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GaN S SSPA
5 W / 10W / 20W
Spaceborne

New generation of GaN based SSPAs for space missions

USING CUTTING-EDGE **GAN TECHNOLOGY**, THE NEW S SSPA OFFERS OUTSTANDING PERFORMANCE WITH SPACE QUALIFICATION

Efficiency & Reliability

Based on **GaN technology** the equipment is capable to deliver **5 W, 10 W or 20 W** with high DC to RF conversion efficiency.

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

Robust performance guaranteed through individual fully space qualification.

High functionality & compact packaging

Supplied with a dedicated DC-DC converter with integrated EMI filter and **highly efficient** and **low spurious operatio**n. The system includes galvanic isolation and several protections against under-voltage, RF overdrive and output load mismatch (built-in isolator).

Availability of fully automatic operating modes as closed loop Fixed Gain Mode operation (FGM) and Automatic Level Control (ALC).

Monitoring & Control

Commanded by high level pulsed signals in which several analog telemetry signals are implemented in a **compact and low weight design** for this band.

SSPAs Heritage

Commissioned as a payload equipment in several **commercial** and **military** programs.

Key Features

* Fully space qualified
* Highly efficient
* Improved linearity
* High MTTF
* Compact design
* Flexible output power & fixed gain mode
* Overdrive protection
* Built-in DC-DC converter & regulator
* Analog telemetry signals
* Radiation tolerance
* EMC performance

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Technical specifications

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COMPETITIVE ADVANTAGES

* Cost effective solution
* Space qualified HiRel-tech with flight heritage
* Compatible with all types of orbits: LEO, MEO, GEO & Near Earth

OPTIONS

* Several interface options
* ALC mode
* Flexible output power by command
* Compatible with most the main satellite platforms: available in 22-50 V and 70-100 V versions

RF performance

Operating frequency range	2.2 GHz - 2.3 GHz / 2.3 GHz - 2.5 GHz / 2.2 GHz - 2.7 GHz
Output power ($P_{SAT\ (typical)}$)	
5 W / 10 W / 20 W	40 dBm / 43 dBm / 46 dBm
Linear output power (P_{LINEAR})	
5 W / 10 W / 20 W	37 dBm / 40 dBm / 43 dBm
Gain flatness	1 dB p-p max over full band; 0.1 dB p-p max over any 25 kHz
Gain variation over temperature	±0.35 dB over full operating range
Input VSWR	≤1.22:1
Output VSWR	≤1.25:1
NPR	>15 dB @ P_{LINEAR}
Spurious	-65 dBc max @ P_{LINEAR}
Harmonic generation	-30 dBc max

Power Supply

Input voltage	28 VDC compatible with other buses @ 10W P_{LINEAR}
Power consumption @ P_{SAT}	40 W @ 10W P_{LINEAR}

Interfaces & Physical

Dimensions (L x W x H)	175 x 110 x 113 mm
Weight	2.1 kg
Interfaces	RF input: SMA (f)
	RF output: TNC (f)
	DC Bus & TM/TC: 26-pin sub-D

Monitor & Control

Remote control	ON/OFF command with high level pulse signal
Monitor parameters	Analog 5V telemetry (input current & RF output power)
Other monitoring	Independent temperature sensing

Environmental

Flight temperature	-20 ºC to +60 ºC (cold start at -30 ºC)
1st natural frequency	>500 Hz
Vibration	9.5 gRMS (X,Y) / 18 gRMS (Z)
Shock response spectra	Up to 10000 Hz and 1300 g

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Information contained in this document is subject to change without notice.

Unless otherwise specifications, tests have been done at 23 ºC.

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