

UNCLASSIFIED

DATASHEET

Product Features

- Solid State design using GaN devices
- Ideal replacement for Traveling Wave Tubes (TWT), Klystron and Magnetron amplifiers used in RADAR, SATCOM and MEDICAL applications
- Provides 17kW of saturated power
- Hot-swappable PA modules
- Dual Input
- Built-in self protection circuits for high pulse width and high pulse repetition frequency (PRF)
- Redundant modular AC/DC power supply
- Forced air cooled with integrated redundant blowers
- Local/Remote monitoring and control via Ethernet and RS485 interfaces
- SSPA for Air Traffic Control (ATC) Surveillance Radar



Product Description

DVB-TECH GaN based S-Band Pulse Solid State Power Amplifier for Air Traffic Control Radars (ATC). The highly efficient design is the ideal replacement for TWT amplifiers used in electronic warfare (EW), RADAR and SATCOM applications. It offers 17kW saturated power across a 3.1 to 3.5 GHz frequency band with maximum reliability and long service life.

The modular design includes ten (10) hot-swappable PA modules; the loss of one (1) PA module will result not less than 13.8kW in the output power level reduction. Passive combining/switching is employed to avoid RF output power interruptions. A redundant AC/DC power supply system with hot-swappable units is also included.

The High-Power Amplifier (HPA) system features a number of monitoring and self-protection circuits including input overdrive, forward power, reflected power, high pulse width, high pulse repetition frequency (PRF) and over temperature. Additionally, the power amplifiers (PA) are equipped with an output power waveguide circulator.

The system controller provides a user-friendly interface for monitoring and controls the complete HPA system as well as the individual PA modules. A front panel display provides the user with local monitoring and control via a GUI (Graphic User Interface) based on 5" LCD touch-screen display, while Ethernet and RS485 interfaces provide the user with remote monitoring and control via WEB GUI and SNMP.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE

General	
Power Supply	Three-phase star (Y) connection 3x380Vac ($\pm 15\%$) + Neutral + Earth Conductor (PE), 47-63Hz (other input power supply on request)
Power Consumption	7000W (typical)
Power Factor	>0.98
Cooling	Forced air with integrated blowers and serviceable air filter
Operating Temperature Range	from -10 °C to 45 °C
Non-Operating Temperature Range	from -30 °C to 60 °C
Altitude	up to 3000 m

RF Characteristics					
Operation Frequency	3.1 to 3.5GHz				
Saturated RF Output Power (P_{sat})	17kW (73.42 dBm) min. Operating (Peak @ 20% Duty cycle 300uS pulse width)				
Output Power Level Reduction	<table border="0"> <tr> <td style="padding-left: 20px;">1 x PA Module Failure</td> <td>13.8 kW (72.5 dBm)</td> </tr> <tr> <td style="padding-left: 20px;">2 x PA Module Failure</td> <td>11 kW (71.4 dBm)</td> </tr> </table>	1 x PA Module Failure	13.8 kW (72.5 dBm)	2 x PA Module Failure	11 kW (71.4 dBm)
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2 x PA Module Failure	11 kW (71.4 dBm)				
Power Amplifier (PA) Module	2.7 kW (65.4 dBm) min				
Number of PA Modules	10				
RF Input Power	0 dBm typ.				
Gain	75 dB min				
Output Flatness	± 1 dB max				
Gain Stability	± 0.25 dB / 24-hour max @ constant drive and temperature				
Gain Adjustment	20 dB min				
Duty Cycle	≤ 20 %				
Pulse Width	1 to 300 us				
Pulse Drop @ 100us	< -1dB				
Harmonic emissions	<-40 dBc				

Spurious	<-60 dBc
Noise Power Density	-100 dBc into 1 MHz Bandwidth
Input VSWR	1.3:1 typ
Output VSWR	1.3:1 typ

Interfaces

Input RF Connector	Dual N-type (female), 50 OHMS Redundant RF input signals				
GATING SIGNAL	Dual connector (D-SUB 9 poles female) Dual input Bi-level gating signals Electrical standard RS-422)				
Output RF Connector	WR284 Rectangular Waveguide Impedance 50 OHM Interface with CPR-284G Flange, 10 holes				
RF Monitor Connector (FWD, RFL)	<table border="0"> <tr> <td style="padding-right: 20px;">HPA System</td> <td>N-type (female), 50 OHMS</td> </tr> <tr> <td>PA Module</td> <td>SMA-type (female), 50 OHMS</td> </tr> </table>	HPA System	N-type (female), 50 OHMS	PA Module	SMA-type (female), 50 OHMS
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PA Module	SMA-type (female), 50 OHMS				
Monitoring and Control	<p>Local: PC GUI via 5" touch-screen display</p> <p>Remote: Dual RJ45 Connector for Redundant WEB SERVER and SNMP</p>				

Mechanical

Dimensions (W x D x H)	580 x 1330 x 2000 mm
Weight	680 kg

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Contact Information

DVB-TECH S.R.L.
Via Dante Alighieri 3/B/C
20029 Turbigo
Milan, ITALY

Phone: **+39 0331 929819**
Fax: **+39 0331 929819**
E-mail: **sales@dvb-tech.com**
Web: **www.dvb-tech.com**

