CELESTIA | TTi

HIGH POWER GaN Ku SSPA
1.1kW/2kW/3.5kW
Outdoor/Indoor

NEW GENERATION OF GAN BASED SSPAS/BUCS FOR BROADCAST SATCOM

Using cutting-edge **GaN technology,** the new Ku SSPA family offers outstanding performance in outdoor/indoor operations

MULTICARRIER OPERATION

No memory effects and limited back off guaranteeing **unlimited carriers**.

MODULARITY

A combination in phase of SSPAs 600 W delivers **output powers up to a few kWs** 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) or with the option of 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

* Ultra high output power
* Highly efficient
* Super high linear power
* Multicarrier operation
* Superior lifetime based on GaN-tech
* High MTBF
* Soft-fail redundancy
* Hot-swappable amplification modules
* OPEX savings
* Weatherproof (outdoor)
* Compact design
* Simple operation & maintenance

CELESTIA | TTI

TECHNICAL SPECIFICATIONS

HIGH POWER GaN Ku SSPA

1.1kW/2kW/3.5kW

Outdoor/Indoor

OTHER FEATURES

* Automatic Control Mode: AGC, ALC
* Pressure window
* Output RF calibrated sample port

OPTIONS

* Extended temperature range: -40 ºC, +55 ºC
* Receive reject filter (external)
* Harmonic filter (external)
* L to Ku band up-converters in 1:1 redundancy configuration (external)
* SNMP
* AC breaker box

ELECTRICAL

Operating frequency range	13.75 - 14.50 GHz / 12.75-13.25 GHz
Output power ($P_{SAT\ (typical)}$)	
1.1 kW / 2 kW / 3.5 kW	60.4 dBm / 63 dBm / 65.4 dBm
Linear output power ($P_{LINEAR*}$)	
1.1 kW / 2 kW / 3.5 kW	59.4 dBm / 62 dBm / 64.4 dBm
Gain	>70 dB
Gain flatness	<4 dB p-p over full band; <1 dB p-p over any 40 MHz
Gain variation over temperature	<± 1.5 dB over full operating range
Attenuation adjustment range	30 dB in 0.25 dB step
Input VSWR	≤1.5:1
Output VSWR	≤1.3:1
Spectral regrowth	-25 dBc @ $P_{LINEAR*}$
Spurious	-60 dBc max @ $P_{LINEAR*}$

** For single carrier with modulation DVB-S, 4Mbaud, roll-off: 0.25, ModCod QPSK-3/4, occupied bandwidth 5MHz, measured @1.0x symbol rate*

POWER SUPPLY

Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ P_{SAT}	
1.1 kW / 2 kW / 3.5 kW	<5 kW / <10 kW / <20 kW

INTERFACES & PHYSICAL

Dimensions (L x W x H)	
Outdoor	1370 x 1070 x 1000 mm (1.1 kW / 2 kW) / 1370 x 2000 x 1000 mm (3.5 kW)
Indoor	19" Rack cabinet 44 U (H), 1 m (D) Qty. x1 (1.1 kW / 2 kW) Qty. x2 (3.5 kW)
Interfaces	RF Input: N (f)
	RF Output: WR75 grooved / RF sample: SMA
	M&C: Ethernet or 19-pin MIL circular (outdoor) M&C: Ethernet or 15-pin D-Sub (indoor)

MONITOR & CONTROL

Remote control	RS-485 / Ethernet / Dry-Contacts / Web user interfaces
Monitor parameters	Forward & Reverse output power / Input power / Individual SSPAs output power / Temperature / Summary alarms
Internal self protection	Temperature (>85 ºC) / Reflected power / High input-output power

ENVIRONMENTAL

Operating temperature	-30 ºC to +55 ºC (outdoor) / 0 ºC to +50 ºC (indoor)
Storage temperature	-40 ºC to +85 ºC
Humidity	100 % condensing (outdoor)

TTI CONTACT

sales@ttinorte.es
www.ttinorte.com

Rev. 3 01/24