

250 WATT INDOOR C-BAND SSPB

SCPB-CBS540R



- Superior reliability with rugged mechanical construction
- High power efficiency and low power draw
- PA overdrive protection design
- Ruggedized enclosure; operating temperature 0 °C to +50 °C
- 1:1 & 2:1 redundant subsystem kits as options
- Minimized full-lifecycle maintenance expenditure
- Optional ultra-high-stability internal reference oscillator
- Custom engineering support upon request

Overview

Stellaris leverages state-of-the-art GaN technology alongside 3D power-combining technologies to mass-produce high-performance, highly reliable RF products. The product portfolio spans SSPAs/SSPBs rated from 4 W up to 1000 W, LNAs, LNBs, transceivers, and phased-array antennas, supporting frequency bands including S, L, C, X, Ku, Ka, Q, and V. They have been extensively deployed in satellite communications, commercial aerospace, critical infrastructure, and governmental applications across diverse industry verticals.

SCPB-CBS540R is designed for compact satellite communication systems requiring low SWaP integration and flexible deployment. It features compact form factor, high efficiency operation, and simplified installation, making it suitable for mobile terminals, transportable platforms, and VSAT applications.

Ordering Information

S	C	A ₁	A ₂	-	B ₁	B ₂	C ₁	D ₁	D ₂	D ₃	E ₁
A ₁ A ₂	Product Type	PA: SSPA; PB: SSPA with Integrated BUC									
B ₁ B ₂	Frequency band	CB: C-Band									
C ₁	Frequency Sub Band	S: 5.85 – 6.425 GHz E: 5.85 – 6.725 GHz									
D ₁ D ₂ D ₃	Output Power (dBm)	540: 54dBm									
E ₁	Environmental Class	U: Outdoor Unit R: Indoor Rack Mounted Unit M: Module									

For Example:

SCPB-CBS540R: 5.85 – 6.425 GHz 250 Watt Outdoor SSPA

SCPB-CBE540R: Input 950 – 1825 MHz, Output 5.85 – 6.725 GHz

250Watt Outdoor SSPB



250 WATT INDOOR C-BAND SSPB

SCPB-CBS540R

RF Specifications

Output Frequency	5.85 – 6.425 GHz 5.85 – 6.725 GHz optional
Input Frequency	950 – 1525 MHz 950 – 1825 MHz optional
LO Frequency	4.9 GHz
Reference Frequency	External 0dBm±5dB (10MHz Automatic switching) Internal $\leq \pm 0.1$ ppm over temp.
Output Power (Rated)	54 dBm
Output Power (Linear) ¹	51 dBm
Small Signal Gain	70 dB min
Gain Adjustment	0~20 dB in 0.25 dB steps
Gain Variation over 40 MHz	1.2 dB p-p
Gain Variation over 500 MHz	3.0 dB p-p
Gain Variation over Full Band	4.0 dB p-p
Gain Variation over Temperature	2.0 dB p-p
IM3 @ Plin & Dual tones 5MHz apart	-25 dBc
Phase Noise	-65 dBc/Hz at 100 Hz -75 dBc/Hz at 1 KHz -85 dBc/Hz at 10 KHz -95 dBc/Hz at 100 KHz
Output Spurious @ Rated power	≤ -55 dBc
AM/PM Conversion @Plin	2.0° /dB
Noise Power Density @5.85-6.425GHz	≤ -70 dBW/4KHz
Noise Power Density @3.4-4.2GHz	≤ -150 dBW/4KHz

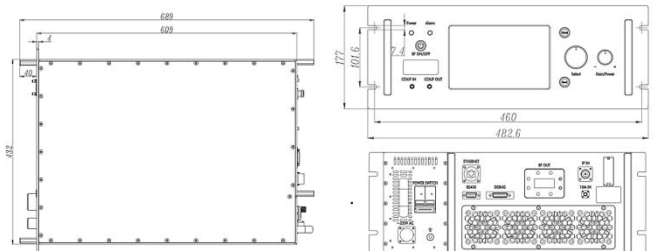
Physical & Environmental

Power Supply	220VAC (176-264 V, 47-63 Hz)
Power Consumption	1000 @ Rated power
Outline dimensions	610 x 482.6 x 177 mm (24 x 19 x 6.9 in)
Weight	28 kg (83.8 lbs.)
Operating Temperature	0 to +50° C (+32 to +122° F)
Storage Temperature	-20 to +70C (-4 to +158° F)
Humidity	5% to 95% non-condensing

Interfaces

Input Interface	N-K (50Ω)
Input VSWR	$\leq 1.5: 1$
Output Interface	WR-137
Output VSWR	$\leq 1.25: 1$
Coupling Interface	SMA-K
Power Connector	3-Pin Circular Connector
M&C Connector	RJ45 & DB9(F)
Debug	DB15(F): RS485/RS422/RS232
M&C Function	RS485/RS422; Ethernet (HTTP & SNMP)
LED Status Indicator	Green: Normal Red: Fault

Note: Output Power (Linear)¹: < -25 dBc IMD3



Specifications subject to change without notice. DS: 1-0-1/0626