

# Q-SERIES® Power

## Headend Power & Switches



### BAQ-UP™ (QRED) Redundancy Switch with Backup Amplifier:

#### Features:

- ▶ Complete backup solution for critical signal path circuits
- ▶ Basic 1RU chassis contains 1 GHz redundancy switch, power supply & extra slot for second redundancy switch or amplifier
- ▶ Each microprocessor controlled switch monitors 2 RF signals & performs a switch to backup source when primary signal level drops by 3 dB or more (primary threshold level programmed at factory & can be changed at time of ordering if desired by user)
- ▶ BAQ-UP™ with switch only (SW model) can be used when operator already has primary & secondary amplifier
- ▶ For operational testing, switch can be forced into redundant mode
- ▶ 1 GHz passive switch provides redundant monitoring & control of amplifiers in +20 to +50 dBmV output range
- ▶ Can be powered by both AC & +24 DC power sources simultaneously for maximum reliability
- ▶ Main amplifier path through switch is not affected by power interruptions
- ▶ Includes a 50 VA external Class II UL approved power transformer
- ▶ Failure light & alarm
- ▶ Reference level warning
- ▶ Modular, hot-swappable 870 & 1000 MHz amplifiers

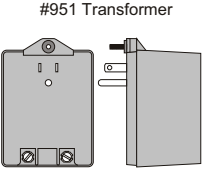


### BAQ-UP™ Specifications

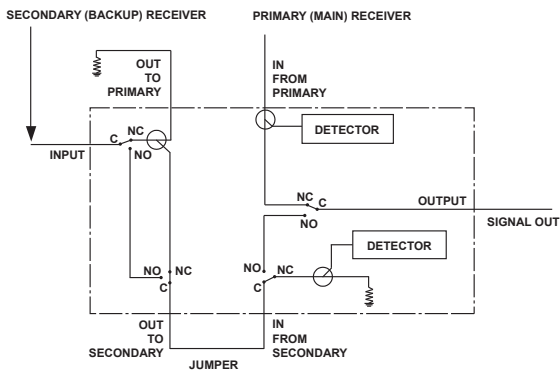
SPECIFICATIONS		870 MHz		1000 MHz	
<b>BAQ-UP™</b>					
<b>BANDWIDTH</b>		40 to 870 MHz		40 to 1000 MHz	
<b>RESPONSE</b>		+/- .5 dB			
<b>CHANNEL LOADING</b>		128			
<b>GAIN CONTROL RANGE</b>		8 dB			
<b>SLOPE CONTROL RANGE</b>		6 dB			
<b>TECHNOLOGY</b>		GaAs PD	CGP	GaAs PD	CGP
<b>GAINS AVAILABLE (dB)</b>		30, 34	33	30, 34	33
<b>OUTPUT LEVEL</b>		43 dBmV	43 dBmV	43 dBmV	43 dBmV
<b>RETURN LOSS</b>		17 dB	17 dB	17 dB	17 dB
<b>NOISE FIGURE (dB)</b>		5.0, 4.5	4.5	5.0, 4.5	4.5
<b>DISTORTIONS</b>	COMP. TR. BT. (-dB)	66	68	66	68
	COMP. 2nd ORD. (-dB)	67	68	67	68
<b>POWER (Watts) (24 DC, 120 VAC)</b>		17, 26	21, 32.5	17, 26	21, 32.5
<b>SWITCH</b>					
<b>SWITCHING TIME</b>		100 ms Default Delay -- Contact ATX for Different Delay Times			
<b>ISOLATION</b>		50 dB			
<b>INSERTION LOSS (Main Path)</b>		2 dB max. (1 dB on the input and 1 dB on the output)			
<b>RETURN LOSS</b>		18 dB min.			
<b>R.F. SENSITIVITY RANGE</b>		+20 dBmV to +50 dBmV Amplifier Output Monitoring			
<b>POWER DISSIPATION</b>		6.3 Watts Normal Mode, 8.5 Watts in Backup Mode			
<b>NOTE:</b>					
Flat Output levels with full analog channel loading are specified on all models. Adjustments may be made due to channel loading or levels. Contact factory for details.					

## BAQ-UP™ (QRED) Redundancy Switch with Backup Amplifier:

### Ordering Information

Part Number	Description
QRED1000-SW	Chassis, 1 GHz, QRED Single SW
QRED1000-SW/SW	Chassis, 1 GHz, QRED Dual SW
QRED1000-30GP	AMP/SW-1 GHz, 30 dB, GaAs, PD
QRED1000-34GP	AMP/SW-1 GHz, 34 dB, GaAs, PD
QRED1000-33CGP	AMP/SW-1 GHz, 33 dB, Cascaded, GaAs, PD
QRED870-30GP	AMP/SW-870 MHz, 30 dB, GaAs, PD
QRED870-34GP	AMP-870 MHz, 34 dB, GaAs, PD
QRED870-33CGP	AMP/SW-870 MHz, 33 dB, Cascaded, GaAs, PD
<b>Options &amp; Spares</b>	
IPB-**	Plug-in Attenuator Pad, ** = 0-20 dB in 1 dB steps.
#951	120 Volts to 26 Volts, 60 Hz AC Power Transformer, 50 VA Rating (included with unit)
 <p>#951 Transformer</p>	
<b>Shipping Weight</b>	8 lbs (3.6 kg)
<b>Dimensions</b>	1.75"H x 19.0"W x 5.0"D (4.45H x 48.26W x 12.7D cm)
<b>NOTES:</b>	
Output Technology: P = Silicon Power-Doubled; GP = Gallium Arsenide (GaAs) Power-Doubled; CGP = Cascaded GaAs Power-Doubled	

### Functional Schematics



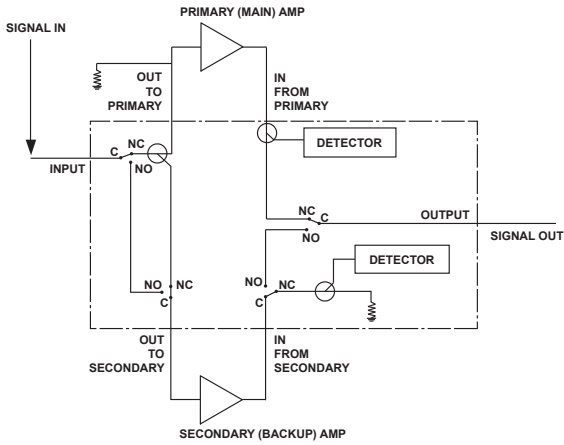
**SECONDARY (BACKUP) RECEIVER**      **PRIMARY (MAIN) RECEIVER**

INPUT → [Switch] → OUTPUT (SIGNAL OUT)

OUT TO PRIMARY (from Secondary) → IN FROM PRIMARY (to Primary)

OUT TO SECONDARY (from Primary) → IN FROM SECONDARY (to Secondary)

JUMPER connects Secondary Output to Primary Input.



**PRIMARY (MAIN) AMP**      **SECONDARY (BACKUP) AMP**

SIGNAL IN → [Switch] → SIGNAL OUT

OUT TO PRIMARY (from Secondary) → IN FROM PRIMARY (to Primary)

OUT TO SECONDARY (from Primary) → IN FROM SECONDARY (to Secondary)

This wiring configuration is for a hub site with a primary input and a backup input. In addition to the wiring method, the microprocessor is programmed at the factory to switch to the secondary input when the primary input falls below the threshold level. When the primary level is restored within normal range, the QRED will switch back to the primary input immediately. This is an advantage in unmanned hub sites in that no level resetting is required after a primary path failure.

This wiring configuration is for a headend site with an amplifier that needs backup protection. This typically is used in the signal path where an amplifier failure is not acceptable. The QRED switch is programmed to switch to the secondary amplifier when the cumulative RF output of the primary amplifier falls below a programmed level, usually a 3 dB drop. This output is measured within a frequency range from 120 to 220 MHz. The microprocessor controlled switch can be programmed to switch within the end users specifications for timing and RF levels. Once a switch is made to the secondary amplifier, the signal path continues through the secondary amplifier until a technician restores the primary amplifier signal levels and resets the switch manually.

