

Dual-Band, Class A Solid State Amplifiers

We put two of our state-of-the-art Class A CW amplifiers in a single chassis to address your needs and provide an easy to use amplifier system. With AR's dual-band amplifiers, you have freedom like never before.

The dual-band amplifiers combine two amplifiers in one package, enabling you to cover a wider frequency with one dual-band amplifier that requires less space and costs and weighs less than two individual solid state amplifiers.

Our dual-band amplifiers are mismatch tolerant, so they provide damage and oscillation protection when connected to any load impedance. These amplifiers can be used for EMC, EW, and other applications because they are linear and extremely load tolerant. They operate without damage or oscillation with any magnitude and phase of source and load impedance.

All our amplifiers have modulation capability that faithfully reproduces AM, FM, or pulse modulation that appears on the input signal. The AM peak envelope power is limited to specified power.

Some Benefits To Our Customers:

- Single unit eliminates need for external switches, resulting in less complexity and lower unit cost
- Simplify setup and improve throughput by not having to change antenna, coupler, or control interface
- Single unit more compact when space is an issue
- Less bulk and weight results in easier handling
- No foldback provides the maximum power to the load—you get the power you paid for
- Future upgradability results in lower upgrade costs on select models

From 700 MHz To 18 GHz "S" Series Solid State Dual-Band Amplifiers

These dual-band units supply you with up to 60 watts in the first 0.7–6 GHz band split and up to 40 watts output power in the 6–18 GHz split. A few of the applications benefiting from these models include immunity testing, EW, calibration, R&D, and material testing.

These versatile dual-band amplifiers also have the flexibility to be upgraded to higher power levels for each specific frequency range.

From 10 kHz To 1,000 MHz Solid State Dual-Band Amplifiers

Applications specific dual-band amplifiers are ready for the job! With AR's state-of-the-art design capabilities, these dual-band amplifiers help the user be more productive while watching the bottom line. Capabilities allow us to combine the best of our single band amplifiers to exceed requirements of standards such as near-field immunity, IEC EN61000, and MIL-STD 461 CS114 Navy.

10 kHz to 1,000 MHz 0.7 to 18 GHz

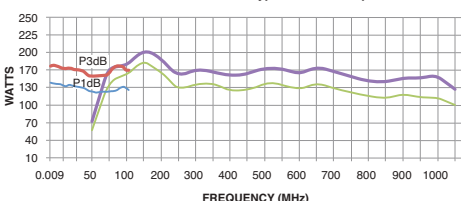
150/150AW1000 Dual-Band Solid State Amplifier



150/130 watts, 10 kHz–1,000 MHz

Rated Power Output	150 watts min (10 kHz–100 MHz) 130 watts min (80–1,000 MHz)
Input for Rated Output	1.0 milliwatt max., 0 dBm
Power Output @ 3 dB compression	
Nominal	165 watts (10 kHz–100 MHz) 150 watts (80–1,000 MHz)
Minimum	140 watts (10 kHz–100 MHz) 125 watts (80–1,000 MHz)
Power Output @ 1 dB compression	
Nominal	135 watts (10 kHz–100 MHz) 125 watts (80–1,000 MHz)
Minimum	110 watts (10 kHz–100 MHz) 100 watts (80–1,000 MHz)
Power Gain Flatness (0 dBm IN)	±1.0 dB typ., ±1.5 dB max. (10 kHz–100 MHz) ±1.5 dB typ., ±2.0 dB max. (80–1,000 MHz)
Frequency Response	10 kHz–100 MHz instantaneously 80–1,000 MHz instantaneously
Power Gain (at max. setting)	51.8 dB min. (10 kHz–100 MHz) 52 dB min. (80–1,000 MHz)
Gain Adjustment (continuous range)	20 dB min.
Input Impedance	50 ohms, VSWR 2.0:1 max.
Output Impedance	50 ohms, nominal
Mismatch Tolerance	Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.
Spurious	Minus 73 dBc typ.
Harmonic Distortion	Minus 20 dBc max. at 100 watts, -30 dBc typ. at 70 watts (10 kHz–100 MHz) -30 dBc typ. at 100 watts (80–1,000 MHz)
Third Order Intercept Point	55 dBm typ. (10 kHz–100 MHz) 58 dBm typ. (80–1,000 MHz)
Noise Figure	8 dB typ. (10 kHz–100 MHz) 8 dB max., 6 dB typ. (80–1,000 MHz)
Primary Power (Universal; selected automatically)	100–240 VAC, 50/60 Hz 500 watts (10 kHz–100 MHz) 650 watts max. (80–1,000 MHz)
Connectors	RF input Type N female RF output Type N female
Standard Remote Interfaces	IEEE-488 24-pin female RS-232 9-pin Subminiature D Female RS-232 (fiber optic) Type ST USB 2.0 Type B Ethernet RJ-45
Safety Interlock	15-pin Subminiature D
Cooling	Forced air (internal self-contained liquid)
Weight	With Cabinet 42.6 kg (94 lb.) Without Cabinet 31.3 kg (69 lb.)
Size (WxHxD)	With Cabinet 50.3 x 20.5 x 74.9 cm / 19.8 x 8.1 x 29.5 in. Without Cabinet 48.3 x 17.7 x 74.9 cm / 19.0 x 7.0 x 29.5 in.
Export Classification:	EAR99

Model 150/150AW1000 Typical Power Output



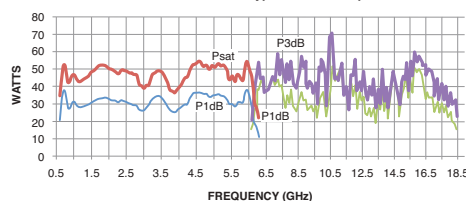
30/20S1G18B Dual-Band Solid State Amplifier



30/20 watts, 0.7 GHz–18 GHz

Rated Power Output	30 watts min (0.7–6 GHz), 20 watts min (6–18 GHz)
Input for Rated Output	1.0 milliwatt max., 0 dBm
Power Output @ 3 dB compression	
Nominal	35 watts (0.7–6 GHz), 25 watts (6–18 GHz)
Minimum	26 watts (0.7–6 GHz), 18 watts (6–18 GHz)
Power Output @ 1 dB compression	
Nominal	30 watts (0.7–6 GHz), 22 watts (6–18 GHz)
Minimum	22 watts (0.7–6 GHz), 15 watts (6–18 GHz)
Power Gain Flatness (0 dBm IN)	±1.5 dB typ., ±2.0 dB max. (0.7–6 GHz) ±2.0 dB typ., ±3.0 dB max. (6–18 GHz)
Frequency Response	0.7–6 GHz instantaneously 6–18 GHz instantaneously
Power Gain (at max. setting)	44 dB min. (0.7–6 GHz), 43 dB min. (6–18 GHz)
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, nominal
Mismatch Tolerance	Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.
Spurious	Minus 73 dBc typ.
Harmonic Distortion	Minus 20 dBc max. at 30 watts (0.7–6 GHz) Minus 20 dBc max. at 20 watts (6–18 GHz)
Third Order Intercept Point	50 dBm typ. (0.7–6 GHz), 49 dBm typ. (6–18 GHz)
Noise Figure	10 dB typ.
Primary Power	90–264 VAC 50/60 Hz, single phase 300 watts max. (0.7–6 GHz) 600 watts max. (6–18 GHz)
Connectors	RF input Type N female front panel RF output Type N female front panel
Standard Remote Interfaces	IEEE-488 24-pin female RS-232 9-pin Subminiature D Female RS-232 (fiber optic) Type ST USB 2.0 Type B Ethernet RJ-45
Safety Interlock	15-pin Subminiature D
Cooling	Forced air (self-contained fans)
Weight	With Cabinet 42 kg (93 lb.) Without Cabinet 31 kg (68 lb.)
Size (WxHxD)	With Cabinet 50.3 x 34 x 62.2 cm / 19.8 x 13.4 x 24.5 in. Without Cabinet 48.3 x 31.2 x 62.2 cm / 19.0 x 12.3 x 24.5 in.
Export Classification:	3A001

Model 30/20S1G18B Typical Power Output



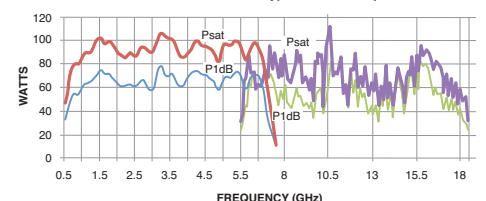
60/40S1G18B Dual-Band Solid State Amplifier



60/40 watts, 0.7 GHz–18 GHz

Rated Power Output	60 watts min (0.7–6 GHz), 40 watts min (6–18 GHz)
Input for Rated Output	1.0 milliwatt max., 0 dBm
Power Output @ 3 dB compression	
Nominal	60 watts (0.7–6 GHz), 46 watts (6–18 GHz)
Minimum	55 watts (0.7–6 GHz), 35 watts (6–18 GHz)
Power Output @ 1 dB compression	
Nominal	57 watts (0.7–6 GHz), 30 watts (6–18 GHz)
Minimum	50 watts (0.7–6 GHz), 22 watts (6–18 GHz)
Power Gain Flatness (0 dBm IN)	±1.5 dB typ., ±2.0 dB max. (0.7–6 GHz) ±2.0 dB typ., ±3.0 dB max. (6–18 GHz)
Frequency Response	0.7–6 GHz instantaneously 6–18 GHz instantaneously
Power Gain (at max. setting)	48 dB min (0.7–6 GHz), 46 dB min (6–18 GHz)
Input Impedance	50 ohms, VSWR 2.5:1 max.
Output Impedance	50 ohms, nominal
Mismatch Tolerance	Will operate without damage or oscillation when connected to any load impedance without the aid of foldback circuitry.
Spurious	Minus 73 dBc typ.
Harmonic Distortion	Minus 20 dBc max. at 60 watts (0.7–6 GHz) Minus 20 dBc max. at 40 watts (6–18 GHz)
Third Order Intercept Point	54 dBm typ. (0.7–6 GHz), 52 dBm typ. (6–18 GHz)
Noise Figure	10 dB typ.
Primary Power	90–264 VAC 50/60 Hz, single phase 550 watts max. (0.7–6 GHz) <1,000 watts max. (6–18 GHz)
Connectors	RF input Type N female front panel RF output Type N female front panel
Standard Remote Interfaces	IEEE-488 24-pin female RS-232 9-pin Subminiature D Female RS-232 (fiber optic) Type ST USB 2.0 Type B Ethernet RJ-45
Safety Interlock	15-pin Subminiature D
Cooling	Forced air (self-contained fans)
Weight	With Cabinet 52.2 kg (115 lb.) Without Cabinet 40.1 kg (88 lb.)
Size (WxHxD)	With Cabinet 50.3 x 34 x 62.2 cm / 19.8 x 13.4 x 24.5 in. Without Cabinet 48.3 x 31.2 x 62.2 cm / 19.0 x 12.3 x 24.5 in.
Export Classification:	3A001

Model 60/40S1G18B Typical Power Output



AR's Class AB Solid State Power Amplifiers

AR is now offering a choice between our world-renowned Class A amplifiers in the 1–6 GHz frequency range and our Class AB designs when there are stringent demands for a combination of power, size, and cost.

These amplifiers feature a very cost effective solution for various applications where the linearity and extreme ruggedness of Class A designs are not required. The Class AB configuration affords almost twice the output power as a Class A approach in the same footprint in addition to providing higher efficiency at a substantially lower unit price.

Applications that can benefit from these products:

- Military jammers
- Wireless testing
- TWT replacements
- Calibration
- Laboratory general testing
- Limited EMC testing

Features and Benefits

- Wideband power—One amplifier does the work of two of our competitors
- Higher power capability than Class A designs at minimal price increase
- Higher efficiency—Less current draw for critical requirements
- Versatility—Can be used for wireless and EW applications



1 to 6 GHz

50S1G6AB Solid State Amplifier

100S1G6AB Solid State Amplifier



50 watts CW, 1.0–6.0 GHz

Rated Power Output	50 watts min. (1–6 GHz)
Small signal gain flatness	±1.0 dB typical / ±2.0 dB maximum
Frequency Response	1.0–6 GHz instantaneously
Gain (at max. setting)	47 dB min.
Gain Adjustment (continuous range)	15 dB min. (4096 steps remote)
Input Impedance	50 ohms, VSWR 2.0:1 max.
Output Impedance	50 ohms, nominal
Mismatch Tolerance @ rated p_{out}	3:1 at all load phase
Modulation Capability	Faithfully reproduce AM, FM, or pulse modulation appearing on the input signal
Third Order Intercept Point	56 dBm typ.
Noise Figure	10 dB typ.
Harmonic Distortion	-20 dBc typ. at 40W, -15 dBc max. at 40W
Spurious	Minus 73 dBc typ.
Phase linearity	1.0 deg/100 MHz, typical
Primary Power (selected automatically)	90–132, 180–250 VAC; 50–400 Hz, single phase; 500 watts maximum
Connectors	
RF input	Type N female on front panel
RF output	Type N female on front panel
Remote interfaces	
IEEE-488	24-pin
RS-232	9-pin Subminiature D
RS-232 (fiber optic)	Type ST
USB 2.0	Type B
Ethernet	RJ-45
Safety Interlock	15-pin Subminiature D
Cooling	Forced air (self-contained fans)
Weight	
With cabinet	15.9 kg (35 lb.)
Without cabinet	10.2 kg (22.5 lb.)
Size (WxHxD)	
With cabinet	50.3 x 15.5 x 37.6 cm / 19.8 x 6.1 x 14.8 in.
Without cabinet	48.3 x 12.7 x 37.6 cm / 19.0 x 5.25 x 14.8 in.
Export Classification	EAR99

100 watts CW, 1.0–6.0 GHz

Rated Power Output	100 watts min. (1–6 GHz)
Input for Rated Output	1 milliwatt max.
Small signal gain flatness	±1.5 dB typical / ±2.5 dB maximum
Frequency Response	1.0–6 GHz instantaneously
Gain (at max. setting)	50 dB min.
Gain Adjustment (continuous range)	10 dB min. (4096 steps remote)
Input Impedance	50 ohms, VSWR 2.0:1 max.
Output Impedance	50 ohms, nominal
Mismatch Tolerance @ rated p_{out}	Infinite VSWR. Will operate without damage or oscillation with any magnitude and phase of source and load impedance.
Modulation Capability	Faithfully reproduce AM, FM, or pulse modulation appearing on the input signal
Third Order Intercept Point	56 dBm typ.
Noise Figure	10 dB typ.
Harmonic Distortion	-15 dBc typical at rated power
Spurious	Minus 73 dBc typ.
Phase linearity	1.0 deg/100 MHz, typical
Primary Power (selected automatically)	90–132, 180–250 VAC; 50/60 Hz, single phase; 525 watts maximum
Connectors	
RF input	Type N female on front panel
RF output	Type N female on front panel
Remote interfaces	
IEEE-488	24-pin
RS-232	9-pin Subminiature D
RS-232 (fiber optic)	Type ST
USB 2.0	Type B
Ethernet	RJ-45
Safety Interlock	15-pin Subminiature D
Cooling	Forced air (self-contained fans)
Weight	
With cabinet	28.4 kg (62.5 lb.)
Without cabinet	20.2 kg (44.5 lb.)
Size (WxHxD)	
With cabinet	50.3 x 20.3 x 54.6 cm / 19.8 x 8.0 x 21.5 in.
Without cabinet	48.3 x 17.8 x 54.6 cm / 19.0 x 7.0 x 21.5 in.
Export classification	3A001

