

80W/ 100W/ 125W Ku-Band BUC/ SSPB/ SSPA

80W to 125W
AWM-3000K™ series
AWMA-3000K™ series

Features

- Full range of output power up to 125W in a single package
- High linearity
- Redundant ready with no external controller
- Full M&C capability via RS485 or Ethernet port
- Forward and Reflected power monitoring
- Output Sample Port
- Field-Replaceable Power Supply
- Redundant Systems shipped fully tested, assembled and tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Built-in Receiver Reject Filter
- Weatherproof construction

Overview

Advantech Wireless Ku-Band line of Amplifiers and BUCs are intended for satellite up-link applications. The design of these units is based on Advantech's proven techniques resulting in high linearity and operating efficiency. Conservative thermal design contributes to the high MTBF for these units. Full monitor and control is provided via the serial or Ethernet ports. Special features such as automatic over-temperature shutdown and high-reflected power protection contribute to a trouble free operation.

The AWM-K/AWMA-K series is available in output power from 80W to 500W. Higher power operation may be provided using external phase combining techniques offering an output power up to 800W. Please contact factory for more details.

The full set of accessories made available will facilitate the integration of these units in any application.

Redundancy

Advantech Wireless Ku-Band line of Amplifiers and BUCs may be configured to operate in 1:1 or 1:2 redundancy mode. No extra controller is required for the redundancy operation as the built-in controller in each unit provides this function. For 1:1 redundancy operation, in addition to the two units (operating and standby) a special redundancy kit is required. For 1:2 redundancy operation another redundancy kit is needed in addition to the three units. The kits include the waveguide switches, terminations, splitter, interconnecting cable assemblies and mounting frames.

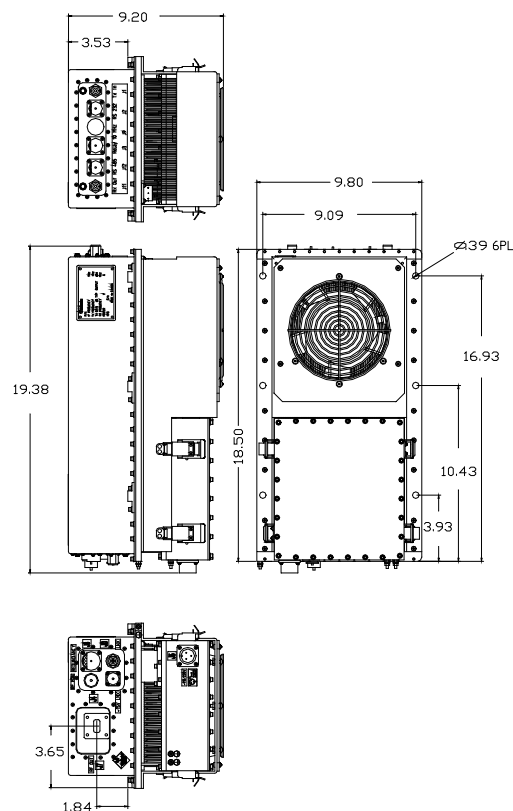


Table A

Band*	RF Band (GHz)	L-Band Input for BUC (MHz)	LO for BUC (GHz)	Output Power (W)
KS	14.00 - 14.50	950-1450	13.05	30 - 125
KX	13.75 - 14.50	950-1700	12.80	30 - 125
KL	12.75 - 13.25	950-1450	11.80	30 - 125

*Other frequency sub-bands are available. Please consult factory.

Options

- 1:1 or 1:2 Redundant configuration
- Phase combined systems for higher power
- L-Band input (SSPB/BUC operation)

Accessories

- Antenna Mounting kits
- External Receive Reject Filter
- Remote M&C panel

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Table B

SSPA/SSPB (BUC) Line

Rated Power W	Psat dBm	P1dB dBm	Gain (dB) (minimum)		Power consumption W (nominal)	Weight	Dimensions
			SSPA	BUC			
80W	+49	+48	+59	+69	650	48.5 lbs (22 kg)	18.5"x10"x9" 470x254x229mm
100W	+50	+49	+60	+70	950		
125W	+51	+50	+61	+71	1000		

General Specifications

Operating Frequency	See table A			
L-Band input (BUC)	See table A			
Output Power	See table B			
Gain	See table B			
Gain adjustment range	20 dB in 0.1 dB steps			
Gain flatness over full band	± 1dB max (SSPA); ± 1.5dB max. (SSPB/BUC)			
Gain slope over 40 MHz	± 0.3dB max. (SSPA); ± 0.5dB max. (SSPB/BUC)			
Gain variation over temperature	± 1.5 dB max			
Input Impedance and VSWR	50 Ω	SSPA 1.3:1	SSPB (BUC) 1.5:1	
Output VSWR	1.25:1			
Noise power density	-70 dBm/Hz in Transmit Band, -145 dBm/Hz in Receive band (10.95 – 12.75 GHz)			
Spurious at P1dB	-65 dBc max SSPA		-55 dBc max SSPB	
Harmonics	-40 dBc @ P1dB, -50 dBc @ P1dB -3 dB max			
AM/PM conversion	2.5°/dB at P1dB, 1°/dB at P1dB-3dB			
Third order IMD (two tones, 5MHz apart)	-25 dBc at 3 dB total back-off from rated P1dB relative to each carrier			
Group delay	Linear: 0.02 nsec/MHz max nsec p-p max		Parabolic:	0.003 nsec/MHz² max Ripple : 1
Residual AM Noise	0 – 10 kHz	-45 dBc	F = Frequency in kHz	
	10 kHz – 500 kHz	-20 (1.25 + log F) dBc		
	500 kHz – 1 MHz	-80 dBc		

SSPB (BUC)

Local Oscillator frequency	See table A		
Reference frequency	10 MHz		
Phase Noise	-50 dBc/Hz at 10Hz -65 dBc/Hz at 100Hz	-75 dBc/Hz at 1000Hz -85 dBc/Hz at 10 kHz	-95 dBc/Hz at 100 kHz
External Reference Frequency phase noise (max)	-115 dBc/Hz at 10Hz -135 dBc/Hz at 100Hz	-148 dBc/Hz at 1000Hz -150 dBc/Hz at 10 kHz	-160 dBc/Hz at 100 kHz

Power Requirements

AC input voltage	110/220 VAC auto-ranging 47-63 Hz, option 48V DC
Power consumption (max)	See table B

Mechanical Characteristics

Weight & Dimensions (L x W x H)	See table B			
Interfaces	Input (RF or L-Band):	N type female	AC line:	MS3102 type
	Output Sample Port:	N type female	RS232 serial port:	MS3112E10-6P
	RF output:	WR75 cover	RS485/Ethernet:	MS3112 type
	Redundancy:	MS3112E16-26P	Discrete port:	MS3112E12-10P

Environmental Conditions

Temperature:	Operating	-30°C to +55°C	Option 1: -40°C to +55 °C	Option 2: -50°C to +55 °C
	Storage	-55°C to +85°C		
Humidity	100%, condensing (2" rain/hour)			
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL			

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