

MAXNET® II

Platinum Series

RF & Optical Signal Management

Patented
U.S.# 7,142,414



Passive Products



3RU Active Chassis
(front view)

Broadcast/Narrowcast Combiners:

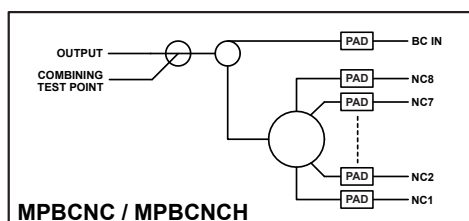
- ▶ Custom RF modules to combine narrowcast service groups together before each forward path transmitter
- ▶ One broadcast (BC) port and up to eight narrowcast (NC) ports to provide more options than you will ever need for assembling the full RF lineup
- ▶ Combine services that today's CCAP™ platforms do not support or too costly to support
- ▶ This device supports a pay-as-you-grow strategy that allows a future access point to add in any other RF content with no disruption or level changes to the existing plant
- ▶ Or use the BC input as a high isolation input for DOCSIS® 3.1 payload to maximize performance with higher order QAM modulation in OFDM channels
- ▶ Up to 24 modules will fit into any 3RU MAXNET® II passive/active chassis (MP3B*), > 250% rack space savings over legacy solutions
- ▶ Front access -12 dB combiner test point. 20 dB transmitter test points do not provide high enough QAM levels to get an accurate MER reading
- ▶ Front access to plug-in locations for pads/EQs
- ▶ High performance MCX connectors



Broadcast/Narrowcast Combiner (MPBCNC) Specifications

SPECIFICATIONS		MPBCNC
MEASUREMENT	FREQUENCY	QA (dB)
INSERTION LOSS BC PORT	5-550 MHz	5 +/- 0.5
	550-750 MHz	5 +/- 0.6
	750-860 MHz	5 +/- 0.8
	860-1002 MHz	5 +/- 1
INSERTION LOSS NC PORTS	5-550 MHz	16.5 +/- 0.5
	550-750 MHz	16.5 +/- 0.6
	750-860 MHz	16.5 +/- 0.8
	860-1002 MHz	16.5 +/- 1
TEST PORT LOSS	5-550 MHz	12 +/- 0.5
	550-750 MHz	12 +/- 0.6
	750-860 MHz	12 +/- 0.8
	860-1002 MHz	12 +/- 1
ISOLATION (Min) PORT-TO-PORT	5-1002 MHz	30
RETURN LOSS (Min)	5-1002 MHz	20
RFI (Min)	5-1002 MHz	100
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)	
HUMIDITY	5-95% (without condensation)	
DIMENSIONS	4.9"H x 0.69"W x 9.4"D (12.45H x 1.75W x 23.88D cm)	
WEIGHT	1.85 lbs (0.84 kg)	

Functional Schematic



Broadcast/Narrowcast Combiner (MPBCNCH) Specifications

SPECIFICATIONS		MPBCNCH ⁽¹⁾		
MEASUREMENT	FREQUENCY	MIN (dB)	NOM (dB)	MAX (dB)
INSERTION LOSS (BC)	5 MHz		5.2	5.5
	50 MHz		5.2	5.5
	550 MHz		5.5	5.8
	870 MHz		5.7	6
	1002 MHz		5.8	6.1
	1218 MHz		5.9	6.2
INSERTION LOSS (NC)	5 MHz		16.7	17
	50 MHz		16.7	17
	550 MHz		17	17.3
	870 MHz		17.2	17.5
	1002 MHz		17.3	17.6
	1218 MHz		17.4	17.7
FLATNESS	50-1218 MHz		< 0.4	< 0.7
TEST PORT LOSS & FLATNESS ⁽²⁾	50-1218 MHz	11	12	13
ISOLATION (Min) NC PORT-TO-NC PORT	50-1218 MHz	30	32	
ISOLATION (Min) NC PORT-TO-BC PORT	50-1218 MHz	35	37	
RETURN LOSS (Min) ANY PORT	5-50 MHz	16	18	
	50-1002 MHz	20	22	
	1002-1218 MHz	18	20	
RFI (Min)	5-1218 MHz	100		
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)			
HUMIDITY	5-95% (without condensation)			
DIMENSIONS	4.9"H x 0.69"W x 9.4"D (12.45H x 1.75W x 23.88D cm)			
WEIGHT	1.85 lbs (0.84 kg)			

NOTES:
(1) Device to device isolation > 70 dB.
(2) Test point is relative to the common.

Ordering Information

Part Number	Description
MPBCNC	Broadcast/Narrowcast Combiner, 12 dB Front Test Port, 1 GHz
MPBCNCH	Broadcast/Narrowcast Combiner, 12 dB Front Test Port, 1.218 GHz

RF & Optical Signal Management

Broadcast/Narrowcast Combiners:

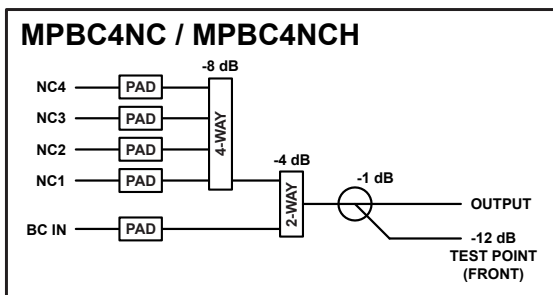
Broadcast/Narrowcast Combiner (MPBC4NC) Specifications

SPECIFICATIONS		MPBC4NC		
MEASUREMENT	FREQUENCY	MIN (dB)	TYP (dB)	MAX (dB)
INSERTION LOSS, BC IN	50 MHz	4.5	5	5.5
	1002 MHz	5	5.5	6
	Linear Deviation*		0.5	
INSERTION LOSS, NC IN	50 MHz	12.5	13	13.5
	1002 MHz	12	13	14
	Linear Deviation*		0.7	
RETURN LOSS	50-1002 MHz	18	20	
ISOLATION, NC-NC INPUT		28	30	
ISOLATION, NC-BC INPUT		35	38	
TAP LOSS, RELATIVE TO OUT		-13	-12	-11
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)			
HUMIDITY	5-95% (without condensation)			
DIMENSIONS	4.9"H x 0.69"W x 9.4"D (12.45H x 1.75W x 23.88D cm)			
WEIGHT	1.85 lbs (0.84 kg)			
NOTES:				
* Max. deviation from a linear trend line drawn between typical loss at 50 MHz and 1002 MHz.				
Device to device isolation > 75 dB.				

Broadcast/Narrowcast Combiner (MPBC4NCH) Specifications



Functional Schematic



SPECIFICATIONS		MPBC4NCH ⁽¹⁾		
MEASUREMENT	FREQUENCY	MIN (dB)	NOM (dB)	MAX (dB)
INSERTION LOSS SINGLE HI-ISO INPUT PORT (BC/H)	5 MHz		5.2	5.5
	50 MHz		5.2	5.5
	550 MHz		5.5	5.8
	870 MHz		5.7	6
	1002 MHz		5.8	6.1
	1218 MHz		5.9	6.2
INSERTION LOSS NORMAL INPUT PORTS (x4)	5 MHz		13.2	13.5
	50 MHz		13.2	13.5
	550 MHz		13.5	13.8
	870 MHz		13.7	14
	1002 MHz		13.8	14.1
	1218 MHz		14	14.3
FLATNESS	50-1218 MHz		< 0.4	< 0.8
TEST PORT LOSS & FLATNESS ⁽²⁾	50-1218 MHz	11	12	13
ISOLATION BETWEEN NORMAL PORTS	50-1218 MHz	30	32	
ISOLATION HI-ISO TO NORMAL PORTS	50-1218 MHz	34	37	
RETURN LOSS (Min) ANY PORT	5-50 MHz	16	18	
	50-1218 MHz	18	20	
RFI (Min)	5-1218 MHz	100		
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)			
HUMIDITY	5-95% (without condensation)			
DIMENSIONS	4.9"H x 0.69"W x 9.4"D (12.45H x 1.75W x 23.88D cm)			
WEIGHT	1.85 lbs (0.84 kg)			
NOTES:				
(1) Device to device isolation > 70 dB.				
(2) Test point is relative to the common.				

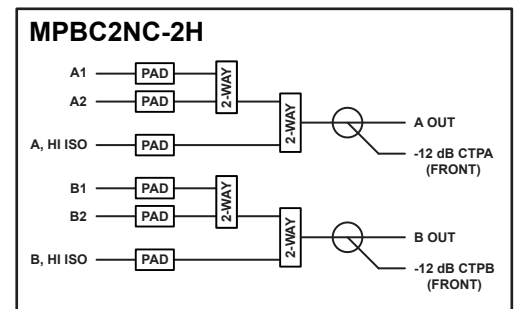
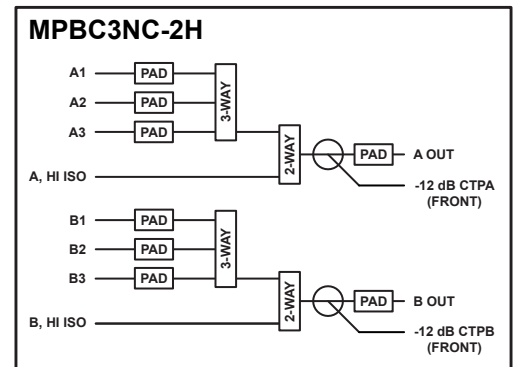
Broadcast/Narrowcast Combiners:

Broadcast/Narrowcast Combiner (MPBC3NC-2H & MPBC2NC-2H) Specifications

SPECIFICATIONS		MPBC3NC-2H ⁽¹⁾			MPBC2NC-2H ⁽¹⁾		
MEASUREMENT	FREQUENCY	MIN (dB)	NOM (dB)	MAX (dB)	MIN (dB)	NOM (dB)	MAX (dB)
INSERTION LOSS SINGLE HI-ISO INPUT PORT (HI)	5 MHz		5	5.5		5	5.5
	50 MHz		5	5.5		5	5.5
	550 MHz		5.5	6		5.5	6
	870 MHz		5.9	6.4		5.9	6.4
	1002 MHz		6	6.5		6	6.5
INSERTION LOSS NORMAL INPUT PORTS	5 MHz	11.5	11.5	11.5	7.5	7.5	8
	50 MHz	11.5	11.5	11.5	7.6	7.6	8.1
	550 MHz	11.9	11.9	11.9	8.3	8.3	8.8
	870 MHz	12.1	12.2	12.2	8.8	8.8	9.3
	1002 MHz	12.2	12.8	12.8	9	9	9.5
FLATNESS	50-1218 MHz		< 0.4	< 0.8		< 0.4	< 0.7
	TEST PORT LOSS & FLATNESS ⁽²⁾	50-1218 MHz	11	12	13	11	12
ISOLATION BETWEEN NORMAL PORTS	50-1218 MHz	28	32		28	30	
ISOLATION HI-ISO TO NORMAL PORTS	50-1218 MHz	32	35		32	35	
RETURN LOSS (Min) ANY PORT	5-50 MHz	16	18		16	18	
	50-1002 MHz	20	22		20	22	
	1002-1218 MHz	18	20		18	20	
RFI (Min)	5-1218 MHz	100			100		
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)						
HUMIDITY	5-95% (without condensation)						
DIMENSIONS	4.9"H x 0.69"W x 9.4"D (12.45H x 1.75W x 23.88D cm)						
WEIGHT	1.85 lbs (0.84 kg)						
NOTES:							
(1) Specification with all unused ports terminated.							
(2) Test point is relative to the common.							



Functional Schematics



Ordering Information

Part Number	Description
MPBC4NC	Broadcast/Narrowcast Combiner, 4 NC Inputs, MCX Connectors, 1 GHz
MPBC4NCH	Broadcast/Narrowcast Combiner, 4 NC Inputs, MCX Connectors, 1.218 GHz
MPBC3NC-2H	Dual Broadcast/Narrowcast Combiner, 3 NC Inputs, MCX Connectors, 1.218 GHz
MPBC2NC-2H	Dual Broadcast/Narrowcast Combiner, 2 NC Inputs, MCX Connectors, 1.218 GHz

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