

# AR-FS2-20LS

## FAST SWITCHING SERIES

**MODEL AR-FS2-20LS**  
*Fast Switching Series*  
**1250-2600 MHz**  
**20 WATTS CW/PEP**

Enhanced battlefield communications are achieved with the latest MANET waveforms and AR Modular RF's Fast Switching Series of tactical booster amplifiers. Operating in the 1250 to 2600 MHz L/S range, the **AR-FS2-20LS** unit provides 20 Watts output power across the band. Supporting fully automatic T/R Switching in less than 2  $\mu$ s and harmonic suppression, the unit continues Ametek's commitment to AR Modular RFs long standing tradition of building rugged and reliable radio agnostic amplifiers.

The **AR-FS2-20LS** amplifier is set up for easy operation with minimum operator intervention for rapid deployment. A wide range of available RF input powers and DC Voltages, make the amplifier flexible for vehicle, drop kit, and airborne applications.

Extending the range and quality of tactical radios has never been easier.

#### Key Features:

- *Fast T/R Switching – under 2  $\mu$ s*
- *Fully Automatic, Autosensing, T/R Switching Booster Amplifier with Automatic Harmonic Suppression*
- *Radio & Waveform Agnostic*
- *AM, FM, PM, PWM, Narrowband, Wideband, OFDM, CDMA/WCDMA, Frequency Hopping*
- *High Duty Cycle – 90% at 25°C, indefinitely w/ 25CFM*
- *Mobile Form Factor*
- *Night Vision Goggles (NVG) Compatible LED Indicator*
- *Battery & Vehicle Operation*

#### Protections:

- *Input Overdrive*
- *ALC*
- *Antenna mismatch*
- *Over Temperature*



The following specifications apply to the **AR Modular RF** booster model **AR-FS2-20LS** – a standard amplifier providing **20 Watts** output power from **1250 to 2600 MHz** with pass-through support outside of this band.

## FAST SWITCHING SERIES

### PERFORMANCE SPECIFICATIONS: AR-FS2-20LS

#### RF PERFORMANCE

SPECIFICATION		UNIT	MIN	TYPICAL	MAX	NOTES
Amplifier Class		-	A/B			Modulation: AM, FM, Narrowband, Wideband, Frequency Hopping, CMDA/WCDMA, and OFDM
Frequency Response		MHz	1250	-	2600	Active TX/RX Band
T/R Switching	TX Keying Threshold	Normal	13 ± 3			Independent of rated input power. User controlled in Options menu
		High	23 ± 3			
	T/R	µs	-	-	2	
	R/T	µs	-	-	2	
	Out of Band ↔ Bypass	µs	-	10	25	Automatic out of band switch to bypass mode
Bypass	-	Instantaneous			Full Duplex (no TX/RX gain, minimum loss)	
Transmit	Rated Output Power	dBm	40	43	45	Rated output power achieved at rated input power
	Input Power for Rated Power	dBm	-	-	33	Single carrier peak power
	Gain	dB	9	10	11	In Band
Receive	Gain (LNA)	dB	6	12	17	Active LNA, In Band
	Noise Figure (LNA)	dB	2	4	7	Active LNA, In Band
	Insertion Loss	dB	-	2	-	In Band
Bypass	Insertion Loss	dB	-	-	2	In Band
Radio / Antenna Port Impedance		Ohm	-	50	-	
VSWR Tolerance		-	-	-	Infinite	Protections against mismatch; Power delivered to load may be reduced or unit may switch to bypass
Spurious Outputs		dBc	-	-	-55	@ Rated output, < 100 kHz from carrier, 10 Hz RBW
			-	-	-70	@ Rated output, > 100 kHz from carrier, 10 Hz RBW
Harmonic Performance		dBc	-	-	-60	

RF performance metrics guaranteed at rated input power and 22 C

#### THERMAL

SPECIFICATION	UNITS	DETAILS	NOTES
Duty Cycle	%	90	At ambient temperature of 22°C or below

# AR-FS2-20LS

## FAST SWITCHING SERIES

### PRODUCT DETAILS – AR-FS2-20LS

#### DC POWER

SPECIFICATION	UNITS	TYPICAL @ 24 VDC	MODE
Input Voltage Range	VDC	12 to 35.5	
Power Consumption	W	TBD	Transmit ( <i>at rated input power</i> )
		TBD	Receive

#### MECHANICAL & ENVIRONMENTAL

SPECIFICATION	UNITS	DETAILS	NOTES
Size	inches	4.0" W x 1.8" H x 9.7" L	Not including connectors
		4.0" W x 1.8" H x 9.7" L	Including connectors
Weight	lbs.	2.4	
Operating Temperature	C	-30°C to +60°C	Ambient
Relative Humidity	%	95	Maximum, non-condensing
Cooling	-	Passive	Natural Convection / Radiation
Sealing	-	IP67	Waterproof to 1m for 30 minutes minimum
Construction	-	Aluminum housing with integrated heatsink	Black anodized

#### INTERFACE & CONTROL

The AR-FS2-20LS has interface and control elements on both the front and rear panels. The amplifier can be used standalone (only RF and DC power connections). Remote Monitor and Control interface is available. Contact Factory for details.

INTERFACE	PANEL	DETAILS	NOTES
Radio Connection	Front	TNC-F	RF ports; Alternate connector options possible
Antenna Connection	Front	TNC-F	
DC Power Connection	Rear	Shell Size-Insert 8-4	Compatible with MIL-DTL-26482, Series 1 connectors
Remote Monitor and Control	Rear	Shell Size-Insert 10-6	Compatible with MIL-DTL-26482, Series 1 connectors

#### PERFORMANCE STANDARDS

AR Modular RF booster amplifiers can be designed to meet many military standards including, but not limited to:

- MIL-STD-810x
- MIL-STD-461x
- MIL-STD-1399x

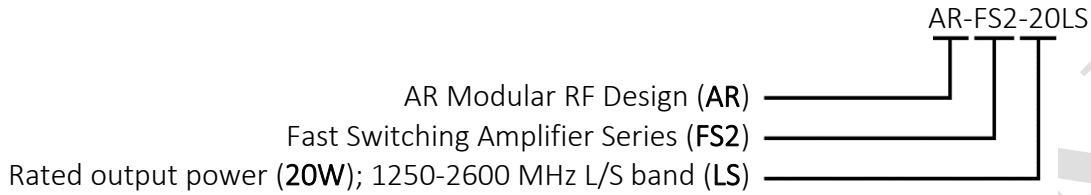
*Please speak with your Ametek Sales Representative if compliance to these or any other standards is required.*

# AR-FS2-20LS

## FAST SWITCHING SERIES

### ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
AR-FS2-20LS	Standard model, 20 W rated output, 2 W rated input



### ACCESSORIES

MODEL NUMBER	DESCRIPTION

IN DESIGN