancy

In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs



With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter.

* SSPA: SBBS3200C; SSPB (BUC): SBB3200C

SBS3200C/SBB3200C 3200W C-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS			
	SBS3200CS/SBB3200CS	SBS3200CX/SBB3200CX	SBS3200CI/SBB3200CI
RF Frequency range	5.850-6.425 GHz	5.850-6.725 GHz	6.725-7.025 GHz
IF Frequency range*	950-1525 MHz	950-1825 MHz	1150-1450 MHz
LO Frequency*	4.9 GHz	4.9 GHz	5.575 GHz
RF CHARACTERISTICS			
P _{Sat} , Rated Output Power	With Phase Combining Single Thread	65 dBm / 3200 W min 60 dBm / 1000 W min	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers		62 dBm / 1600 W min	
Small Signal Gain		80 dB typ	
Gain Flatness over full frequency range		± 1.5 dB max	
Gain Flatness over any 40 MHz		± 0.5 dB max	
Gain Control		20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges		± 1.5 dB max	
Gain stability over 24h at constant drive and temperature		0.5 dB peak-to-peak	
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart		-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}	
External Reference Frequency*		10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level*		0 dBm, ±5 dB	
External Reference SSB Phase Noise, max*		-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;	
Up-Converter SSB Phase Noise, max* (not present if SSPA)		-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;	
Integrated Phase Noise		1° RMS max	
Output Spurious: In-band Out-of-band		< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Harmonics at P _{Lin2C}		< -60 dBc	
AM/PM Conversion		2.0°/dB max at P _{Lin2C}	
Noise Power Density		Tx < -80 dBm/Hz; Rx < -155 dBm/Hz	
Output RF Power Monitor		-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.4:1 max	Temperature	
RF Output Connector	CPR137 grooved, threaded 10-32 UNF	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102R14S-7P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232, RS-422 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating
POWER**		MECHANICAL**	
AC Voltage Range	195-265 VAC	Dimensions (LxWxH)	28.63 x 19.00 x 6.49 in 727.2 x 482.6 x 164.8 mm
Frequency Range	47-63 Hz	Weight	99 lb (45 kg)
Power Consumption at P _{Sat}	3600 W		

* Parameters marked with asterisk related to the BUC option
** Per single thread

This compact and robust 25W Outdoor BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced

capability to utilize high MODCOD on small antennas for high data rate transmission. With an IP67 ingress protection rating, the device can be installed outdoor under the direct sun rays, at a short distance from the antenna feed, usually on the antenna boom, which contributes to significantly improve link budget and save electrical and maintenance costs.

MODEL	
SBB0025X	
RF CHARACTERISTICS	
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range	950 - 1450 MHz
LO Frequency	6.950 GHz
RF CHARACTERISTICS	
P _{Sat} , Output Power	44 dBm / 25 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	42 dBm / 16 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	41 dBm / 12.6 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Output Spurious: Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	160 W
Power Consumption at P _{Lin2C}	135 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact and robust 50W Outdoor BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced

capability to utilize high MODCOD on small antennas for high data rate transmission. With an IP67 ingress protection rating, the device can be installed outdoor under the direct sun rays, at a short distance from the antenna feed, usually on the antenna boom, which contributes to significantly improve link budget and save electrical and maintenance costs.

MODEL	
SBB0050X	
RF CHARACTERISTICS	
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range	950 - 1450 MHz
LO Frequency	6.950 GHz
RF CHARACTERISTICS	
P _{Sat} , Output Power	47 dBm / 50 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	45 dBm / 32 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	44 dBm / 25 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Output Spurious: Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB
INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)
POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	350 W
Power Consumption at P _{Lin2C}	300 W
ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating
MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact and robust 50W Outdoor BUC, powered by cutting-edge technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green

In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced



capability to utilize high MODCOD on small antennas for high data rate transmission. With its IP67 ingress protection rating, the device can be installed outdoors in direct sunlight and positioned close to the antenna feed, typically on the antenna boom. This placement helps significantly improve link budget while reducing both power consumption and maintenance costs.

MODEL	
RF CHARACTERISTICS	SBBE050X
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range	950 - 1450 MHz
LO Frequency	6.950 GHz
RF CHARACTERISTICS	
P _{Sat} , Saturation power	48 dBm / 60 W
P _{1dB} , Output power at 1dB backoff	47 dBm / 50 W
P _{Lin} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	46 dBm / 25 W
Small Signal Gain	78 dB
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	± 0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-27 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-115 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 100 Hz; -150 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max	-55 dBc/Hz @ 10 Hz; -80 dBc/Hz @ 100 Hz; -90 dBc/Hz @ 1 kHz; -95 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -65 dBc
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin}	< -60 dBc
AM/PM Conversion	2.0°/dB max
Noise Power Density	Tx < -80 dBm/Hz Rx < -145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	350 W
Power Consumption at P _{Lin2C}	300 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions	9" x 5" x 6.5"
Weight	229 x 165 x 127 mm 10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact and robust 60W Outdoor BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced

capability to utilize high MODCOD on small antennas for high data rate transmission. With an IP67 ingress protection rating, the device can be installed outdoor under the direct sun rays, at a short distance from the antenna feed, usually on the antenna boom, which contributes to significantly improve link budget and save electrical and maintenance costs.

MODEL	
SBB0060X	
RF CHARACTERISTICS	
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range	950 - 1450 MHz
LO Frequency	6.950 GHz
RF CHARACTERISTICS	
P _{Sat} , Output Power	48 dBm / 60 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	46 dBm / 48 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	45 dBm / 30 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB
INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)
POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	380 W
Power Consumption at P _{Lin2C}	320 W
ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating
MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact and robust 100W Outdoor BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced

capability to utilize high MODCOD on small antennas for high data rate transmission. With an IP67 ingress protection rating, the device can be installed outdoor under the direct sun rays, at a short distance from the antenna feed, usually on the antenna boom, which contributes to significantly improve link budget and save electrical and maintenance costs.

	MODEL
RF CHARACTERISTICS	SBB0100X
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range	950 - 1450 MHz
LO Frequency	6.950 GHz

RF CHARACTERISTICS	
P _{Sat} , Output Power	50 dBm / 100 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	48 dBm / 63 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	47 dBm / 50 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max not present if SSPA)	
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	460 W
Power Consumption at P _{Lin2C}	400 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude	
Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact and robust 125W Outdoor BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced

capability to utilize high MODCOD on small antennas for high data rate transmission. With an IP67 ingress protection rating, the device can be installed outdoor under the direct sun rays, at a short distance from the antenna feed, usually on the antenna boom, which contributes to significantly improve link budget and save electrical and maintenance costs.

	MODEL
RF CHARACTERISTICS	SBB0125X
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range	950 - 1450 MHz
LO Frequency	6.950 GHz

RF CHARACTERISTICS	
P _{Sat} , Output Power	51 dBm / 125 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	49 dBm / 79 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	48 dBm / 62.5 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -81 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -102 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max not present if SSPA)	
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	500 W
Power Consumption at P _{Lin2C}	435 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact and robust 200W Outdoor SSPA/BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced

capability to utilize high MODCOD on small antennas for high data rate transmission. With an IP67 ingress protection rating, the device can be installed outdoor under the direct sun rays, at a short distance from the antenna feed, usually on the antenna boom, which contributes to significantly improve link budget and save electrical and maintenance costs.

* SSPA: SBS0200X; SSPB (BUC): SBB0200X

	MODEL
RF CHARACTERISTICS	SBS0200X/SBB0200X
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range*	950 - 1450 MHz
LO Frequency*	6.950 GHz

RF CHARACTERISTICS	
P _{Sat} , Output Power	53 dBm / 200 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	51 dBm / 126 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	50 dBm / 100 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	± 0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Output Spurious: Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < -80 dBm/Hz Rx < -145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102e16-10P**
M&C Interfaces: Ethernet, Serial	MS3112E14-19P**
RS-232 & RS-485, Form-C	
Redundancy	MS3112E14-19S**

ENVIRONMENTAL	
Cooling system	Forced Air
Temperature:	
Operating	-40° C to +55° C
Storage	-55° C to +85° C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Ingress Protection	IP67

POWER	
DC Voltage Range	180 – 265 VAC
Power Consumption at P _{Sat}	1000 W
Power Consumption at P _{Lin2C}	870 W

MECHANICAL	
Dimensions (LxWxH)	12.88" x 11" x 7.36"
	327 x 279 x 187 mm
Weight	30 lb (13.6 kg)

* Parameters marked with asterisk related to the BUC option

** Mating connectors included



This compact and robust 400W Outdoor SSPA/BUC, powered by cutting-edge third-generation GaN technology, offers exceptional performance with its lightweight design, low power consumption, and superior linearity. Engineered for optimal efficiency and reliability, it is perfectly suited for SCOTP and SCOTM applications, including mobile and marine environments

Key Features

- MIL-STD-188-164C compliant
- Built-in 1:1 and 2:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Phase Combining/Fail Safe two units to achieve 700W / 400W Psat
- Internal High-stability 10 MHz Reference
- White or FS34083 Aerospace flat green



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD on small antennas for high data rate transmission. With its IP67 ingress protection rating, the device can be installed outdoors in direct sunlight and positioned close to the antenna feed, typically on the antenna boom. This placement helps significantly improve link budget while reducing both power consumption and maintenance costs.

* SSPA: SBS0400X; SSPB (BUC): SBB0400X

	MODEL
RF CHARACTERISTICS	SBS0400X/SBB0400X
RF Frequency range	7.9 – 8.4 GHz
IF Frequency range*	950 - 1450 MHz
LO Frequency*	6.950 GHz

RF CHARACTERISTICS	
P _{sat} , Output Power	56 dBm / 400 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	54 dBm / 250 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	53 dBm / 200 W
Small Signal Gain	70 dB nom
Input Level without damage	0 dBm max
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.4 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max
Gain stability over 24h at constant drive and temperature	± 0.5 dB
Power Measurement Stability for built-in True RMS Power Meter	0.5 dBpp
Linearity: IMD3, measured with 2 equal CW carriers 5 MHz apart	-25 dBc max at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max not present if SSPA)	
Integrated SSB Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD-188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz (with external TRF and RRF)
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided, accuracy ±0.25 dB

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	CPR112, grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102e16-10P**
M&C Interfaces: Ethernet, Serial	MS3112E14-19P**
RS-232 & RS-485, Form-C	
Redundancy	MS3112E14-19S**

ENVIRONMENTAL	
Cooling system	Forced Air
Temperature:	
Operating	-40° C to +55° C
Storage	-55° C to +85° C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Ingress Protection	IP67

POWER	
AC Voltage Range	90 – 265 VAC
Power Consumption at P _{sat}	2500 W
Power Consumption at P _{Lin2C}	2150 W

MECHANICAL	
Dimensions (LxWxH)	12.88" x 11" x 7.36" 327 x 279 x 187 mm
Weight	30 lb (13.6 kg)

* Parameters marked with asterisk related to the BUC option

** Mating connectors included



Complete VSAT Dual Band RF Outdoor Unit Solution in a Single Box Both Extended and Regular Ku-bands covered

Key Features

- Integrated BUC, LNB & OMT/TRF
- Fixed linear polarization TX/RX
- Compact size and lightweight
- High-Performance Feed Horn
- Bi-colour status LED
- IP67 Environmental Protection
- One TRCVR works in both bands

Options

- BUC: Covers both Standard (14.00 -14.50 GHz) and Extended bands (13.75- 14.5GHz) with C7700+ type modems
- BUC: Constant Gain type with Low Phase Noise Local Oscillator and External 10 MHz Reference
- LNB: Full range (10.70 - 12.75GHz) Dual-band PLL type
- Compact, Durable Housing with High Thermal Margin
- High Performance Feed Horn pre-fitted
- EN 301428 & FCC 47 CFR15/25 compliant with 98cm & 1.2 m SpaceBridge Antennas, Model# 98138 and 12139
- CE & RED Compliant
- RoHS-2 Compliant



Model # and Ordering

- 3 W Regular/Extended-Ku-band TRCVR: SBTR6030



Feed Horn Parameter	SPECIFICATIONS			Unit	Note
	Minimum	Typical	Maximum		
Type	Long Focal Length (LFL) type				
Design f/D	0.8				
Polarization	Linear, Fixed X-polar				Adjustable
Cross Polarization Discrimination (XPD)	35			dB	

PLNB Parameter	Minimum	Typical	Maximum	Unit	Note
RF Input Frequency Range	10.70		11.70	GHz	Low band
	11.70		12.75	GHz	High band
Local Oscillator Frequency		9.75		GHz	Low band
		10.60		GHz	High band
LO Oscillator Frequency Stability			+/- 5	ppm	PLL, Internal Reference
IF Output Frequency Range	950		1950	MHz	Low band
	1100		2150	MHz	High band
Noise Figure		0.9	1.0	dB	TX On
Conversion Gain	50	56	62	dB	
Band Switch Command	22 kHz tone (DiSEqC)				
Supply Voltage	10.0		26	VDC	
Supply Current			100	mA	

BUC Parameter	Minimum	Typical	Maximum	Unit	Note
IF Input Frequency Range	950		1700	MHz	
Local Oscillator Frequency		12.80		GHz	
RF Output Frequency	13.75		14.50	GHz	
LO Oscillator Phase Noise, integrated		1.0	2.0		100 Hz - 1MHz
LO Oscillator Reference Frequency		1.0		MHz	
Operational Output Power		3.0		W	at P1dB
Conversion Gain	52	55	58	dB	
Supply Voltage	12		30	VDC	
Supply Current at P1dB		0.9	1.0	A	at 24V

General Parameter	Minimum	Typical	Maximum	Unit	Note
Operational Temperature	-40		+60	°C	
Dust/Moisture/Water protection		IP67			100% tested
Connectors		F-type (Receptacle)			75 Ohm
Dimensions without Feed Horn	159 x 9620 x 52			mm	
Weight with Feed Horn			1.6	kg	



This compact yet powerful 16w outdoor compact BUC harnesses advanced technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS		
RF CHARACTERISTICS	SBC0016KL	SBC0016KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1525 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

RF CHARACTERISTICS	
P _{1dB} , Rated Output Power	42 dBm / 16 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	40 dBm / 10 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	39 dBm / 8 W
Small Signal Gain	55 dB typ
Gain Flatness over full frequency range	± 2.0 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz; -125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -63 dBc/Hz @ 100 Hz; -73 dBc/Hz @ 1 kHz; -83 dBc/Hz @ 10 kHz; -93 dBc/Hz @ 100 kHz; -103 dBc/Hz @ 1 MHz
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.5:1 max
RF Sample	50 Ohms N-type (F)
DC Power In	Over IFL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E10-6P
M&C	RS-485, Ethernet

POWER	
DC Voltage Range	15 – 60 VDC
Power Consumption at P _{Sat}	95 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40 °C to +55 °C
Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	5.50" x 4.50" x 3.82" 140 x 114 x 97 mm
Weight	4 lb (1.82 kg)



This compact yet powerful 20W outdoor compact BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS		
RF CHARACTERISTICS	SBC0020KL	SBC0020KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1525 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

RF CHARACTERISTICS	
P _{sat} , Rated Output Power	43 dBm / 20 W
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	41 dBm / 12.6 W
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	40 dBm / 10 W
Small Signal Gain	55 dB typ
Gain Flatness over full frequency range	± 2.0 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	±0.5 dB
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level	0 dBm, ±5 dB
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz; -125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -63 dBc/Hz @ 100 Hz; -73 dBc/Hz @ 1 kHz; -83 dBc/Hz @ 10 kHz; -93 dBc/Hz @ 100 kHz; -103 dBc/Hz @ 1 MHz
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -13 dBm
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0°/dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
DC Power In	Over IFL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E10-6P
M&C	RS-485, Ethernet

POWER	
DC Voltage Range	15 – 60 VDC
Power Consumption at P _{sat}	110 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40 °C to +55 °C
Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	5.50" x 4.50" x 3.82" 140 x 114 x 97 mm
Weight	4 lb (1.82 kg)



This compact yet powerful 25W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



	MODELS	
RF CHARACTERISTICS	SBB0025KL	SBB0025KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

	RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	44 dBm / 25 W	
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	42 dBm / 16 W	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	41 dBm / 12.6 W	
Small Signal Gain	70 dB typ	
Gain Flatness over full frequency range	± 1.5 dB max	
Gain Flatness over any 40 MHz	± 0.4 dB max	
Gain Control	20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max	
Gain stability over 24h at constant drive and temperature	±0.5 dB	
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}	
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level	0 dBm, ±5 dB	
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz;	-125 dBc/Hz @ 100 Hz;
	-140 dBc/Hz @ 1 kHz;	-155 dBc/Hz @ 10 kHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-165 dBc/Hz @ 100 kHz;	-165 dBc/Hz @ 1 MHz;
	-54 dBc/Hz @ 10 Hz;	
Integrated Phase Noise	-72 dBc/Hz @ 100 Hz;	
	-80 dBc/Hz @ 1 kHz;	
Output Spurious: In-band	-90 dBc/Hz @ 10 kHz;	
	-100 dBc/Hz @ 100 kHz;	
Out-of-band	-115 dBc/Hz @ 1 MHz	
	1° RMS max	
Harmonics at P _{Lin2C}	< -60 dBc	
AM/PM Conversion	2.0°/dB max at P _{Lin1C}	
Noise Power Density	Tx < - 80 dBm/Hz	
	Rx < - 145 dBm/Hz	
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	

	INTERFACES
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

	POWER
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	300 W
Power Consumption at P _{Lin2C}	250 W

	ENVIRONMENTAL
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

	MECHANICAL
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 25W outdoor compact BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS		
RF CHARACTERISTICS	SBC0025KL	SBC0025KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1525 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

RF CHARACTERISTICS		
PSat, Rated Output Power	44 dBm / 25 W	
PLin1C, Linear Power as defined by MIL- STD-188-164C, 1 carrier	42 dBm / 16 W	
PLin2C, Linear Power as defined by MIL-STD-188-164C, 2 carriers	41 dBm / 12.6 W	
Small Signal Gain	55 dB typ	
Gain Flatness over full frequency range	± 2.0 dB max	
Gain Flatness over any 40 MHz	± 0.5 dB max	
Gain Control	20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max	
Gain stability over 24h at constant drive and temperature	±0.5 dB	
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = PLin2C	
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level	0 dBm, ±5 dB	
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz;	-125 dBc/Hz @ 100 Hz;
	-140 dBc/Hz @ 1 kHz;	-155 dBc/Hz @ 10 kHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-165 dBc/Hz @ 100 kHz;	-165 dBc/Hz @ 1 MHz;
	-54 dBc/Hz @ 10 Hz;	
	-63 dBc/Hz @ 100 Hz;	
	-73 dBc/Hz @ 1 kHz;	
	-83 dBc/Hz @ 10 kHz;	
	-93 dBc/Hz @ 100 kHz;	
Integrated Phase Noise	1° RMS max	
	< -13 dBm	
Output Spurious: In-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Out-of-band		
Harmonics at PLin2C	< -60 dBc	
AM/PM Conversion	2.0 °/dB max at PLin1C	
Noise Power Density	Tx < - 80 dBm/Hz	
	Rx < - 145 dBm/Hz	
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
DC Power In	Over IFL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E10-6P
M&C	RS-485, Ethernet

POWER	
DC Voltage Range	15 – 60 VDC
Power Consumption at P _{sat}	140 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40 °C to +55 °C
Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	5.50" x 4.50" x 3.82" 140 x 114 x 97 mm
Weight	4 lb (1.82 kg)



This compact yet powerful 40W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



MODELS		
RF CHARACTERISTICS	SBB0040KL	SBB0040KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

RF CHARACTERISTICS		
P _{Sat} , Rated Output Power	46 dBm / 40 W	
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	44 dBm / 25 W	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	43 dBm / 20 W	
Small Signal Gain	70 dB typ	
Gain Flatness over full frequency range	± 1.5 dB max	
Gain Flatness over any 40 MHz	± 0.4 dB max	
Gain Control	20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max	
Gain stability over 24h at constant drive and temperature	±0.5 dB	
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}	
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level	0 dBm, ±5 dB	
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz;	-125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz	
Up-Converter SSB Phase Noise, max (not present if SSPA)		
Integrated Phase Noise	1° RMS max	
Output Spurious: In-band	< -13 dBm	
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Harmonics at P _{Lin2C}	< -60 dBc	
AM/PM Conversion	2.0° /dB max at P _{Lin1C}	
Noise Power Density	Tx < - 80 dBm/Hz	
	Rx < - 145 dBm/Hz	
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	300 W
Power Consumption at P _{Lin2C}	250 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 50W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



	MODELS	
RF CHARACTERISTICS	SBB0050KL	SBB0050KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950 – 1450 MHz	950 – 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

	RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	47 dBm / 50 W	
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	45 dBm / 32 W	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	44 dBm / 25 W	
Small Signal Gain	70 dB typ	
Gain Flatness over full frequency range	± 1.5 dB max	
Gain Flatness over any 40 MHz	± 0.4 dB max	
Gain Control	20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max	
Gain stability over 24h at constant drive and temperature	±0.5 dB	
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}	
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level	0 dBm, ±5 dB	
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz;	-125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz	
Up-Converter SSB Phase Noise, max (not present if SSPA)		
Integrated Phase Noise	1° RMS max	
Output Spurious: In-band	< -13 dBm	
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Harmonics at P _{Lin2C}	< -60 dBc	
AM/PM Conversion	2.0° /dB max at P _{Lin1C}	
Noise Power Density	Tx < - 80 dBm/Hz	
	Rx < - 145 dBm/Hz	
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	350 W
Power Consumption at P _{Lin2C}	290 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available

This compact yet powerful 60W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220 VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 48 VDC power feed



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction



	MODELS	
RF CHARACTERISTICS	SBB0060KL	SBB0060KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

	RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	48 dBm / 60 W	
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	46 dBm / 40 W	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	45 dBm / 32 W	
Small Signal Gain	70 dB typ	
Gain Flatness over full frequency range	± 1.5 dB max	
Gain Flatness over any 40 MHz	± 0.4 dB max	
Gain Control	20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max	
Gain stability over 24h at constant drive and temperature	±0.5 dB	
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}	
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level	0 dBm, ±5 dB	
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz;	-125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz	
Integrated Phase Noise	1° RMS max	
Output Spurious: In-band	< -13 dBm	
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Harmonics at P _{Lin2C}	< -60 dBc	
AM/PM Conversion	2.0°/dB max at P _{Lin1C}	
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz	
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In/DC Power In*	MS3102R14S-7P/MS3102R14S-9P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S
M&C	RS-232, RS-485, Ethernet (Web, SNMP)

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
DC Voltage Range*	36 – 72 VDC
Power Consumption at P _{Sat}	400 W
Power Consumption at P _{Lin2C}	340 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature Operating Storage	-40 °C to +55 °C -55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	9" x 5" x 6.5" 229 x 127 x 165 mm
Weight	10 lb (4.5 kg)

* When DC power option is ordered, AC power is not available



This compact yet powerful 80W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals such as ESTELLA WaveSwitch modems that

combine both TDMA and dynamic SCPC waveforms in one modem. With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna boom/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in the ongoing OPEX electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction

MODELS			
RF CHARACTERISTICS	SBB0080KL	SBB0080KX	
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz	
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz	
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz	
RF CHARACTERISTICS			
P _{Sat} , Rated Output Power	49 dBm / 80 W		
P _{Lin1C} , Linear Power as defined by MIL- STD-188-164C, 1 carrier	47 dBm / 50 W		
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	46 dBm / 40 W		
Small Signal Gain	70 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.4 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	±0.5 dB		
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}		
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level	0 dBm, ±5 dB		
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz;	-125 dBc/Hz @ 100 Hz;	
	-140 dBc/Hz @ 1 kHz;	-155 dBc/Hz @ 10 kHz;	
Up-Converter SSB Phase Noise, max (not present if SSPA)	-165 dBc/Hz @ 100 kHz;	-165 dBc/Hz @ 1 MHz;	
	-50 dBc/Hz @ 10 Hz;		
	-65 dBc/Hz @ 100 Hz;		
	-80 dBc/Hz @ 1 kHz;		
	-90 dBc/Hz @ 10 kHz;		
	-100 dBc/Hz @ 100 kHz;		
Integrated Phase Noise	-115 dBc/Hz @ 1 MHz		
	1° RMS max		
Output Spurious: In-band	< -60 dBc		
Output Spurious: Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P _{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0°/dB max at P _{Lin1C}		
Noise Power Density	Tx < - 80 dBm/Hz		
	Rx < - 145 dBm/Hz		
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Operating Temperature	-40 °C to +55 °C
RF Output Connector	WR75 grooved	Storage	-55 °C to +85 °C
Output VSWR	1.3:1 max	Relative Humidity	100%, up to 4” of rain precipitation/hour
RF Sample	50 Ohms N-type (F)	Altitude	10,000 ft (3,000 m) AMSL
AC Power In	MS3102E16-10P	Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Environmental	IP67 Rating
Redundancy	MS3112E14-19S		
POWER		MECHANICAL	
AC Voltage Range	90-265 VAC	Dimensions (LxWxH)	12.88 x 11.0 x 7.36 in 327 x 279 x 187 mm
Frequency Range	47-63 Hz	Weight	30 lb (13.6 kg)
Power Consumption at P _{Lin1C}	750 W		
Power Consumption at P _{Lin2C}	650 W		

This compact yet powerful 100W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals such as ESTELLA WaveSwitch modems that

combine both TDMA and dynamic SCPC waveforms in one modem. With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna boom/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in the ongoing OPEX electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction

MODELS			
RF CHARACTERISTICS	SBB0100KL	SBB0100KX	
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz	
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz	
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz	
RF CHARACTERISTICS			
P _{Sat} , Rated Output Power	50 dBm / 100 W		
P _{Lin1C} , Linear Power as defined by MIL- STD-188-164C, 1 carrier	48 dBm / 63 W		
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	47 dBm / 50 W		
Small Signal Gain	70 dB typ		
Gain Flatness over full frequency range	± 1.5 dB max		
Gain Flatness over any 40 MHz	± 0.4 dB max		
Gain Control	20 dB min dynamic range, 0.1 dB steps		
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max		
Gain stability over 24h at constant drive and temperature	±0.5 dB		
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}		
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)		
External Reference Level	0 dBm, ±5 dB		
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz;	-125 dBc/Hz @ 100 Hz;	
	-140 dBc/Hz @ 1 kHz;	-155 dBc/Hz @ 10 kHz;	
Up-Converter SSB Phase Noise, max (not present if SSPA)	-165 dBc/Hz @ 100 kHz;	-165 dBc/Hz @ 1 MHz;	
	-50 dBc/Hz @ 10 Hz;		
	-65 dBc/Hz @ 100 Hz;		
	-80 dBc/Hz @ 1 kHz;		
	-90 dBc/Hz @ 10 kHz;		
	-100 dBc/Hz @ 100 kHz;		
Integrated Phase Noise	-115 dBc/Hz @ 1 MHz		
	1° RMS max		
Output Spurious: In-band	< -60 dBc		
Output Spurious: Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C		
Harmonics at P _{Lin2C}	< -60 dBc		
AM/PM Conversion	2.0° /dB max at P _{Lin1C}		
Noise Power Density	Tx < - 80 dBm/Hz		
	Rx < - 145 dBm/Hz		
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided		
INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Operating Temperature	-40 °C to +55 °C
RF Output Connector	WR75 grooved	Storage	-55 °C to +85 °C
Output VSWR	1.3:1 max	Relative Humidity	100%, up to 4” of rain precipitation/hour
RF Sample	50 Ohms N-type (F)	Altitude	10,000 ft (3,000 m) AMSL
AC Power In	MS3102E16-10P	Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Environmental	IP67 Rating
Redundancy	MS3112E14-19S		
POWER		MECHANICAL	
AC Voltage Range	90-265 VAC	Dimensions (LxWxH)	12.88 x 11.0 x 7.36 in 327 x 279 x 187 mm
Frequency Range	47-63 Hz	Weight	30 lb (13.6 kg)
Power Consumption at P _{Lin1C}	780 W		
Power Consumption at P _{Lin2C}	680 W		

This compact yet powerful 125W outdoor BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as broadcast contribution and CBH

Key Features

- Built-in 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Built-in 110/220VAC power supply
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding mobile and fixed applications, specifically designed for outdoor installations, and offers the advanced capability to utilize high MODCOD (up to 256 APSK) for broadcast contribution, as well as for Cellular Backhaul (CBH) and high-capacity data transmission for VSAT and SCPC User Terminals such as ESTELLA WaveSwitch modems that

combine both TDMA and dynamic SCPC waveforms in one modem. With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna boom/kingpost, on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in the ongoing OPEX electrical costs and maintenance expenses, while eliminating the need for nearby shelter construction

MODELS		
RF CHARACTERISTICS	SBB0125KL	SBB0125KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz

RF CHARACTERISTICS		
P _{Sat} , Rated Output Power	51 dBm / 125 W	
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	49 dBm / 79 W	
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	48 dBm / 63 W	
Small Signal Gain	70 dB typ	
Gain Flatness over full frequency range	± 1.5 dB max	
Gain Flatness over any 40 MHz	± 0.4 dB max	
Gain Control	20 dB min dynamic range, 0.1 dB steps	
Gain Stability over full Temperature and Frequency ranges	± 1.5 dB max	
Gain stability over 24h at constant drive and temperature	±0.5 dB	
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}	
External Reference Frequency	10 MHz, sinusoidal, multiplexed with L-band (IF In)	
External Reference Level	0 dBm, ±5 dB	
External Reference SSB Phase Noise, max	-110 dBc/Hz @ 10 Hz; -140 dBc/Hz @ 1 kHz; -165 dBc/Hz @ 100 kHz;	-125 dBc/Hz @ 100 Hz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max (not present if SSPA)	-50 dBc/Hz @ 10 Hz; -65 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz	
Integrated Phase Noise	1° RMS max	
Output Spurious: In-band	< -60 dBc	
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C	
Harmonics at P _{Lin2C}	< -60 dBc	
AM/PM Conversion	2.0°/dB max at P _{Lin1C}	
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 145 dBm/Hz	
Output RF Power Monitor	-40 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided	

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102E16-10P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	90-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Lin1C}	800 W
Power Consumption at P _{Lin2C}	690 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Operating Temperature	-40 °C to +55 °C
Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	12.88 x 11.0 x 7.36 in 327 x 279 x 187 mm
Weight	30 lb (13.6 kg)

This compact yet powerful 200W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs/UT

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0200K; SSPB (BUC): SBB0200K

MODELS		
	SBS0200KL/SBB0200KL	SBS0200KX/SBB0200KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	53 dBm / 200 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	51 dBm / 126 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	50 dBm / 100 W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max* (not present if SSPA)	
Integrated Phase Noise	1° RMS max
Output Spurious: In-band Out-of-band	< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	52 dB, 1dBpp flatness over frequency range

INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	
RF Output Connector	WR75 grooved	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102E16-10P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating

POWER		MECHANICAL	
AC Voltage Range	196-265 VAC	Dimensions (LxWxH)	20.00 x 15.00 x 5.48 in 508 x 381 x 139 mm
Frequency Range	47-63 Hz	Weight	58 lb (26.4 kg)
Power Consumption at P _{Sat}	1300 W		
Power Consumption at P _{Lin2C}	1100 W		

*Parameters marked with asterisk related to the BUCoption

** Switchable Local Oscillator



This compact yet powerful 250W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP 2:1 redundancy

In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs/UT



With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0250K; SSPB (BUC): SBB0250K

MODELS		
	SBS0250KL/SBB0250KL	SBS0250KX/SBB0250KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	54 dBm / 250 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	53 dBm / 159 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	51 dBm / 125 W min
Small Signal Gain	70 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -115 dBc/Hz @ 1 MHz
Up-Converter SSB Phase Noise, max* (not present if SSPA)	
Integrated Phase Noise	1° RMS max
Output Spurious: In-band Out-of-band	< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	52 dB, 1dBpp flatness over frequency range

INTERFACES		ENVIRONMENTAL	
IF Input connector	50 Ohms N-type (F)	Cooling systems	Forced Air
Input VSWR	1.5:1 max	Temperature	
RF Output Connector	WR75 grooved	Operating	-40°C to +55°C
Output VSWR	1.3:1 max	Storage	-55°C to +85°C
RF Sample	50 Ohms N-type (F)	Relative Humidity	100%, up to 4" of rain precipitation/hour
AC Power In	MS3102E16-10P	Altitude	10,000 ft (3,000 m) AMSL
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P	Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Redundancy	MS3112E14-19S	Environmental	IP67 Rating

POWER		MECHANICAL	
AC Voltage Range	196-265 VAC	Dimensions (LxWxH)	20.00 x 15.00 x 5.48 in 508 x 381 x 139 mm
Frequency Range	47-63 Hz	Weight	58 lb (26.4 kg)
Power Consumption at P _{Sat}	1300 W		
Power Consumption at P _{Lin2C}	1130 W		

*Parameters marked with asterisk related to the BUCoption

** Switchable Local Oscillator



This compact yet powerful 400W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Phase Combining/Fail Safe two units to achieve 700W / 400W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0400K; SSPB (BUC): SBB0400K

MODELS		
	SBS0400KL/SBB0400KL	SBS0400KL/SBB0400KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950 – 1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	56 dBm / 400 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	54 dBm / 250 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	53 dBm / 200 W min
Small Signal Gain	80 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3	-25 dBc at total power = P _{Lin2C}
Measured with 2 equal tones 5 MHz apart	-30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	196-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	2500 W
Power Consumption at P _{Lin2C}	2150 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	28.63 x 16.00 x 6.50 in 727.2 x 406.4 x 164.7 mm
Weight	99 lb (45 kg)

*Parameters marked with asterisk related to the BUC option

**Switchable Local Oscillator



This compact yet powerful 500W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Phase Combining/Fail Safe two units to achieve 875W / 500W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter construction

* SSPA: SBS0500K; SSPB (BUC): SBB0500K

MODELS		
	SBB0500KL	SBB0500KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	57 dBm / 500 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	55 dBm / 316 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	54 dBm / 250 W min
Small Signal Gain	80 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	0.5 dB peak-to-peak
Linearity: IMD3	-25 dBc at total power = P _{Lin2C}
Measured with 2 equal tones 5 MHz apart	-30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz;
	-140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz;
	-165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
	-54 dBc/Hz @ 10 Hz;
	-72 dBc/Hz @ 100 Hz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	-80 dBc/Hz @ 1 kHz;
	-90 dBc/Hz @ 10 kHz;
	-100 dBc/Hz @ 100 kHz;
	-112 dBc/Hz @ 1 MHz;
Integrated Phase Noise	1° RMS max
Output Spurious: In-band	< -60 dBc
Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz
	Rx < - 155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	196-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	2600 W
Power Consumption at P _{Lin2C}	2200 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	-40 °C to +55 °C
Operating Storage	-55 °C to +85 °C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5° C/1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	28.63 x 16.00 x 6.50 in 727.2 x 406.4 x 164.7 mm
Weight	99 lb (45 kg)

*Parameters marked with asterisk related to the BUC option

**Switchable Local Oscillator

This compact yet powerful 800W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Phase Combining/Fail Safe two units to achieve 1750W / 800W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy

In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs



With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter.

* SSPA: SBS0800K; SSPB (BUC): SBB0800K

	MODELS	
	SBS0800KL/SBB0800KL	SBS0800KX/SBB0800KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	59 dBm / 800 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	57 dBm / 500 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	56 dBm / 400 W min
Small Signal Gain	75 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	± 0.5 dB peak-to-peak
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	
Integrated Phase Noise	1° RMS max < -60 dBc
Output Spurious: In-band Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102E20-51P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	180-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	5900 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-55°C to +85°C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	28.6 x 25 x 6.5 in 727.2 x 635.0 x 164.7 mm
Weight	120 lb (54 kg)

* Related to the BUC option

** Selectable via M&C interface



This compact yet powerful 1000W outdoor SSPA/BUC harnesses advanced Gen III GaN technology, delivering exceptional broadband RF performance, high efficiency, and outstanding linearity and reliability for applications such as multicarrier, multi-transponder DTH contribution or distribution, CBH, HTS VSAT Hub

Key Features

- Built-in 2:1 and 1:1 Redundancy, no External Redundancy Controller required
- High Linearity, efficiency and MTBF
- Built-in High Precision true RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal shutdown

Options

- HPA or BUC
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Phase Combining/Fail Safe two units to achieve 1750W / 1000W P_{sat}
- Internal High-stability 10 MHz Reference
- 1U Rack mountable RCP (Remote Control Panel) for 1:1 redundancy
- 2U Rack mountable RCP for Phase Combining application and 2:1 redundancy



With an IP67 ingress protection rating, the device can be mounted outdoor under the direct sun rays on an antenna post/kingpost, or on the platform behind the antenna, or inside the antenna hub, effectively eliminating the W/G RF loss commonly associated with indoor units. Additionally, it does not require air-conditioning, resulting in significant reductions in ongoing electrical costs and maintenance expenses, while often eliminating the need for nearby shelter.

* SSPA: SBS1000K; SSPB (BUC): SBB1000K

In addition to its exceptional performance and reliability, this device boasts a comprehensive suite of monitoring and control capabilities, easily accessible via Ethernet, serial RS232, RS485 interfaces, or dry contacts. It is the premier choice for demanding applications, specifically designed for outdoor installations, and because its ultra-linear performance offers the capability to utilize 256 APSK modulation on small (1.8m) antennas for contribution, as well as multicarrier, multi-transponder use for DTH distribution and data transmission, such as HTS/UHTS VSAT Hubs

SBS1000K/SBB1000K 1000W Appendix 30B-15 and Kx-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

	MODELS	
	SBS1000KL/SBB1000KL	SBS1000KX/SBB1000KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS	
P _{Sat} , Rated Output Power	60 dBm / 1000 W min
P _{Lin1C} , Linear Power as defined by MIL-STD-188-164C, 1 carrier	58 dBm / 630 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers	57 dBm / 500 W min
Small Signal Gain	75 dB typ
Gain Flatness over full frequency range	± 1.5 dB max
Gain Flatness over any 40 MHz	± 0.5 dB max
Gain Control	20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges	± 2.0 dB max
Gain stability over 24h at constant drive and temperature	± 0.5 dB peak-to-peak
Linearity: IMD3, measured with 2 equal tones 5 MHz apart	-25 dBc at total power = P _{Lin2C}
External Reference Frequency*	10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*	0 dBm, ±5 dB
External Reference SSB Phase Noise, max*	-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz; -54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)	
Integrated Phase Noise	1° RMS max < -60 dBc
Output Spurious: In-band Out-of-band	Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}	< -60 dBc
AM/PM Conversion	2.0° /dB max at P _{Lin1C}
Noise Power Density	Tx < - 80 dBm/Hz Rx < - 155 dBm/Hz
Output RF Power Monitor	-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.5:1 max
RF Output Connector	WR75 grooved
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102E20-51P
M&C Interfaces: Ethernet, Serial RS-232 & RS-485	MS3112E14-19P
Redundancy	MS3112E14-19S

POWER	
AC Voltage Range	180-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	6500 W

ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-55°C to +85°C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Environmental	IP67 Rating

MECHANICAL	
Dimensions (LxWxH)	28.6 x 25 x 6.5 in 727.2 x 635.0 x 164.7 mm
Weight	120 lb (54 kg)

* Related to the BUC option
** Selectable via M&C interface



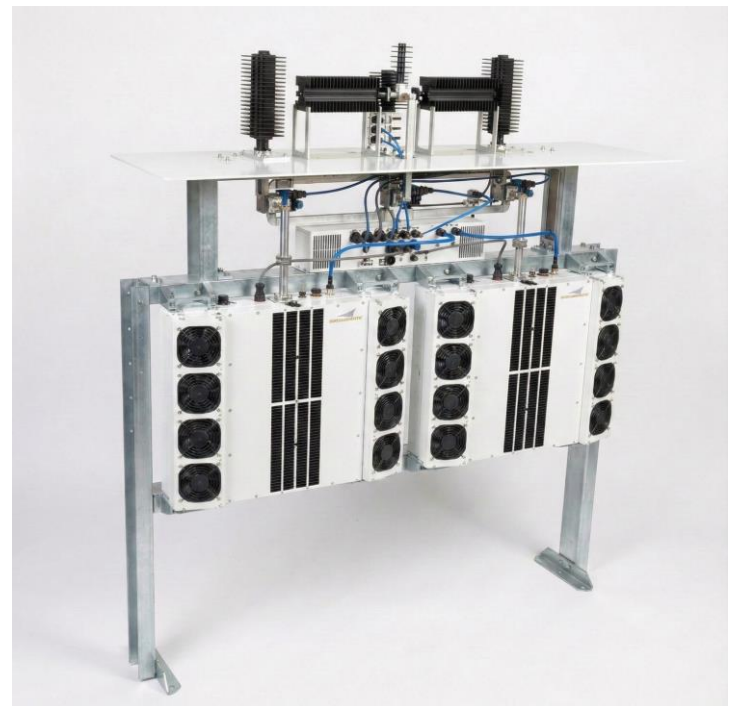
Powered by advanced Gen III GaN broadband technology, this 2000W outdoor SSPA/SSPB delivers exceptional RF performance across the full band, superior efficiency, and outstanding linearity and reliability for high-capacity applications such as multicarrier, multi-transponder TV broadcast (DTH) and HTS VSAT hub networks

Key Features

- Built-in 2:1 and 1:1 Redundancy
- Phase Combining/Fail Safe switching matrix
- High Linearity, efficiency and MTBF
- Built-in High Precision High dynamic range true and accurate RMS Output Power Meter
- Web Interface, SNMP support
- Output Overdrive Protection
- Output VSWR Protection
- Thermal overheat protection (shutdown)

Options

- SSPA or SSPB
- Appendix 30B-15 (KL, 12.75-13.25GHz) and Kx (KX, 13.75-14.5GHz) bands
- Internal High-stability 10 MHz Reference
- 2U Rack mountable RCP for Phase Combining application and 2:1 or 1:1 redundancy



Built for mission-critical satellite communications, this high-performance outdoor HPA delivers outstanding linearity, efficiency, and reliability in a compact, fully integrated HPA. Comprehensive monitoring and control via Ethernet, RS-232, RS-485, and dry contacts enables seamless integration with modern network management and control systems. Its ultra-linear broadband RF architecture maximizes full satellite transponder utilization, illuminating all transponders on the same polarization and supports 256 APSK advanced modulation schemes, enabling highly efficient multicarrier and multi-transponder operation. This makes the unit ideally suited for

DTH broadcast, HTS/UHTS VSAT GateWays and demanding electronic warfare applications including Electronic Countermeasures (ECM) and Electronic Attack (EA).

The rugged IP67 enclosure allows installation directly on the antenna structure or near the kingpost, eliminating waveguide loss associated with indoor installation, simplifying infrastructure and cost. Designed to operate in direct sunlight without air-conditioning, it significantly reduces CapEx for infrastructure requirements eliminating the need for nearby shelter construction and OpEx energy consumption, and maintenance costs, delivering a lower total cost of ownership.

* SSPA: SBBS2000K; SSPB (BUC): SBB2000K

SBS2000K/SBB2000K 2000W Ku-band Outdoor Multicarrier Gen III GaN SSPA/BUC

Technical Specifications

MODELS		
	SBS2000KL/SBB2000KL	SBS2000KX/SBB2000KX
RF Frequency range	12.75 – 13.25 GHz	13.75 – 14.5 GHz / 14.0 – 14.5 GHz
IF Frequency range*	950-1450 MHz	950 - 1700 MHz / 950 – 1450 MHz
LO Frequency*	11.8 GHz	12.8 GHz / 13.05 GHz**

RF CHARACTERISTICS		
P _{Sat} , Rated Output Power	With Phase Combining Single Thread	63 dBm / 2000 W min 60.4 dBm / 1100 W min
P _{Lin2C} , Linear Power as defined by MIL-STD-188-164C, 2 carriers		60 dBm / 1000 W min
Small Signal Gain		80 dB typ
Gain Flatness over full frequency range		± 1.5 dB max
Gain Flatness over any 40 MHz		± 0.5 dB max
Gain Control		20 dB min dynamic range, 0.1 dB steps
Gain Stability over full Temperature and Frequency ranges		± 1.5 dB max
Gain stability over 24h at constant drive and temperature		0.5 dB peak-to-peak
Linearity: IMD3 Measured with 2 equal tones 5 MHz apart		-25 dBc at total power = P _{Lin2C} -30 dBc at 6 dB total power back-off from P _{Sat}
External Reference Frequency*		10 MHz, sinusoidal, multiplexed with L-band (IF In)
External Reference Level*		0 dBm, ±5 dB
External Reference SSB Phase Noise, max*		-110 dBc/Hz @ 10 Hz; -125 dBc/Hz @ 100 Hz; -140 dBc/Hz @ 1 kHz; -155 dBc/Hz @ 10 kHz; -165 dBc/Hz @ 100 kHz; -165 dBc/Hz @ 1 MHz;
Up-Converter SSB Phase Noise, max* (not present if SSPA)		-54 dBc/Hz @ 10 Hz; -72 dBc/Hz @ 100 Hz; -80 dBc/Hz @ 1 kHz; -90 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz; -112 dBc/Hz @ 1 MHz;
Integrated Phase Noise		1° RMS max
Output Spurious: In-band Out-of-band		< -60 dBc Complies with ETSI EN 301 428/430 and MIL-STD188-164C
Harmonics at P _{Lin2C}		< -60 dBc
AM/PM Conversion		2.0°/dB max at P _{LinC}
Noise Power Density		Tx < - 80 dBm/Hz; Rx < - 155 dBm/Hz
Output RF Power Monitor		-50 dB, 1dB peak-to-peak flatness over frequency range, calibration chart provided

INTERFACES	
IF Input connector	50 Ohms N-type (F)
Input VSWR	1.4:1 max
RF Output Connector	CPR137 grooved, threaded 10-32 UNF
Output VSWR	1.3:1 max
RF Sample	50 Ohms N-type (F)
AC Power In	MS3102R14S-7P
M&C Interfaces: Ethernet, Serial RS-232, RS-422 & RS-485, Form-C	MS3112E14-19P
Redundancy	MS3112E14-19S

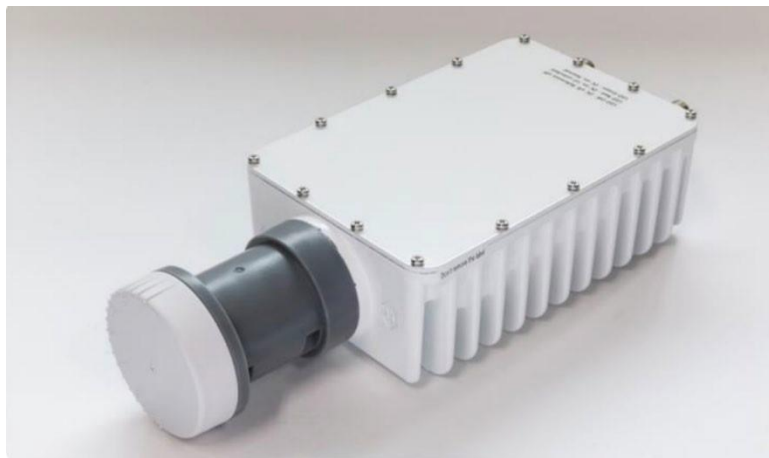
ENVIRONMENTAL	
Cooling systems	Forced Air
Temperature	
Operating	-40°C to +55°C
Storage	-55°C to +85°C
Relative Humidity	100%, up to 4" of rain precipitation/hour
Altitude	10,000 ft (3,000 m) AMSL
Adiabatic Derating (Altitude Temperature Derating Factor)	5°C / 1000 m
Environmental	IP67 Rating

POWER***	
AC Voltage Range	195-265 VAC
Frequency Range	47-63 Hz
Power Consumption at P _{Sat}	4950 W

MECHANICAL***	
Dimensions (LxWxH)	28.6 x 25 x 6.5 in 727.2 x 635.0 x 164.7 mm
Weight	120 lb (54 kg)

* Parameters marked with asterisk related to the BUC option
 ** Selectable by MC interface
 *** Per single thread

Complete VSAT outdoor unit solution in a single box, suited for most demanding commercial needs.



Key Features

- All-in-one, including a feed horn
- Lightweight and compact
- 3W output power
- 25W power consumption
- RoHS compliant



3W Lower Ku-band Transceiver Technical Specifications

MECHANICAL & ELECTRICAL		
Dimensions		217 x 96.8 x 53.5mm
Weight		1.095kg
Flange for transceiver fixation to antenna		40mm diameter, 35mm length
Supply voltage		15 to 24VDC
Power consumption	$P_{out} = 34\text{dBm}$ 10MHz ref. off	18W typ., 25W max. 4W max.
IF connectors	Tx Rx	F-type female F-type female
ENVIRONMENTAL		
Temperature range	Operational Survival	-40°C to +55°C -40°C to +85°C
Humidity		0 – 100%
Altitude		4500m
Environmental protection level		IP67
RF-RX		
Input frequency		10.70 – 11.70GHz
IF frequency		950 – 1950MHz
Noise figure		<1.3dB
Conversion gain		57dB typ.
Gain variation	Over 36MHz Over whole bandwidth	0.75dB 4dB
LO frequency		9.75GHz
LO phase noise	1kHz 10kHz 100kHz 1MHz	-70dBc/Hz -80dBc/Hz -90dBc/Hz -100dBc/Hz
LO stability		±500kHz
RF TX		
Tx output power @ P_{1dB}		34.5dBm typ
Tx output frequency		12.75 – 13.25GHz
3d order Intermodulation products @ $P_{out} = 31\text{dBm}$		-22dBc min.
Tx IF frequency		950 – 1450MHz
LO frequency		11.8GHz
LO reference frequency		10MHz
Conversion gain		58dB typ.
Gain variation	Over 60MHz Over full band	1.5dB 4dB peak-to-peak
Spurious emission	In band Out of band	-60dBc -50dBc
External reference requires	Input frequency Input power level Phase noise	10MHz sinus -5 to +5dBm -125dBc/Hz @100Hz offset -135dBc/Hz @1000Hz offset -140dBc/Hz @10kHz offset
Mute		Shut off Tx in case of LO unlocked or no 10MHz external reference signal
RF-FEED/OMT		
Polarization		Linear orthogonal
Cross pol isolation		>30dB
Tx/Rx isolation in Rx band		>80dB
Tx/Rx isolation in Tx band		>30dB
Feed adaptation for antenna F/D		0.65



These rugged antenna systems are rugged commercial-grade antennas, suitable for the most demanding applications to be used with SpaceBridge 3W Ku-band or Ka-band Transceivers

Key Features

- Fine azimuth and elevation adjustment features.
- Meets or exceeds regulatory agency requirements.
- Integrated with SB 3W and 4W Ku and Ka-band transceivers via mounting bracket.
- Can be provided with the following options:
 - Tri-mast to fit any surface
 - 2x30m RG-6 color coded coaxial cables
 - 4' x 4' Non-Pen Mount (98cm antennas)



Model #	SBAF120U	SBAF098A
Frequency range	Ku-band	Ka-band
Class	Class I	Class I

MECHANICAL		
Effective aperture	120cm	98cm
Platform geometry/optics	One-piece offset feed prime focus	One-piece offset feed prime focus
Pointing	Fixed	Fixed
Azimuth range	360° continuous (±5° fine adjustment)	360° continuous (±5° fine adjustment)
Elevation range	5° - 90° continuous	5° - 90° continuous
Material	SMC	Steel
Mast pipe interface diameter	73.2mm or 76mm	60.3mm
Effective aperture	120cm	98cm
Platform geometry/optics	One-piece offset feed prime focus	One-piece offset feed prime focus

ENVIRONMENTAL		
Wind operational	56km/h	56km/h
Wind survival	201km/h	201km/h
Temperature range	-50°C to +80°C	-50°C to +60°C
Humidity	0 – 100% (non-condensing)	0 – 100% (non-condensing)
Atmosphere	720 hours STM B-117 (salt fog test)	720 hours STM B-117 (salt fog test)
Solar radiation	360BTU/h/ft ²	360BTU/h/ft ²

RF		
Frequency range (GHz)	Tx	13.75 – 14.50
	Rx	10.70 – 12.75
Gain	Tx	43.3dB @ 14.3GHz
	Rx	41.8dB @ 12.00GHz
Gain variation		±0.3 dB
Polarization		Linear orthogonal
Sidelobe compliance		29 - 25 Log θ dB
		-3.5 dB 32-25 Log θ dB
		-10 dB (averaged)
		100 $\lambda/D < \theta < 20^\circ$
VSWR	Tx	1.3:1
	Rx	1.3:1
Isolation	Tx	90dB
	Rx	40dB
Cross pol 1dB beamwidth	Tx	30dB
	Rx	30dB
Noise temperature (@ elevation angle)		48K @ 10° 35K @ 20° 30K @ 30°
		44K @ 30°



This is a rugged commercial grade antenna system, suitable for the most demanding applications.

Key Features

- All materials comply with EU directive No. 2002/95/EC (RoHS).
- Reflector constructed from glass fiber reinforced polyester (SMC) for strength and accuracy.
- Galvanized 19mm O.D. feed support legs for lightweight outdoor units (ODUs)*.
- Meets or exceeds regulatory agency requirements.
- Precision Az/EI mount with fine adjustments, constructed from heavy-gauge steel for rigid support.
- All hardware is plated to withstand 72 hour salt spray according to ASTM B-117 standards
- SMC reflector



MECHANICAL	
Effective aperture	120cm
Platform geometry/optics	One-piece offset feed prime focus
Pointing	Fixed
Azimuth range	360° continuous ($\pm 5^\circ$ fine adjustment)
Elevation range	5° - 90° continuous
Material	SMC
Mast pipe interface diameter	73 - 76mm
Approximate weight excluding mast	16kg

ENVIRONMENTAL	
Wind operational	72km/h
Wind survival	200km/h
Temperature range	-50°C to +80°C
Humidity	0 – 100% (condensing)
Atmosphere	72 hours STM B-117 (salt fog test)
Solar radiation	360BTU/h/ft ²

RF		
Frequency range	Tx	12.75 – 13.25GHz
	Rx	10.70 – 11.70GHz
Gain	Tx	42.2dB @ 13.0GHz
	Rx	41.1dB @ 11.2GHz
Gain variation		± 0.3 dB
Polarization		Linear orthogonal (co-pol optional)
Sidelobe compliance	100 $\lambda/D < \theta < 20^\circ$	29 - 25 Log θ dB
	20° < θ < 26.3°	-3.5 dB
	26.3° < θ < 48°	32-25 Log θ dB
	48° < θ < 180°	-10 dB (typical)
VSWR	Tx	1.3:1
	Rx	1.5:1
Isolation	Tx	90dB
	Rx	40dB
Cross-pol 1dB beamwidth		>30dB
Noise temperature	10° EI	48°K
	20° EI	35°K
	30° EI	29°K
Feed Interface	Tx	WR75
	Rx	WR75



Elevate your connectivity with our advanced manpack antennas, designed to excel in the most challenging and mission-critical X, App30B-15 Ku, Kx, and Ka-bands applications

Key Features

- Carbon fiber reflector and supporting system for lighter weight and higher reliability
- Complies with MIL-STD-188-164A, ITU-R S.580 and INTELSAT requirements
- Designed and tested to drain rain water of 100mm/h, at elevation angles of up to 90°, for use near Equator line
- Easy to assemble and disassemble, in less than 10 minutes each, by one person
- Antenna and RF parts fit into one backpack
- BUC and LNB can be easily connected to the antenna, to avoid repeated on-site connections
- Antenna can be converted to and from App30B-15, Kx and Ka-bands with simple replacement of feed with OMT and BUC/LNB.
- Compatible with SpaceBridge ASAT™ and ESTELLA modems, SSPAs and BUCs
- Integrated with SpaceBridge U7720-ODU modem
- Can be integrated to any ground network connectivity solution



RF CHARACTERISTICS

Model	SBMP090X	SBMP090UL	SBMP090UX	SBMP090A
Band	X	App30B-15 Ku	Kx	Ka
Tx Freq. (GHz)	7.9 – 8.4	12.75 – 13.25	13.75 – 14.5	27.5 – 31.0
Rx Freq. (GHz)	7.25 – 7.75	10.7 – 11.7	10.7 – 12.75	18.3 – 20.2
Polarization	Circular	Linear	Linear	Circular
Tx Gain mid-band	≥ 35.5 dBi	≥ 39.3 dBi	≥ 40.0 dBi	≥ 47.6 dBi
Rx Gain mid-band	≥ 35.1 dBi	≥ 38.5 dBi	≥ 38.9 dBi	≥ 44.3 dBi
XPD (dB)	≥ 30	≥ 35	≥ 35	≥ 25
VSWR	≤ 1.3:1	≤ 1.25:1	≤ 1.25:1	≤ 1.3:1
Isolation, Tx to Rx	≥ 110 dB	≥ 85 dB	≥ 85 dB	≥ 85 dB
Feed Interface	WR112	WR75	WR75	WR42 WR28
Sidelobe	MIL-STD-188-164A	ITU-R S.580	ITU-R S.580	ITU-R S.580

MECHANICAL

Reflector size	0.9m
Reflector type	Ring focus
Material of the reflector	Carbon fiber
Drive mode	Automatic, motorized or manual
Travel range	Az. ±180° Elev. 10 – 90° Pol. ±90°
Antenna Weight*	13.0kg (without packing) 17.0kg (with 1 backpack)
Packing type	2 backpacks or 1 backpack

* Excludes BUC, LNB, accessories

ENVIRONMENTAL

Operational Temp.	-40°C - +60°C
Storage Temp.	-50°C - +70°C
Wind Speed	
Operational	72km/h
Survival	145km/h
Operational Rain	100mm/h
Humidity	100% @20°C
Ingress protection	IP67
Vibration	MIL-STD-810F
Corrosion	MIL-STD-1250

Example of antenna packing



Elevate your connectivity with our advanced manpack antennas, designed to excel in the most challenging and mission-critical X, App30B-15 Ku, Kx, and Ka-bands applications

Key Features

- Carbon fiber reflector and supporting system for lighter weight and higher reliability
- Complies with MIL-STD-188-164A, ITU-R S.580 and INTELSAT requirements
- Designed and tested to drain rainwater of 100mm/h, at elevation angles of up to 90°, for use near Equator line
- Easy to assemble and disassemble, in less than 10 minutes each, by one person
- Antenna and RF parts fit into one backpack
- BUC and LNB can be easily connected to the antenna, to avoid repeated on-site connections
- Antenna can be converted to and from App30B-15, Kx and Ka-bands with simple replacement of feed with OMT and BUC/LNB
- Compatible with SpaceBridge ASAT™ and ESTELLA modems, and BUCs
- Integrated with SpaceBridge U7720-ODU modem
- Can be integrated to any ground network connectivity solution



RF CHARACTERISTICS

Model	SBMP100X	SBMP100UL	SBMP100UX	SBMP100A
Band	X	App30B-15 Ku	Kx	Ka
Tx Freq. (GHz)	7.9 – 8.4	12.75 – 13.25	13.75 – 14.5	27.5 – 31.0
Rx Freq. (GHz)	7.25 – 7.75	10.7 – 11.7	10.7 – 12.75	18.3 – 20.2
Polarization	Circular	Linear	Linear	Circular
Tx Gain mid-band	≥ 36.4 dBi	≥ 40.4 dBi	≥ 41.1 dBi	≥ 47.7 dBi
Rx Gain mid-band	≥ 36.0 dBi	≥ 39.1 dBi	≥ 39.5 dBi	≥ 44.3 dBi
XPD (dB)	≥ 30	≥ 35	≥ 35	≥ 25
VSWR	≤ 1.3:1	≤ 1.25:1	≤ 1.25:1	≤ 1.3:1
Isolation, Tx to Rx	≥ 110 dB	≥ 85 dB	≥ 85 dB	≥ 85 dB
Feed Interface	WR112	WR75	WR75	WR42 WR28
Sidelobe	MIL-STD-188-164A	ITU-R S.580	ITU-R S.580	ITU-R S.580

MECHANICAL

Reflector size	1.0m
Reflector type	Ring focus
Material of the reflector	Carbon fiber
Drive mode	Automatic, motorized or manual
Travel range	Az. ±180° Elev. 10 – 90° Pol. ±90°
Antenna Weight*	13.5kg (without packing) 17.3kg (with 1 backpack)
Packing type	2 backpacks or 1 backpack

* Excludes BUC, LNB, accessories

ENVIRONMENTAL

Operational Temp.	-40°C - +60°C
Storage Temp.	-50°C - +70°C
Wind Speed	
Operational	72km/h
Survival	145km/h
Operational Rain	100mm/h
Humidity	100% @20°C
Ingress protection	IP67
Vibration	MIL-STD-810F
Corrosion	MIL-STD-1250

Example of antenna packing



Elevate your connectivity with our advanced flyaway antennas, designed to excel in the most challenging and mission-critical X, App30B-15 Ku, Kx, and Ka-bands applications

Key Features

- Carbon fiber reflector and supporting system for lighter weight and higher reliability
- Complies with MIL-STD-188-164A, ITU-R S.580 and INTELSAT requirements
- Designed and tested to drain rainwater of 100mm/h, at elevation angles of up to 90°, for use near Equator line
- Easy to assemble and disassemble.
- Antenna and RF parts fit into two airline check-in cases or two carry-on backpacks
- Monitored and controlled via Wi-Fi
- One-button operation: automatically completes positioning, deployment, and satellite acquisition in under three minutes
- Tracking system both by beacon and DVB-S2/S2X carriers
- Automatic latitude and longitude acquisition with integrated GPS and failover to manually entered coordinates; manual pointing available
- Three control modes can be used for emergency and military operation environments: automatic, motorized, and manual
- Compatible with SpaceBridge ASAT™ and ESTELLA modems, and BUCs
- Integrated with SpaceBridge U7720-SA modem board
- Can be integrated to any ground network connectivity solution



RF CHARACTERISTICS

Model	SBFA120X	SBFA120UL	SBFA120UX	SBFA120A
Band	X	App30B-15 Ku	Kx	Ka
Tx Freq. (GHz)	7.9 – 8.4	12.75 – 13.25	13.75 – 14.5	27.5 – 31.0
Rx Freq. (GHz)	7.25 – 7.75	10.7 – 11.7	10.7 – 12.75	18.3 – 20.2
Polarization	Circular	Linear	Linear	Circular
Tx Gain mid-band	≥ 38.0 dBi	≥ 42.0 dBi	≥ 42.7 dBi	≥ 49.3 dBi
Rx Gain mid-band	≥ 37.3 dBi	≥ 40.7 dBi	≥ 41.3 dBi	≥ 45.8 dBi
XPD (dB)	≥ 30	≥ 35	≥ 35	≥ 25
VSWR	≤ 1.25:1	≤ 1.25:1	≤ 1.25:1	≤ 1.3:1
Isolation, Tx to Rx	≥ 110 dB	≥ 85 dB	≥ 85 dB	≥ 85 dB
Feed Interface	WR112	WR75	WR75	WR42 WR28
Sidelobe	MIL-STD-188-164A	ITU-R S.580	ITU-R S.580	ITU-R S.580

MECHANICAL

Reflector size	1.2m
Reflector type	Ring focus
Material of the reflector	Carbon fiber
Drive mode	Automatic, motorized or manual
Travel range	
Azimuth	±95°
Elevation	10 – 90°
Polarization	±90° (linear)
Speed Rate	
Azimuth	0.1 – 3°/sec
Elevation	0.1 – 3°/sec
Polarization	0.1 – 3°/sec (linear)
Antenna Net Weight	23kg (exclude BUC, packing, accessories)
Acquisition time	≤ 3min
Tracking Accuracy	Better than 1/5 of 3dB beamwidth
Tracking Mode	Beacon or DVB
Positioning Mode	GPS

POWER

Power Supply	90 -260VAC, 47 – 63Hz
Power Consumption	≤ 100W (BUC not included, during acquisition mode)

ENVIRONMENTAL

Operational Temperature	-40°C - +60°C
Storage Temperature	-50°C - +70°C
Operational Wind Speed	72km/h (with anchors and ballasts)
Survival Wind Speed	100km/h (with anchors and ballasts, pointed to zenith)
Operational Rain	100mm/h
Humidity	95% @20°C
Ingress protection	IP65
Vibration	MIL-STD-810F
Corrosion	MIL-STD-1250

Examples of antenna packing

Option	Packaging	Packing size (mm)	Net weight (kg)	Gross weight (kg)
2 Backpacks	Backpack 1	670x470x300	12	16.8
	Backpack 2	670x480x410	11	15.0
2 Hard Cases	Hard case 1	720x450x850	11	32.25
	Hard case 2	630x450x810	12	30.5



Backpack 1



Backpack 2



Hard Cases 1 and 2



Elevate your connectivity with our advanced flyaway antennas, designed to excel in the most challenging and mission-critical X, App30B-15 Ku, Kx, and Ka-bands applications

Key Features

- Carbon fiber reflector and supporting system for lighter weight and higher reliability
- Complies with MIL-STD-188-164A, ITU-R S.580 and INTELSAT requirements
- Designed and tested to drain rain water of 100mm/h, at elevation angles of up to 90°, for use near Equator line
- Easy to assemble and disassemble, in less than 10 minutes each, by one person
- Antenna and RF parts fit into two airline check-in cases or two carry-on backpacks
- BUC and LNB can be easily connected to the antenna, and space can be reserved in cases or backpacks to avoid repeated on-site connections
- Compatible with SpaceBridge ASAT™ and ESTELLA modems, SSPAs and BUCs
- Can be integrated to any ground network connectivity solution



RF CHARACTERISTICS

Model	SBFM120X	SBFM120UL	SBFM120UX	SBFM120A	
Band	X	App30B-15 Ku	Kx	Ka	
Tx Freq. (GHz)	7.9 – 8.4	12.75 – 13.25	13.75 – 14.5	27.5 – 31.0	
Rx Freq. (GHz)	7.25 – 7.75	10.7 – 11.7	10.7 – 12.75	18.3 – 20.2	
Polarization	Circular	Linear	Linear	Circular	
Tx Gain mid-band	≥ 38.2 dBi	≥ 41.4 dBi	≥ 42.1 dBi	≥ 49 dBi	
Rx Gain mid-band	≥ 37.5 dBi	≥ 40.4 dBi	≥ 41 dBi	≥ 45.8 dBi	
XPD (dB)	≥ 30	≥ 35	≥ 35	≥ 25	
VSWR	≤ 1.3:1	≤ 1.25:1	≤ 1.25:1	≤ 1.3:1	
Isolation, Tx to Rx	≥ 110 dB	≥ 85 dB	≥ 85 dB	≥ 85 dB	
Feed Interface	WR112	WR75	WR75	Rx WR42	Tx WR28
Sidelobe	MIL-STD-188-164A	ITU-R S.580	ITU-R S.580	ITU-R S.580	

MECHANICAL

Reflector size	1.2m
Reflector type	Ring focus
Material of the reflector	Carbon fiber
Drive mode	Automatic, motorized or manual
Travel range	Az. ±180° Elev. 10 – 90° Pol. ±90° (Ku-band only)
Antenna Net Weight	16kg (exclude BUC, LNB, packing, accessories)
Packing type	2 hard cases or 2 backpacks

ENVIRONMENTAL

Operational Temp.	-40°C - +60°C
Storage Temp.	-50°C - +70°C
Wind Speed	
Operational	72km/h*
Survival	145km/h**
Operational Rain	100mm/h
Humidity	100% @20°C
Ingress protection	IP67
Vibration	MIL-STD-810F
Corrosion	MIL-STD-1250

Example of antenna packing

Packaging	Packing size (mm)	Net weight	Gross weight
Backpack 1	710x410x250	7.4 kg	12 kg
Backpack 2	630x510x310	8.6 kg	12.4 kg



Backpack 1



Backpack 2

Elevate your connectivity with our advanced drive-away antenna, designed to excel in the most challenging and mission-critical applications on X, Ku and Ka-bands

Key Features

- Carbon fiber reflector and supporting system for lighter weight and higher reliability
- Complies with MIL-STD-188-164A, ITU-R S.580 and INTELSAT requirements
- Hi gain, low sidelobe, excellent pattern characteristics
- Auto-deploy and auto-stow smart switch to complete auto positioning, deploy and satellite acquisition
- Satellite deployment and acquisition within three minutes
- Motorized polarization adjustment
- Three control modes: auto, motorized, and manual
- Tracking accuracy better than 1/8 of received 3dB beamwidth
- Compatible with SpaceBridge ASAT™ modems
- Can be integrated to any ground network connectivity solution



RF CHARACTERISTICS						
Model	SBDA120X		SBDA120U		SBDA120A	
Band	X		Ku		Ka	
Tx/Rx	Rx	Tx	Rx	Tx	Rx	Tx
Frequency (GHz)	7.25 – 7.75	7.9 – 8.4	10.70 – 12.75	13.75 – 14.5	17.8 – 21.2	29.0 – 30.0
Polarization	Circular		Linear		Circular	
Gain, mid-band (dBi)	≥ 37.6	≥ 38.2	≥ 41.8	≥ 43.1	≥ 46.0	≥ 49.2
XPD (dB)	≥ 21.3		≥ 35		≥ 25	
VSWR	≤ 1.3		≤ 1.25		≤ 1.3	
Port-to-Port Isolation, Tx to Rx (dB)	≥ 110		≥ 85		≥ 85	
Feed Interface	WR112		WR75		WR42	WR28
Sidelobe	MIL-STD-188-164A		ITU-R S.580		ITU-R S.580	

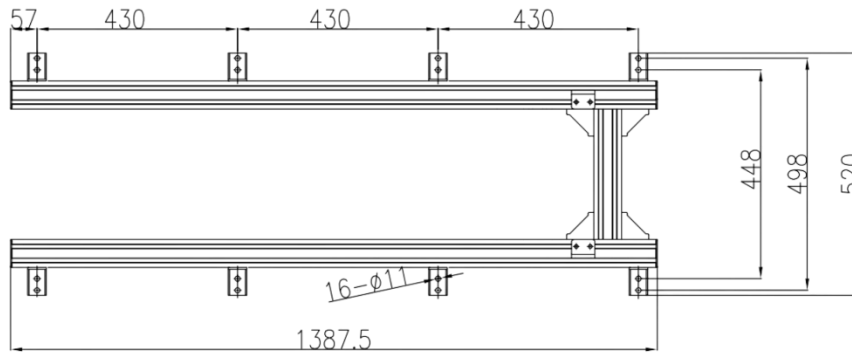
MECHANICAL	
Reflector size	1.2m
Reflector type	Offset
Material of the reflector	Single-Piece Carbon Fiber
Drive mode	Manual or Motorized
Travel range	
Azimuth	±220°
Elevation	10 – 90°
Polarization	180°
Speed Rate	
Azimuth	0.1 – 6°/sec
Elevation	0.1 – 6°/sec
Antenna Net Weight	85kg
Acquisition time	≤ 3min
Tracking Accuracy	Better than 1/8 of 3dB beamwidth
Tracking Mode	Beacon or DVB
Positioning Mode	GPS

POWER	
Power Supply	100 – 240VAC, 50/60Hz
Power Consumption	≤ 350W, BUC not included

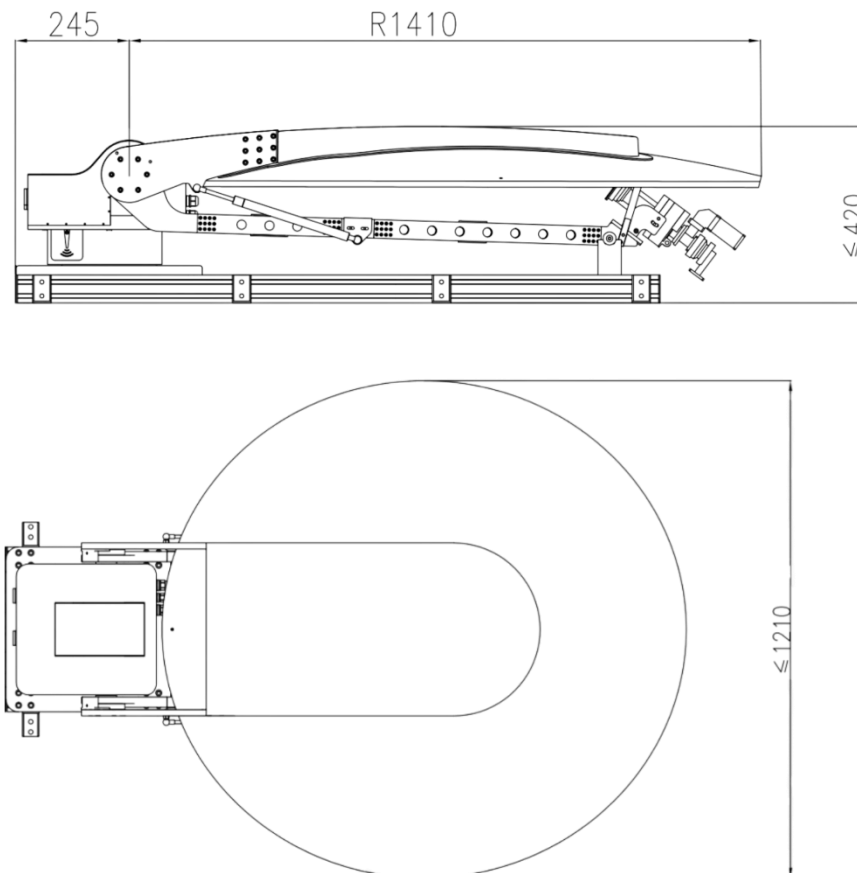
ENVIRONMENTAL	
Operational Temperature	-40°C - +60°C
Storage Temperature	-55°C - +75°C
Operational Wind Speed	72km/h, gusting to 97km/h
Survival Wind Speed	Stowed, 216km/h
Operational Rain	100mm/h
Humidity	95% @20°C
Ingress protection	IP65
Vibration	MIL-STD-810F
Corrosion	MIL-STD-1250



Antenna vehicle mount interface dimensions (mm)



Antenna vehicle mount interface dimensions (mm)



**This drive-away on-the-move antenna is suitable for the most demanding
and mission critical on-the-move applications**

Key Features

- Low-height, high-performance antenna
- Fiber optic gyro inertial navigation tracking
- High precision and very short reacquisition time
- Automatic initial satellite acquisition can be concluded whether in motion or stationary
- After system startup, all processes will be automatically carried out without manual operation
- Satellite initial acquisition within 2 minutes
- Reacquisition time after 20-minute blockage is less than 2 seconds
- Compatible with SpaceBridge ASAT™ and Estella modems, HPAs, and high-power BUCs
- Can be integrated to any ground network connectivity solution



SBDM080 - 0.8m App30B-15 Ku-band and Kx-Band Drive-Away On-the-Move Antenna

Technical Specifications

RF CHARACTERISTICS

Model	SBDM080	SBDM080X
Band	App30B-15 Ku	Kx
Tx Freq. (GHz)	12.75 – 13.25	13.75 – 14.5
Rx Freq. (GHz)	10.7 – 11.7	10.7 – 12.75
Polarization	Linear	Linear
Tx Gain mid-band	≥ 38.2 dBi	≥ 38.8 dBi
Rx Gain mid-band	≥ 37.2 dBi	≥ 37.6 dBi
XPD (dB)	≥ 35	≥ 35
VSWR	≤ 1.25:1	≤ 1.25:1
Isolation, Tx to Rx	≥ 85 dB	≥ 85 dB
Feed Interface	WR75	WR75
Feed Type	2-port linear cross pol	2-port linear cross pol
Sidelobe	ITU-R S.580	ITU-R S.580

MECHANICAL

Reflector size	0.8 m
Reflector type	Ring focus
Material of the reflector	Carbon fiber
Travel range	
Azimuth	360° continuous
Elevation	15 – 85°
Polarization	±95° (linear)
Speed Rate	
Azimuth	80°/sec
Elevation	60°/sec
Acceleration Rate	
Azimuth	400°/sec
Elevation	400°/sec
Antenna Net Weight	≤ 75 kg
Positioning	Gyro Inertial Navigation and GPS
Initial acquisition time	< 2 min
Reacquisition time after a 20-min blockage	2 sec
Pointing accuracy	≤ 0.5° Tx, ≤ 0.3° Rx

POWER

Power Supply	220VAC, 47 – 63Hz
Power Consumption	≤ 300W (BUC not included)
Max Tx Power	100W

ENVIRONMENTAL

Operational Temperature	-40°C - +60°C
Storage Temperature	-50°C - +70°C
Operational Wind Speed	150 km/h
Operational Rain	100 mm/h
Operational Altitude	5585m
Humidity	95% @20°C
Ingress protection	IP65
Vibration	MIL-STD-810F
Corrosion	MIL-STD-1250