

New Generation of GaN based SSPAs/BUCs for lunar communication



USING CUTTING-EDGE GAN TECHNOLOGY, THE NEW X SSPA FAMILY OFFERS OUTSTANDING PERFORMANCE IN INDOOR OPERATIONS

Innovative technology

State-of-the-art technology offering outstanding performance in a compact packaging.

Modularity

A combination in phase of SSPAs 800 W delivers output powers up to a few kW on a built-in redundancy and hot swappable amplification modules.

Efficiency & Reliability

Super linearity for maximum useable output power to provide customised linearisation independent of the modulation method used.

Robust performance guaranteed through individual unit testing over temperature at factory. Built-in output isolator for protection against reflected power.

Advanced packaging and cooling techniques enable the equipment to be operated in the toughest environments.

Monitoring & Control

Full M&C capability through RS-485/USB (ASCII commands) and an Ethernet port (Telnet, HTTP with embedded user-friendly web page or SNMP).

Discrete lines for mute and turn on/off functions and a summary alarm (Form C relay and discrete) for speedy operation.

Key Features

- * Highly efficient
- * Super high linear power
- * Multicarrier operation
- * Superior lifetime based on GaN-tech
- * High MTBF
- * Redundant configurations (1:1, 2:1, N:1)
- * Simple operation & maintenance
- * Liquid cooled
- * Rack mounting



OTHER FEATURES

* Automatic Control Mode: AGC, ALC

* Output RF calibrated sample port

* Ethernet

* Harmonic filter

OPTIONS

* Redundant systems 1:1, 2:1, N:1

* SNMP

* Receive reject filter (external)

* Breaker panel

RF performance

Operating frequency range	7.145-7.235 GHz
Output power ($P_{SAT (typical)}$)	59 dBm
Linear output power (P_{LINEAR})	56.8 dBm
Gain	>70 dB
Gain flatness	2 dB p-p max over full band; 0.5 dB p-p max over any 40 MHz
Gain variation over temperature	± 1.5 dB over full operating range
Attenuation adjustment range	20 dB 0.25 dB step
Input VSWR	≤1.5:1
Output VSWR	≤1.3:1
Spectral regrowth	-30 dBc @ P_{LINEAR} *
IM3	-25 dBc @ P_{LINEAR} *
Spurious	-60 dBc max @ P_{LINEAR} *

* According to MIL-STD-188-164C: For single carrier with modulation DVB-S, 4Mbaud, Roll-off: 0.25, ModCod QPSK-3/4, Occupied Bandwidth 5 MHz, Measured @ 1.0x symbol rate. For two equal amplitude CW carriers (5MHz apart), when any individual intermodulation product power is -25 dB relative to the combined power of the two CW carriers.

Power Supply

Power supply module	1RU 19" subrack: AC/DC converters (qty 2) hot-swappable working in redundancy
Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ P_{SAT}	<2800 W

Interfaces & Physical

Dimensions (W x H x D)	483 x 177 x 600 mm - 4RU 19" subrack
Weight	30 Kg
Interfaces	RF input: SMA (f) RF output: CPR-137-G grooved RF sample: SMA (f) AC line: IEC320 M&C: DB15 (f) / DB9 (f) for inhibit switch signal / Ethernet port Water cooling interface: quick connect coupling connectors
Coolant (liquid)	Fluid: water glycol mixture Inlet temperature: 15 °C to 30 °C Inlet pressure: <5 bar Flow rate: 7 l/min

Monitor & Control

Remote control	RS-485 / USB / Ethernet
Monitor parameters	Forward & Reverse output power / Input power / Temperature / Summary alarms
Internal self protection	Temperature / Reflected power / High output power

Environmental

Operating temperature	+10 °C to +50 °C
Storage temperature	-40 °C to +85 °C