CELESTIA | TTi

GaN C SSPA/BUC
800W
Indoor

New Generation of GaN based SSPAs/BUCs for broadcast satcom



USING CUTTING-EDGE **GAN TECHNOLOGY**, THE NEW C 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 800 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
* Input 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

RF performance

Input frequency range	BUC 950-1525 MHz
Operating frequency range	5.85 - 6.425 GHz, LO 4.9 GHz
Output power ($P_{SAT\ (typical)}$)	59 dBm
Linear output power ($P_{LINEAR*}$)	58 dBm
Gain	>70 dB
Gain flatness	3 dB p-p max over full band; 1 dB p-p max over any 40 MHz
Gain variation over temperature	± 1.5 dB over full operating range
Attenuation adjustment range	20 dB 0.1 dB step
Input VSWR	≤1.5:1
Output VSWR	≤1.3:1
Phase noise (BUC)	-75 dBc/Hz at 100Hz, -90 dBc/Hz at 1 kHz, -100 dBc/Hz at 10Hz, -100 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 2) hot-swappable working in redundancy
Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ P_{SAT}	<3000 W

Interfaces & Physical

Dimensions (W x H x D)	483 x 266 x 518 mm - RF unit 6RU panel height Power Supply 1RU panel height
Weight	35 Kg
Interfaces	RF input: N-type (f) (BUC) / SMA (f) (SSPA)
	RF output: CPR-137-G Grooved
	RF samples: N-type (f)
	AC line: IEC320
	M&C: DB15 (m) / DB9 (f) for inhibit switch signal

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

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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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