

# Q-SERIES® Amplifiers

## Headend Amplifiers



### QRBA-QRCIA Forward Isolation Amplifiers:

#### Features:

- ▶ 870 MHz & 1000 MHz in 2RU
- ▶ Single hybrid technology with impedance match to a built-in 10 dB directional coupler assembly (optional 15 dB coupler available upon request)
- ▶ Up to 5 independent amplifiers
- ▶ Each amplifier has a front RF output test point calibrated at -30 dB
- ▶ Plug-in hybrids & accessories
- ▶ EQ & pads accessed via front cover
- ▶ Input signals from “master” channel line up pass through optional pad & EQ, and are then amplified by hybrid gain stage which provides nominal forward gain & reverse isolation equal to the gain of the hybrid plus 5 dB. 10 dB directional coupler at hybrid output allows insertion of new content
- ▶ Each hybrid has a separate heat sink for optimum cooling
- ▶ >55 dB combining isolation
- ▶ UL approved 50 VA class II power transformer (included)

#### QRBA

- ▶ Used as last amplifier before feeding the trunk or laser outputs from headend
- ▶ Prevents signal feedback that can cause co-channel interference allowing clear local access channels, customized advertising insertion channels, RF modems & telco signals to be sent to targeted franchise areas
- ▶ Uses 17 & 21 dB push-pull hybrids

#### QRCIA

- ▶ The same amplifier with a 13 dB hybrid followed by a 13 dB output pad for unity gain & maximum isolation
- ▶ Power-doubled units allow 2 or 3 amplifiers per chassis using 19 or 22 dB power-doubled hybrids



### QRBA-QRCIA Specifications

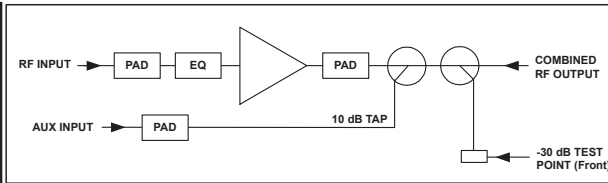
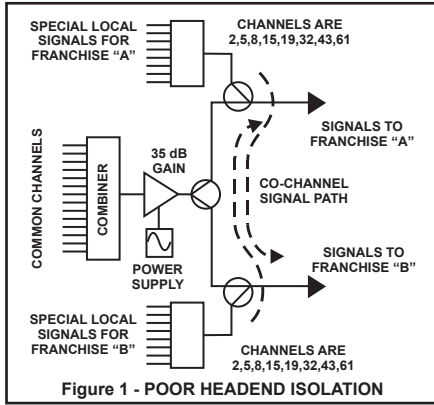
SPECIFICATIONS <sup>(1)</sup>	870 MHz				1G		
GAIN (dB)	13, 17, 21	16 G	19 GP	22 GP	17	18 GP	22 GP
TECHNOLOGY <sup>(3)</sup>	Si PP	G PP	G PD	G PD	Si PP	G PD	G PD
RESPONSE (+/-dB)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CHANNEL LOADING	128	128	128	128	128	128	128
GAIN CONTROL RANGE (dB)	PAD	PAD	PAD	PAD	PAD	PAD	PAD
SLOPE CONTROL RANGE (dB)	EQ	EQ	EQ	EQ	EQ	EQ	EQ
RETURN LOSS	15 dB <sup>(4)</sup>	15 dB	15 dB	15 dB	15 dB	15 dB	15 dB
NOISE FIGURE	8 dB	4 dB	4 dB	6 dB	8 dB	6 dB	6 dB
INSERTION TO OUT PORT ISOLATION	10 dB	10 dB	10 dB	10 dB	10 dB	10 dB	10 dB
INSERTION TO IN PORT ISOLATION	55 dB	52 dB	55 dB	57 dB	55 dB	55 dB	57 dB
OUTPUT LEVEL <sup>(2)</sup>	+30 dBmV	+38 dBmV	+40 dBmV	+40 dBmV	+30 dBmV	+40 dBmV	+40 dBmV
COMP. TR. BT. (-dB)	76	71	72	71	76	72	71
COMP. 2nd ORD. (-dB)	67	71	70	70	67	70	70
POWER DISSIPATION @ 120 VAC (Watts)	41	41	41	41	41	41	41

#### NOTES:

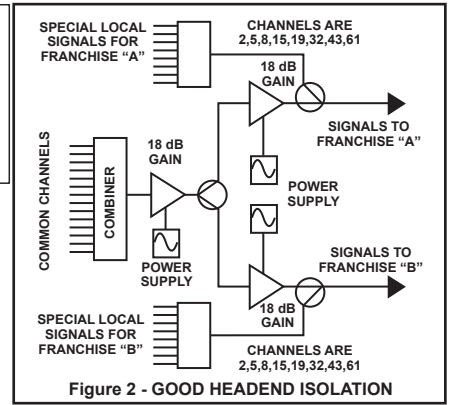
- (1) The QRCIA model has the same specs as the QRBA 13 dB gain unit. The addition of a 13 dB internal pad attenuates the signal after amplification which results in unity gain. The configuration increases the isolation of the auxiliary input to main RF input to greater than 62 dB. Order QRCIA (freq)-(number of modules), ie. QRCIA 870-05.
- (2) FLAT output levels with full analog channel loading are specified on all models.
- (3) Si = Silicon; G = GaAs, PD = Power-Doubled; PP = Push-Pull
- (4) The 21 dB gain version only has 14 dB RL from 860 to 870 MHz.

## QRBA-QRCIA Forward Isolation Amplifiers:

### Functional Schematics



If your headend is wired similar to the one on the left, an amplifier can minimize RF feedback paths shown via the 2-way splitter in the common signal path. Only two signal paths are shown. In a system with RF modems and telephony, this splitting process could go down to the node level or very small groups of nodes where QRCIA works best.



### Ordering Information

<b>Example Part Number: QRBA870 - 17/5 or QRCIA870 - 05</b>	
1: Frequency:	870 = 870 MHz 1000 = 1000 MHz
2: Gain* and/or Number of Amplifiers (1,2,3,4 or 5)	
Part Number	Description
<b>Options &amp; Spares</b>	
QPML 750-(dB)	Linear EQ for reverse tilt caused by passive eqpt. Values from 0-18 dB in 1.5 dB steps.
QPML 870-(dB)	
QPML 1000-(dB)	
QAE 550-(dB)	Coax compensating EQ for reverse tilt caused by long cables. Values from 0-21 dB in 1.5 dB steps (0-18 dB, up to 1000 MHz).
QAE 750-(dB)	
QAE 860-(dB)	
QAE 1000-(dB)	
JXP-A-**	Plug-in Attenuator Pads, ** = 0-20 dB in 1 dB steps.
#951	120 Volts to 26 Volts, 60 Hz AC Power Transformer, 50 VA Rating
#951 Transformer	
<b>Shipping Weight</b>	8 lbs (3.6 kg)
<b>Dimensions</b>	3.5"H x 19.0"W x 3.25"D (8.89H x 48.26W x 8.26D cm)
<b>NOTE:</b>	
* see Specifications Table.	

Specifications subject to change without notice.

