

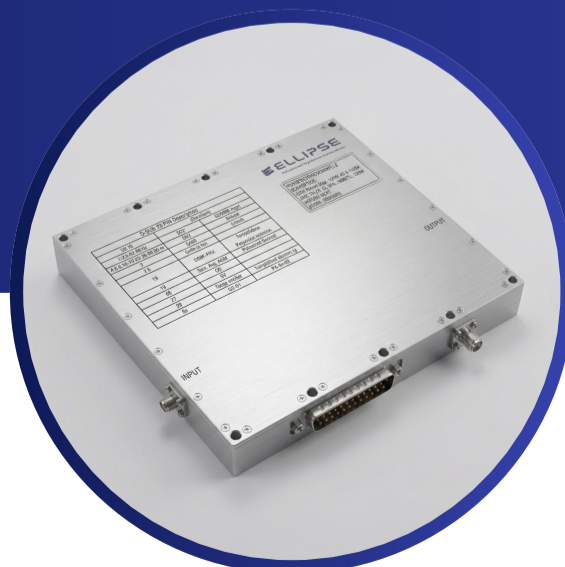
X-BAND HIGH POWER AMPLIFIER – 100W CW MISSION – READY RF POWER FOR HARSH ENVIRONMENTS CONDITIONS

OVERVIEW

The RV-EL-HPA_103G11G_100W is a rugged, high-efficiency X-band power amplifier engineered to meet the stringent requirements of modern defense platforms. Designed for mission-critical applications, the unit delivers consistent high-power performance, superior linearity, and spectral integrity across the entire operational bandwidth—even under extreme environmental conditions. Its compact, low-profile design enables seamless integration into airborne, naval, and ground-based systems where space, weight, and reliability are critical.

KEY CAPABILITIES

- 100W CW Output Power across 800 MHz BW at X-Band
- High Gain & Flatness for stable system performance
- Excellent Linearity supporting advanced modulation schemes (QPSK / 8PSK)
- Low Spurious & Harmonics for clean spectral operation
- Significantly low EVM
- Integrated Protection (thermal shutdown, isolator-protected architecture)
- High Reliability – MTBF > 155,000 hours @ AUC 75°C base plate
- Optimized for Harsh Environments:
 - -40°C to +75°C operating range
 - High-altitude operation up to 45,000 ft
 - High humidity resilience



DESIGNED FOR INTEGRATION

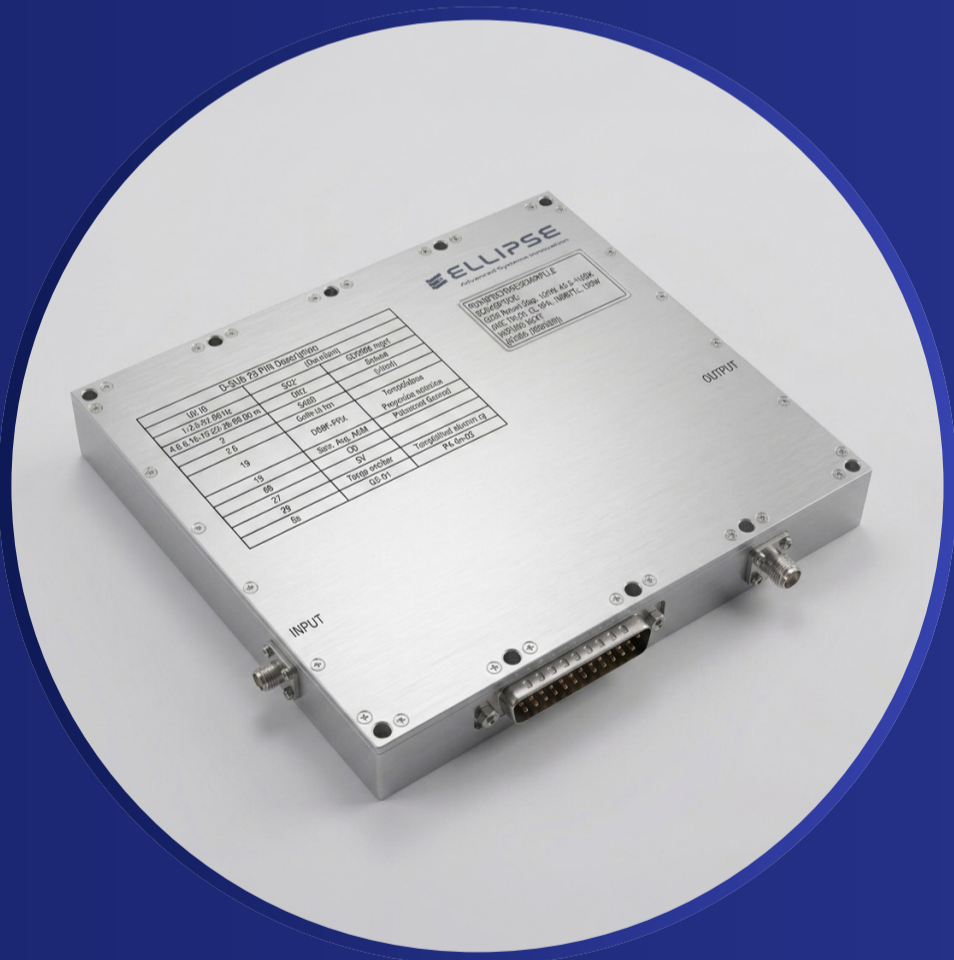
- Compact & Lightweight (≤ 1 kg)
- Standard RF Interfaces (SMA) customization possible
- Full Control & Monitoring via D-sub 25 interface
- 28VDC primary power architecture
- Built for platform-level integration with minimal adaptation effort

APPLICATIONS

- Tactical and strategic data links
- Radar systems (airborne, naval, ground)
- Electronic warfare (EW) systems
- High-capacity communication payloads
- ISR and mission-critical RF platforms

VALUE PROPOSITION

Delivering reliable RF power where failure is not an option, this amplifier combines performance, robustness, and integration efficiency – enabling faster deployment, reduced system risk, and long-term operational stability.



ELECTRICAL SPECIFICATIONS @ +28VDC, -40C TO +75C 50Ω BASE PALTE

PARAMETER	SYMBOL	MIN	.TYP	MAX	UNIT
OPERATING FREQUENCY	BW	10300		11000	MHz
OUTPUT POWER CW	PSAT	90	100		W
INPUT RETURN LOSS	S11		-14	-10	dB
OUTPUT RETURN LOSS	S22		-14	-10	dB
POWER GAIN @ PIN = -5dBm	GP	51		57	dB
POWER GAIN FLATNESS @ PIN = -5dBm	ΔGP			1.0	dB P-P
SMALL SIGNAL GAIN @ -15dBm	GSS	54		64	dB
SMALL SIGNAL GAIN FLATNESS @ -15dBm	ΔGSS		4.0		dB
NOISE FIGURE	NF			12	dB
EVM (QPSK 100Mbps) @ POUT = 49.0dBm	EVM		5	8	%
EVM (8-PSK 100Mbps) @ POUT = 49.0dBm	EVM		5	8	%
HARMONICS @ POUT = 49.0dBm CW	H2ND		-40	-35	dBc
SPURIOUS SIGNALS @ POUT = 49.0dBm CW	SPUR			-70	dBc
OPERATING VOLTAGE	VDC1	27.5	28	28.5	Volt
OPERATING VOLTAGE	VDC2	11.5	12	12.5	Volt
POWER CONSUMPTION @ 28VDC, 49dBm CW	PDC1			430	W
CURRENT CONSUMPTION @ 12VDC±0.5V	IDC2		0.22	0.5	A
EFFICIENCY @ PSAT	EFF	20	25		%
SWITCHING TIME	T ON/OFF			100	mSec
MTBF AUC @ BASE PLATE 75° C	HR	155K		MIL-HDBK-217 FN2	
STABILITY		UNCONDITIONALLY STABLE BY DESIGN			
RUGGEDNESS		ISOLATOR PROTECTED SYSTEM			



MECHANICAL SPECIFICATIONS

PARAMETER	VALUE
DIMENSIONS	150 x 176 x 22mm
WEIGHT	MAX 1.0 Kg
RF CONNECTORS INPUT	SMA(F) CONNECTOR
RF CONNECTORS OUTPUT	SMA(F) CONNECTOR
DC / CONTROL CONNECTOR	D-SUB-MALE 25PIN
FINISH	NICKEL (CAN BE CUSTOMIZED)

