

# Q-SERIES® Amplifiers

## Headend Amplifiers



### QRFP Headend High-Gain, High-Density Amplifier:

#### Features:

- ▶ 2 high-output 870 MHz or 1 GHz amplifiers in 1RU
- ▶ Powering by 100-240 VAC, 47 to 63 Hz (no external transformer)
- ▶ Optional -48 VDC powering (40-60 VDC)
- ▶ Various gain options
- ▶ Gallium Arsenide (GaAs) hybrid technology provides lowest noise figure & highest output capability
- ▶ RF amplifier modules can be changed from the front
- ▶ Pads & EQs accessible from front (removable lid cover)
- ▶ Fixed or variable interstage gain & slope controls to control output levels
- ▶ Directional coupler test points
- ▶ Enhanced RFI gasket allows use in high RFI environments
- ▶ Hot backup powering by +24 VDC terminals



QRFP (front view)



QRFP (rear view)

-48 VDC Supply model shown

### QRFP Specifications

SPECIFICATIONS	870 MHz 1 RU AMPLIFIERS						1 GHz AMPLIFIERS	
	Fixed Gain & Tilt (Plug-in)				Variable Gain & Tilt		Fixed Gain & Tilt (Plug-in)	Variable Gain & Tilt
GAINS AVAILABLE	18 dB	22 dB	30 dB	34 dB	28 dB	32 dB	34 dB	32 dB
TYPICAL OUTPUT LEVELS	43 dBmV	43 dBmV	43 dBmV	43 dBmV	43 dBmV	43 dBmV	43 dBmV	43 dBmV
GAIN CONTROL RANGE <sup>(1)</sup>	Pad	Pad	Pad	Pad	0-8 dB	0-8 dB	Pad	0-8 dB
SLOPE CONTROL RANGE <sup>(1)</sup>	EQ	EQ	EQ	EQ	0-8 dB	0-8 dB	EQ	0-8 dB
FREQUENCY RESPONSE	± .5 dB	± .5 dB	± .5 dB	± .5 dB	± .5 dB	± .5 dB	± .75 dB	± .75 dB
TECHNOLOGY	GaAs PD	GaAs PD	GaAs CPD	GaAs CPD	GaAs CPD	GaAs CPD	GaAs CPD	GaAs CPD
RETURN LOSS	16 dB	16 dB	16 dB	16 dB	16 dB	16 dB	16 dB	16 dB
TEST POINTS (+/- 1 dB at 870 MHz or 1 GHz)	-20 dB	-20 dB	-20 dB	-20 dB	-20 dB	-20 dB	-20 dB	-20 dB
CHANNEL LOADING	128	128	128	128	128	128	128	128
COMP. TR. BT. (-dBc) @ 43 dBmV FLAT OUTPUT	68	66	68	68	68	68	68	68
COMP. 2nd ORD. (-dBc) @ 43 dBmV FLAT OUTPUT	68	68	68	68	68	68	68	68
NOISE FIGURE	5.6 dB	7.5 dB	6 dB	5.8 dB	5.6 dB	5 dB	6.5 dB	6.5 dB
AMPS. @ 24 VDC <sup>(2)</sup> 1 / 2	.44/.88	.46/.92	.780/1.56	.780/1.56	.780/1.56	.780/1.56	.780/1.56	.780/1.56
WATTS DISSIPATION <sup>(2)</sup> 1 / 2	14/28	15/30	25/50	25/50	25/50	25/50	25/50	25/50

#### NOTES:

- (1) The QRFP models showing pad & EQ for gain control do not have variable controls. Level adjustments are made by use of plug-in pads & EQs.
- (2) Watts dissipation is measured at 120 VAC. DC amps & watts dissipated are shown for both 1 & 2 amplifiers in chassis.

## QRFP Headend High-Gain, High-Density Amplifier:

### Ordering Information

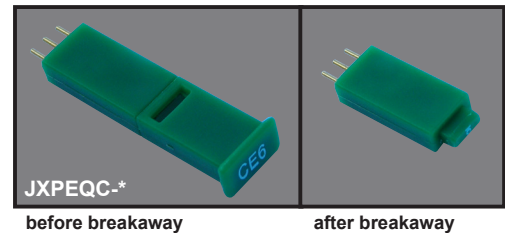
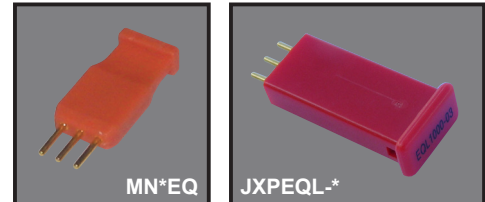
**Example Part Numbers:<sup>(1)</sup>**

<b>QRFP 87 18 4 F 87184F AC</b>	<b>QRFP 87 18 4 F AC</b>
1 2 3 4 5 6 7	1 2 3 4 5 7

- Module Name: QRFP
- Upper Bandwidth: 87 = 870 MHz  
99 = 1 GHz
- Nominal Gain.
- Amplifier Technology: 1 = SPP (Silicon Push-Pull)  
2 = SPD (Silicon Power-Doubled)  
3 = GPP (GaAs Push-Pull)  
4 = GPD (GaAs Power-Doubled)  
5 = CGPD (Cascaded GaAs Power-Doubled)
- Interstage Gain/Slope Controls: F = Fixed Pad & EQ  
V = Variable Controls
- Repeat items 2 through 5 for a Dual Amplifier.
- Power Supply: AC = 100 to 240 VAC, 47 to 63 Hz  
48 = -48 VDC Supply (40-60 VDC)

Part Number	Description
<b>Options</b>	
IPB-* or MN*PAD	Plug-in Pad, * = 0-20 dB in 1 dB steps. Used in both the input & output.
QRFPAC1M	Replacement AC Power Supply.
QRFP481M	Replacement DC Power Supply.
DTS240250UC-P5-ET	External Universal AC Power Supply, 100-240 VAC, 47-63 Hz Input, 24 VDC Output (for redundant powering option only).
MN*EQ	1 GHz Cable Tilt EQ, * = 0-16 dB in 1 dB steps. 1" tall. Used at input & interstage (in fixed version only).
JXPEQC 1000-*	1 GHz Cable Tilt EQ, * = 0-20 dB in 1 dB steps. 1.65" tall with breakaway tab to reduce to 1" tall. Used at input & interstage (in fixed version only).
JXPEQL 1000-*	1 GHz Linear EQ, * = 02.0-08.0 dB in 1 dB steps. 1" tall. Used at input & interstage (in fixed version only).
<b>Shipping Weight</b>	5.0 lbs (2.3 kg)
<b>Dimensions</b>	1.75"H x 19.0"W x 7.0"D (4.45H x 48.26W x 17.8D cm)

**NOTES:**  
(1) Examples show modules with 870 MHz, 18 dB Gain, GaAs Power-Doubled, Fixed Pad & EQ Control, and AC Power Supply  
ATX recommends using a 1RU spacer when stacking more than three of these chassis in adjacent positions in a rack.



### Functional Schematics

