

This compact yet powerful 400W indoor 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

Engineered for industry-leading performance and high reliability, this indoor 400 W C-band solid-state power amplifier delivers exceptional linearity, efficiency, and power stability in a compact 5RU rackmount package. Its advanced design supports the most demanding high-throughput satellite (HTS/UHTS) networks, enabling flawless operation with higher-order modulations such as 256-APSK, multicarrier transmission, and multi-transponder operation for DTH distribution, broadband VSAT hubs, and contribution links. A comprehensive suite of monitoring and control capabilities accessible via Ethernet, RS-232, RS-485, ensures seamless integration into modern teleport, gateway, and network-infrastructure environments.



Designed expressly for controlled indoor environments, this amplifier integrates an efficient forced-air cooling system optimized for rackmount operation, eliminating the need for external environmental sealing or IP-rated enclosures. Its thermally optimized architecture minimizes heat load on equipment rooms and reduces dependency on heavy HVAC systems, contributing to lower long-term operational costs (OPEX). The unit installs easily within standard 19-inch racks and maintains full performance without the infrastructure required for outdoor mounting, enabling streamlined deployment in teleports, secure equipment rooms, broadcast facilities, and high-availability gateway installations.

* SSPA: SBIS0400K; SSPB (BUC): SBIB0400K

MODELS		
	SBIS0400KL/SBIB0400KL	SBIS0400KL/SBIB0400KX
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	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	± 1.5 dB max between 0°C to 50°C
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	CPRI37 grooved, threaded 10-32 UNF
Output VSWR	1.3:1 max
RF Power Monitor	50 Ohms N-type (F)
AC Power In	IEC-320-C13
M&C Interfaces: Ethernet, Serial RS-232 & RS-485, Form-C	RJ-45 DB-25
Redundancy	DB-15

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	
Operating	0°C to +55°C
Storage	-20°C to +60°C
Relative Humidity	5% to 95%, no condensing
Altitude	10,000 ft (3,000 m) AMSL, adiabatically derated 5°C /1000m

MECHANICAL	
Dimensions (LxWxH)	20.00" x 19.00" x 8.66" (508mm x 483mm x 220 mm)
Weight	80 lb (36 kg)

*Parameters marked with asterisk related to the BUC option

**Switchable Local Oscillator