Datasheet

Quantum18™ BA 1.8GHZ Booster Amplifier

OVERVIEW

The Quantum18 BA 1.8GHz Booster Amplifier is designed to boost the signal between amplifiers within your existing network for areas with very long amplifier spacings. Made for the outdoors, the Quantum18 BA has a versatile housing that can fit almost anywhere, from strands and pedestals to cabinets. Enhanced with low power consumption and a compact design, it ensures operational efficiency without compromising performance.

Superior Performance: Meets and exceeds the SCTE 279 2022 standard for 1.8GHz amplifiers, featuring the latest gain block technology.

- Unparalleled performance and steadfast reliability.

Supports DOCSIS® 4.0: Engineered to support the latest DOCSIS® 4.0.

- Future-proofs your cable network, ensuring compatibility with upcoming technological advancements and increasing network demands.

Modular Design: Equipped with field-upgradable diplex filters.

- Provides flexibility for future spectrum expansions, ensuring long-term utility without frequent hardware changes.

Energy Efficient

- Benefit: Consumes less power than a traditional line extender while maintaining high performance, ensuring cost savings and eco-friendly operations.

PRELIMINARY

FORWARD PATH PERFORMANCE	UNITS	VALUE	NOTES
Pass Band	MHz	105 – 1,794	
Frequency Response	dB	+/- 0.75	
Return Loss	dB	⩾ 14.0 (105 - 640MHz) ⩾ 13.0 (640 - 1791MHz)	
Test Point(±1.5)	dB	20	output TP
Gain (minimum) @...1.8GHz	dB	15	0dB Pad is installed; for gain adjustment, a 2, 4, and 6dB Pad are stored in the lid
Internal Tilt (± 1.0)	dB	6 (258 - 1791MHz)	
Noise Figure (± 1.0) @204/258 Noise Figure (± 1.0) @396/492 Noise Figure (± 1.0) @492/606 Noise Figure (± 1.0) @684/834	dB	14 (258MHz) 13 (492MHz) 12 (606MHz) 12 (834MHz)	
Reference Output Tilt (± 1.0)	dB	6 (258 - 1791MHz)	
Distortion CTN	dB	⩾ 55	
Distortion CCN	dB	⩾ 51	
HUM 10A	dB	55	
HUM 15 A	dB	50	

REVERSE PATH PERFORMANCE	UNITS	VALUE	NOTES
Pass Band	MHz	5 – 684	
Gain (minimum)	dB	⩾ 6 (684MHz)	
Frequency Response	dB	+/- 1.0	
Internal Slope (±0.5)	dB	5	
Noise Figure (± 1.0) @204/258 Noise Figure (± 1.0) @396/492 Noise Figure (± 1.0) @492/606 Noise Figure (± 1.0) @684/834	dB	12 (204MHz) 11 (396MHz) 10 (492MHz) 9 (684MHz)	
Test Point(±1.5)	dB	-20	output TP
NPR of 55db dynamic range @ 204/258 NPR of 55db dynamic range @ 396/492 NPR of 55db dynamic range @ 492/606 NPR of 51db dynamic range @ 684/834	dB	10 8 6 5	
HUM 10A	dB	55	
HUM 15 A	dB	50	
Return Loss	dB	⩾13 (5 – 10 MHz) ⩾15 (10 – 160 MHz) ⩾14 (160 – 684 MHz)	

PRELIMINARY

Station Delay Characteristics (204/258 Split)			
Forward		**Reverse**	
Frequency (MHz)	Delay (ns)	Frequency (MHz)	Delay (ns)
259 to 262	10	10.0 to 13.2	60
265 to 268	8	13.2 to 16.4	22
271 to 274	7	16.4 to 19.6	12
277 to 280	5	184.8 to 191.2	6
		191.2 to 197.6	4
		197.6 to 204.0	7

Station Delay Characteristics (396/492 Split)			
Forward		**Reverse**	
Frequency (MHz)	Delay (ns)	Frequency (MHz)	Delay (ns)
493.25 to 496.83	10	5 to 6.5	60
499.25 to 502.83	8	6.5 to 8	24
505.25 to 508.83	7	8 to 9.5	14
511.25 to 514.83	5	391.5 to 393	5
		393 to 394.5	5
		394.5 to 396	5

Station Delay Characteristics (492/606 Split)			
Forward		**Reverse**	
Frequency (MHz)	Delay (ns)	Frequency (MHz)	Delay (ns)
607.25 to 610.83	10	5 to 6.5	60
613.25 to 616.83	8	6.5 to 8	24
619.25 to 622.83	7	8 to 9.5	14
625.25 to 628.83	5	487.5 to 489	5
		489 to 490.5	5
		490.5 to 492	5

Station Delay Characteristics (684/834 Split)			
Forward		**Reverse**	
Frequency (MHz)	Delay (ns)	Frequency (MHz)	Delay (ns)
835.25 to 838.83	10	5 to 6.5	60
841.25 to 844.83	8	6.5 to 8	24
847.25 to 850.83	7	8 to 9.5	14
853.25 to 856.83	5	679.5 to 681	5
		681 to 682.5	5
		682.5 to 684	5

Unless indicated differently, our specifications reflect typical performance and are referenced to 68°F (20°C). The measurements employed in determining these specifications adhere to the globally recognized SCTE/ANSI standards, when relevant, utilizing standard frequency assignments.

Station Powering Data												
Quantum18 1.8GHz Booster Amplifier	IDC amps		AC Voltage									
	8V		90	85	80	75	70	65	60	55	50	45	40
BA	.46	AC current	0.080	0.080	0.082	0.085	0.087	0.091	0.097	0.103	0.112	0.123	0.138
		Power (W)	4.76	4.74	4.69	4.66	4.66	4.66	4.66	4.65	4.66	4.67	4.75

Powering	Units	Value
Line (Remote) Power Supply Range	VAC	40 to 90
Power Supply Holdup Time	ms(min)	10
Output current range	A	0.1-0.75
Power Consumption (max)	WAC	6 max

Mechanical	Value
Housing Dimensions	7.34 in. x 6.17 in. x 3.28 in. (186.5mm x 156.8mm x 83.4mm)
Weight	3lbs. (1.35kg)
RF Connectors	5/8-24UNEF-2B
Protection Class	IP68

Environmental	Value
Operating Temperature Range (external air ambient)	-40 - 140°F (-40 - 60°C)
Relative Humidity (non-condensing)	5% to 95%

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