CELESTIA | TTi

GaN Ku SSPA/BUC
150W/325W/600W
Indoor

NEW GENERATION OF GAN BASED SSPAS/BUCS FOR BROADCAST SATCOM

Using cutting-edge **GaN technology,** the new Ku SSPA/BUC family offers outstanding performance in 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.

Built-in up converter plus **high stability internal reference** for BUC.

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

* Highly efficient
* Super high linear power
* Multicarrier operation
* Superior lifetime based on GaN-tech
* High MTBF
* External AC/DC power supply: 1RU 19" subrack
* Redundant AC/DC converters (hot swappable)
* Redundant configurations (1:1, 2:1, N:1)
* OPEX savings
* Rack mounting (6RU)
* Simple operation & maintenance

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TECHNICAL SPECIFICATIONS

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OTHER FEATURES

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

OPTIONS

* Ethernet port
* Redundant systems 1:1, 2:1, N:1
* Indoor controller
* Receive reject filter (external)
* Harmonic filter (external)
* SNMP
* High stability internal reference
* Air exhaust MEC interface
* Breaker panel

ACCESSORIES & SPARES

* Set of fans
* Power supply module

ELECTRICAL

Input frequency range	BUC (1) 950-1700 MHz (2) 950-1450 MHz
Operating frequency range	(1) 13.75-14.50 GHz, LO 12.80 GHz (2) 12.75-13.25 GHz, LO 11.80 GHz
Output power ($P_{SAT\ (typical)}$)	
150 W / 325 W / 600 W	51.8 dBm / 55 dBm / 57.8 dBm
Linear output power ($P_{LINEAR*}$)	
150 W / 325 W / 600 W	50.8 dBm / 54 dBm / 56.8 dBm
Gain	>65 dB (SSPA); >70 dB (BUC)
Gain flatness	3 dB p-p max over full band; 1 dB p-p max over any 40 MHz
Gain variation over temperature	± 1 dB over full operating range
Attenuation adjustment range	25 dB 0.25 dB step (BUC) 25 dB 0.10 dB step (SSPA)
Input VSWR	≤1.5:1
Output VSWR	≤1.3:1
Phase noise (BUC)	-65 dBc/Hz at 100 Hz, -85 dBc/Hz at 1 kHz, -90 dBc/Hz at 10 kHz, -95 dBc/Hz at 100 kHz
External ref. freq. & phase noise (BUC)	10 MHz, 0 dBm ±5 dB (TX IF port multiplexed), -135 dBc/Hz at 100 Hz, -155 dBc/Hz at 1 kHz,-160 dBc/Hz at 10 kHz
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

Power supply module	1RU 19" subrack: AC/DC converters (Qty. 1 for 150 W / Qty. 2 for 325 W/600 W) hot-swappable working in redundancy
Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ P_{SAT}	
150 W / 325 W / 600 W	680 W / 1400 W / 2600 W

INTERFACES & PHYSICAL

Dimensions (W x H x D)	483 x 266 x 601 mm (including handles) - RF unit 6RU panel height 483 x 266 x 561 mm (without handles) - RF unit 6RU panel height Power supply 1RU panel height
Weight	45 Kg
Interfaces	RF Input: N-type (f) (BUC) / SMA (f) (SSPA)
	RF Output: WR75 grooved
	RF Sample: SMA
	AC Line: IEC320
	M&C: DB15 (m)
	Inhibit switch signal: DB9 (f)

MONITOR & CONTROL

Remote control	RS-485 / USB
Monitor parameters	Forward & Reverse output power / Input power / Temperature / Summary alarms
Internal self protection	Temperature (>85 ºC) / Reflected power / High input-output power

ENVIRONMENTAL

Operating temperature	0 ºC to +50 ºC
Storage temperature	-40 ºC to +85 ºC

TTI CONTACT

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