



X 125W to 180W
Ku 125W to 160W
SSPA-XK

Features

- Dual-band, linearity and efficiency
- High gain
- Microprocessor based monitor and control
- Monitoring of all key operating parameters
- Built-in forward and reflected power monitors
- RS232 or RS422/485 serial interface
- Temperature compensation
- Automatic over-temperature shutdown
- Infinite VSWR protection
- Ridged waveguide output connector

Overview

In addition to the extensive line of high power Solid State Power Amplifiers (SSPAs), provided in the fully integrated packages for outdoor installation or mounting in standard 19" equipment rack, ADVANTECH also offers a product line of world's first Dual-Band Solid State Power Amplifiers (SSPAs) for the use in earth terminals with C- and Ku- bands commercial satellites.

The WWDB-180/160 is a dual-band terminal capable of providing quick reaction communications via X and Ku band satellite with output power ranging from 125W to 180 watts for X-Band and 125W to 160W for Ku-Band respectively.

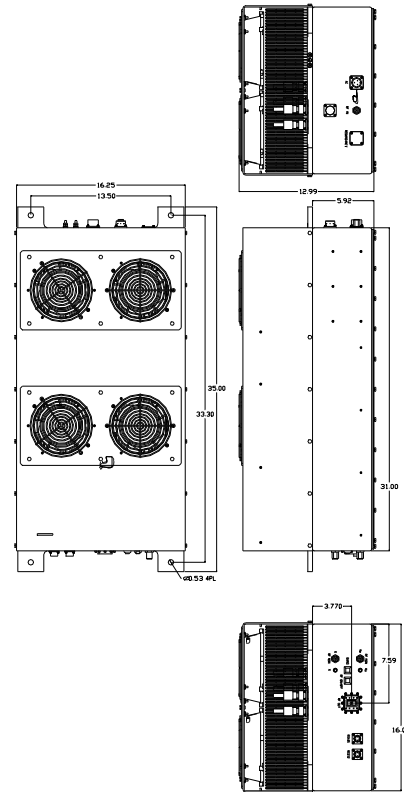
This bulletin describes the WWDB-180/160 series of ADVANTECH's hub-mount SSPA systems. ADVANTECH's SSPA systems set the industry standard for compact size, linearity and operating efficiency.

The design of these systems is based on Advantech's industry proven reliable solid state power amplifiers. Built-in design features and assembly methods, incorporated with effective combining techniques result in an amplifier with exceptional linearity and operating efficiency. The use of high efficiency power supply and conservative thermal designs contribute to the trouble free operation of the amplifier. The WWDB series amplifiers offer full monitor and control functions, which are accessible via the RS232, or RS422/485 serial interface.

Additional standard features comprise the automatic over-temperature shutdown and the remote alarm indicators which contribute to smooth operation and greatly improve the life of the product.

Options

- L-Band input
- Ethernet interface



Operation

With the graphic M&C software provided by Advantech and the serial M&C port on the dual-band SSPA, the dual-band SSPA may easily be monitored and controlled through a M&C PC at remote site. For example, it can easily be monitored and controlled in the control room of one transportable vehicle. All main key operating and status parameters can be monitored and measured, and then it is displayed on the M&C PC. The operation of attenuator setting, operational band selection and RF On/Off could directly be made on the M&C PC installed Advantech's proprietary M&C software. As one valuable option, one indoor control panel could also be provided for remote M&C operation.

On the enclosure of dual-band SSPA, there are two selection buttons for operational band selection and RF On/Off operation. The band switch button may be used for directly selecting operational band without a control panel or a PC with M&C software. The RF On/Off button is used to turn on or off amplifier.

Normally, two amplifiers of C and Ku-Band are at the mute state before one amplifier is activated to output power.

The WWDB-X/Ku series of amplifiers contain the following subsystems:

- X, Ku-Band amplifier units
- Power Supply unit
- Monitor and Control system

Dual Band (X & Ku) SSPA

Technical Specifications		Dual-Band SSPA				
Electrical Characteristics						
	X-Band			Ku-Band		
Frequency range	7.90 – 8.40 GHz			14.00 – 14.50 GHz		
Output power saturated	125 W	150W	180W	125W	150W	160 W
Output power (P1dB) min.	+50.0 dBm	+51 dBm	+52 dBm	+50.0dBm	+51.0 dBm	+51.5dBm
Gain min. (Gmax = Gmin +5dB)	66 dB			66 dB		
Max input power without damage	10 dBm					
Gain adjustment range	20 dB (via serial port)					
Gain adjustment step size	0.1 dB					
Gain flatness over operating bands	±1.0 dB max @ room temperature					
Gain slope	0.6 dB max over 40 MHz					
Gain stability	3 dB p-p over operating temperature range					
Input VSWR	1.5:1, max					
Output VSWR	1.5:1, max					
Noise Power Density						
in TX Band	-70 dBm/Hz			-70 dBm/Hz		
In RX Band	-110 dBm/Hz (7.25 – 7.75 GHz)			-145 dBm/Hz		
Spurious at rated power	-65 dBc max					
Harmonics at rated power	-45 dBc max					
AM/PM conversion at rated power	2.5 ^o /dB max @ P _{1dB}					
Third order IMD (two equal tones 5 MHz apart)	-25 dBc max @ 3 dB total back-off (SCL 6 dB back-off from rated P1dB)					
Group delay	Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz ² max. Ripple: 1 nsec p-p max.					
Residual AM	0-10 kHz		-45 dBc			
	10 kHz to 500 kHz		-20 (1.25 + log F)		F = frequency in kHz	
	500 kHz to 1 MHz		-80 dBc			
Power Requirements						
AC input voltage	190 - 240 VAC (47-63 Hz)					
Power consumption, (nominal)	1700W max typical depending on the options of power chosen					
Mechanical Characteristics						
Dimensions (L x W x H)	31.00" x 16.25" x 13.00" (788 x 413 x 330 mm)					
Weight (with mounting frame)	176 lbs (80 Kg)					
Interfaces	RF input Type N (Female)	RS232	MS3112E10-6P	RF Output Monitor (X-Band) Type N (F)		
	RF output WRD580D28G	RS485	MS3112E10-6P	RF Output Monitor (Ku-Band) Type N (F)		
		AC line	MS3102R16-10P			
Environmental Conditions						
Temperature	Operating	-30°C to +55°C				
	Storage	-50°C to +70°C				
Humidity	100%, condensing					
Altitude	10,000' AMSL, derated 2°C/1,000' from AMSL					

NORTH AMERICA
USA
Tel: +1 703 659 9796
Fax: +1 703 635 2212
info.usa@advantechwireless.com

CANADA
Tel: +1 514 420 0045
Fax: +1 514 420 0073
info.canada@advantechwireless.com

EUROPE
UNITED KINGDOM
Tel: +44 1480 357 600
Fax: +44 1480 357 601
info.uk@advantechwireless.com

RUSSIA & CIS
Tel: +7 495 971 59 18
info.russia@advantechwireless.com

INDIA
Tel: +91 33 2415 5922
info.india@advantechwireless.com

SOUTH AMERICA
Tel: +1 514 420 0045
Fax: +1 514 420 0073
info.latam@advantechwireless.com

BRAZIL
Tel: +55 11 3054 5701
Fax: +55 11 3054 5701
info.brazil@advantechwireless.com

An ISO 9001 : 2008 Company



Ref.: PB-SSPA-XK-13150