

# 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 OUTDOOR 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 kW's 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.

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
- \* Detachable power supply module
- \* Redundant configurations (1:1, 2:1, N:1)
- \* OPEX savings
- \* Weatherproof
- \* Compact design
- \* Simple operation & maintenance



**OTHER FEATURES**

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

**OPTIONS**

- \* Extended temperature range: -40 °C, +55 °C
- \* Redundant systems 1:1, 2:1, N:1
- \* Indoor controller
- \* Receive reject filter (external)
- \* Harmonic filter (external)
- \* SNMP
- \* High stability internal reference

**ACCESSORIES & SPARES**

- \* Set of fans
- \* Detachable power supply

 celestia-tti.com  
sales@celestia-tti.com

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

Unless otherwise specifications, tests have been done at 23 °C.

 **RF performance**

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 ( $P_{SAT (typical)}$ )	57.8 dBm
Linear output power ( $P_{LINEAR}$ )	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	±1.5 dB over full operating range
Attenuation adjustment range	25 dB in 0.25 dB step (BUC) 25 dB in 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**

Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ $P_{SAT}$	2500 W

 **Interfaces & Physical**

Dimensions (L x W x H)	550 x 360 x 289 mm
Weight	68.5 Kg
Interfaces	RF Input (L-Band + Ref. signal): N (f) (BUC) / SMA (f) (SSPA) RF Output: WR75 grooved / RF sample: SMA AC Line: 3-pin MIL circular (RT00144PNH) M&C: 19-pin MIL circular (UT0016-19SH)

 **Monitor & Control**

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

 **Environmental**

Operating temperature	-30 °C to +55 °C
Storage temperature	-40 °C to +85 °C
Humidity	100 % condensing