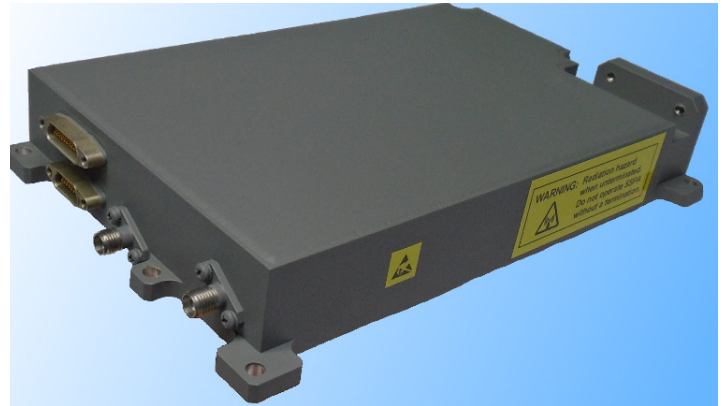


This compact solid-state power block converter combines an L-band BUC and GaN based SSPA to provide 30 watts of linear power over the 13.75-14.5 GHz extended Ku-band satellite uplink band.

The SSPB is housed in a rugged, weather-sealed enclosure, designed for use in transportable SATCOM systems and airborne applications. An RS-422 link provides remote control and status monitoring functions.



FEATURES:

- Suitable for operation outside the pressure vessel
- L-band input block upconverter
- 30 W linear output power with single carrier operation
- 55 dB gain
- User accessible on-board M & C
- Temperature-compensated gain from -55 to +78°C
- Hermetically sealed package
- Serial interface (RS-422, full duplex, 5-wire)
- Serial or direct wired Mute function
- Forward and reverse output power monitors
- Output isolator
- Operates from an externally supplied 10 MHz reference
- 10 MHz reference output port for LNB
- Lightweight

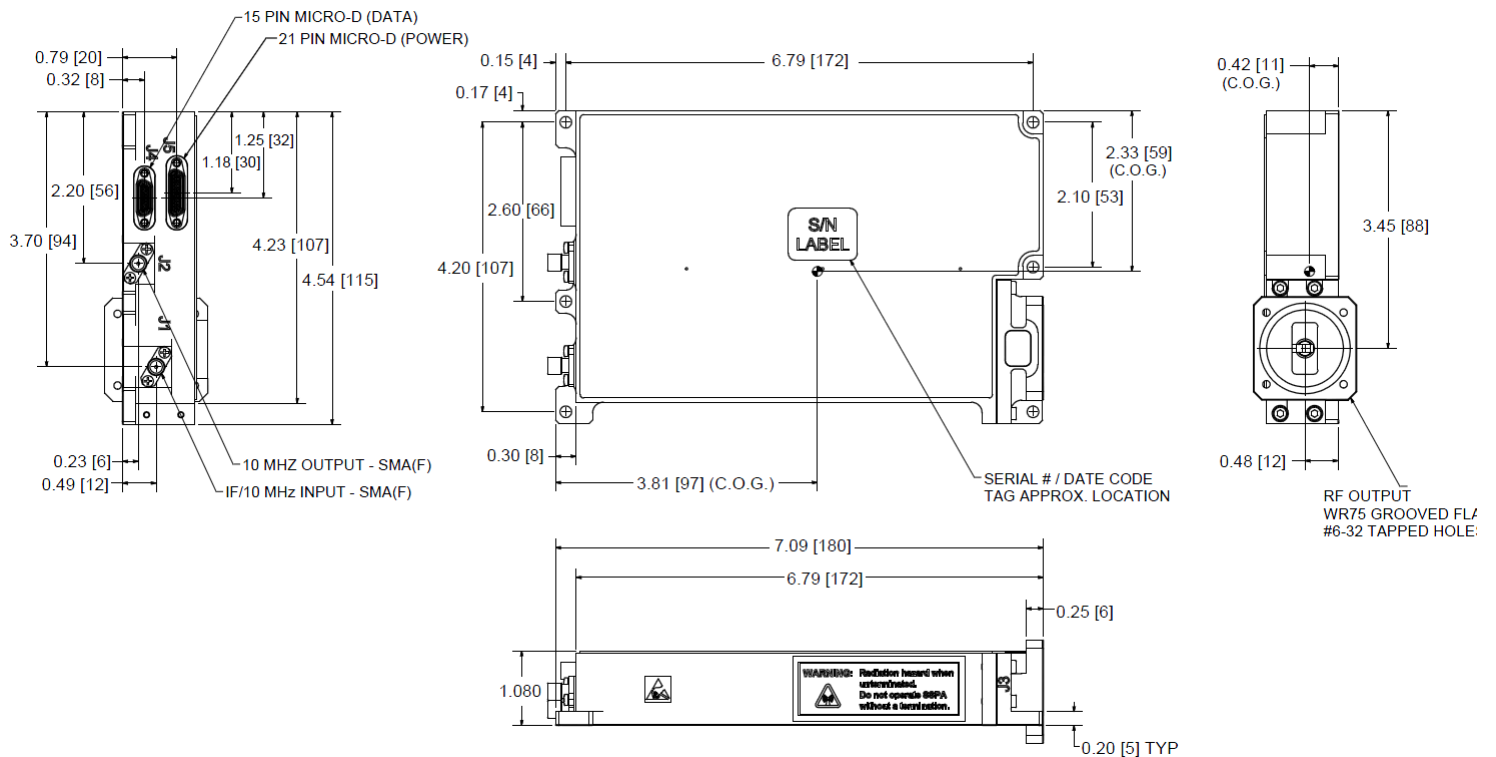
Specifications¹

Parameter	Notes	Specification
Frequency Range	Input Output	950 MHz min., 1700 MHz max. 13.75 GHz min., 14.50 GHz max.
Local Oscillator Frequency		12.80 GHz typical
LO Phase Noise ²	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz >10 MHz	-40 dBc/Hz typical, -32 dBc/Hz max. -70 dBc/Hz typical, -62 dBc/Hz max. -78 dBc/Hz typical, -72 dBc/Hz max. -83 dBc/Hz typical, -82 dBc/Hz max. -93 dBc/Hz typical, -92 dBc/Hz max. -110 dBc/Hz typical, -102 dBc/Hz max. -120 dBc/Hz typical, -112 dBc/Hz max.
Reference Frequency ²	External	10 MHz typical
Reference Output Level		-2 dBm min., +2 dBm max.
Gain	Minimum	53 dB min., 60 dB max.
Gain Flatness		2.5 dB pp max., over Full-band 2.0 dB pp max., per 120 MHz 0.6 dB pp max., per 10 MHz
Gain Stability vs. Temperature	-55°C to +78°C, baseplate	3 dB pp max.
Gain Stability vs. Time	24 hours, constant temperature	0.6 dB pp max.
Power Output	Saturated Plinear	+47 dBm typical (50 W typical) +44.8 dBm min. (30 W min.)
Muting Level	Referenced to unmuted condition	-70 dB max.
Muting Time	Fast Mute Input	50 ms max.
Spectral Regrowth	QPSK single carrier, 1xSR, 1.024-8.192Mps, Pout = 30 watts	-26 dBc typical -25 dBc max.
Harmonics (With optional filter)	27.5-29.0 and 41.25-43.5 GHz Pout = 30 watts	-60 dBc max.
Spurious	Pout = 30 watts	-60 dBc max.
LO Leakage		-50 dBm max. at RF output
Group Delay	Per 36 MHz	0.7 ns max.
Phase Linearity	Per 2 MHz Per 36 MHz Per 72 MHz Per 90 MHz Per 120 MHz	±0.1 radians max. ±0.3 radians max. ±0.4 radians max. ±0.5 radians max. ±0.6 radians max.
AM/PM Conversion	Pout = 30 watts	2.0 °/dB max.
Noise Density	13.75-14.50 GHz 10.95-12.75 GHz	-85 dBm/Hz max. -120 dBm/Hz max.
VSWR	Input (50 ohms) Output	1.35:1 typical, 1.50:1 max. 1.30:1 typical, 1.50:1 max.
Connectors	IF In/Ext. Ref. In Ref. Out RF Output M&C, RS-422, Fast Mute Power	SMA Female SMA Female WR75 with O-ring 15-pin Micro D with sockets 21-pin Micro D with sockets

Specifications¹, continued

Parameter	Notes	Specification										
Power Requirements	Voltage Power ³	28 VDC min., 43 VDC typical, 48 VDC max. 260 W max.										
Operating Temperature Range	Baseplate	-55°C to +78°C										
Thermal Shutdown	Reported Module Temp.	+90°C typical/<+85°C Auto Restart										
Weight		1.6 lb (0.73 kg)										
Dimensions	SSPB footprint	7.09" L x 4.54" W x 1.5" H 180 mm L x 115 mm W x 38 mm H										
<p>1) This document is product line overview only. As such, it does not accurately reflect all specifications of every representative model number.</p> <p>2) External Reference Phase Noise Requirement: (External Reference Input Level: -8 to +2 dBm, sinewave)</p> <table border="1"> <thead> <tr> <th>Offset Frequency</th> <th>Phase Noise</th> </tr> </thead> <tbody> <tr> <td>10 Hz</td> <td>-105 dBc/Hz</td> </tr> <tr> <td>100 Hz</td> <td>-135 dBc/Hz</td> </tr> <tr> <td>1 KHz</td> <td>-145 dBc/Hz</td> </tr> <tr> <td>>10 KHz</td> <td>-153dBc/Hz</td> </tr> </tbody> </table> <p>3) At Plinear output</p>			Offset Frequency	Phase Noise	10 Hz	-105 dBc/Hz	100 Hz	-135 dBc/Hz	1 KHz	-145 dBc/Hz	>10 KHz	-153dBc/Hz
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Outline Drawing



Outline 32856-1

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