

# New generation of GaN based SSPAs/BUCs for government & defence satcom



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. **High reliability** solutions for harsh environmental and operational conditions.

Options to increase the number of power stages and achieve **higher output powers**.

## 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
- \* Air or liquid cooled



**OTHER FEATURES**

- \* Automatic Control Mode: AGC, ALC
- \* Monitoring: input, forward & reverse output power
- \* Ethernet

**OPTIONS**

- \* Redundant systems 1:1, 2:1, N:1
- \* SNMP
- \* Indoor controller
- \* Receive reject filter (external)
- \* Harmonic filter (external)
- \* Air exhaust MEC interface (air cooling)
- \* Breaker panel

**RF performance**

Operating frequency range	7.9 - 8.4 GHz
Output power ( $P_{SAT}$ (typical))	55 dBm
Output power ( $P_{LINEAR}$ (typical))	52 dBm
3 <sup>rd</sup> order IMD (2 tones 5 MHz apart)	-25 dBc @ $P_{LINEAR}$
Gain @ $P_{SAT}$	>60 dB
Gain flatness	±1.0 dB p-p max
Gain stability over 24 hours	±0.25 dB @ constant temperature and drive level
Gain variation over temperature	±1.5 dB over the whole range
Attenuation adjustment range	20 dB whit in 0.1 dB steps
Input VSWR	<1.3:1
Output VSWR	<1.3:1
Mute	>45 dB
Noise power density	-75 dBm/Hz between 7.9 - 8.4 GHz -140 dBm/Hz between 7.25 - 7.75 GHz (with external RX rejected filter)
Spurious @ $P_{LINEAR}$	-65 dBc
Harmonics @ $P_{LINEAR}$	-60 dBc
AM/PM conversion	<2 °/dB up to $P_{LINEAR}$

*\* As for MIL-STD-188-164B: the max. combined transmit power of 2 equal amplitude CW carriers when any individual intermodulation product power is -25 dB relative to the combined power of the 2 CW carriers*

**Power Supply**

Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ $P_{SAT}$	800 W

**Interfaces & Physical**

Dimensions (W x H x D)	483 x 266 x 560 mm - RF unit 6RU panel height (air cooling) 343 x 120 x 508 mm - 343 x 120 x 684 mm with pipes (water cooling)
Weight	<23 kg
Interfaces	RF input: N (f) RF output: WR112 (CPR-112) RF forward output sample: N (f) M&C: RJ45 (f) & DB15 (f) AC Input: 3-pin C14 (m), 90-260 VAC, 6A, 50/60 Hz Water cooling interface: quick connect coupling connectors System status: tricolour status LED
Coolant (liquid)	Fluid: inhibited glycol / distilled water mixture Inlet temperature: 20 °C to 30 °C Inlet pressure: < 5 bar

**Monitor & Control**

Remote control	RS-232 / RS-485 / Ethernet
Monitor parameters	Input power / Output forward & reverse power / Temperature / Summary alarms
Internal self protection	Temperature (>85 °C) / Reflected power / High input or output power

**Environmental**

Operating temperature	0 °C to +50 °C
Storage temperature	-40 °C to +85 °C