

## CHP Max5000™ 1 GHz 3-Input Forward Path RF Amplifier (CHP-GAMP3) Technical Specification

## **Specifications**

Ref Width, MHz           Broadcast (BC) Port (Narrowast (NC) Ports, NC1 and NC2 (NC) 1002         400 to 1002           Response Flatness, typ., dB (RC), NC2 (NC) (NC) (NC) (NC) (NC) (NC) (NC) (NC)				
Broadcast (BC) Port Narrowcast (NC) Ports, NC1 and NC2  Response Flatness, typ., dB BC, NC1, NC2  Response Flitnmax., dB BC Port at nominal tilt, NC1, NC2  Return Loss for all four ports, min., dB BC Port at nominal tilt, NC1, NC2  Return Loss for all four ports, min., dB BC Port at nominal tilt, NC1, NC2  Return Loss for all four ports, min., dB  Gain, Fixed (Default), dB (Note 1)  BC port NC1 and NC2 ports  Adjustable Range, dB (Note 1)  BC port NC1 port BC Port Gain − 13 ± 3 (0.25dB steps)  NC1 port BC Port Gain − 13 ± 3 (0.25dB steps)  NC1 port BC Port Gain − 13 ± 3 (0.25dB steps)  NC1 port BC Port Gain − 13 ± 3 (0.25dB steps)  RF Output Testpoint, dB (Note 2)  Port-to-port Isolation, min., dB BC to NC1, BC to NC2 NC1 to BC, NC2 to BC NC1 to BC, NC2 to NC1 Back Isolation, output port to any input port BC Back Isolation, output port to any input port BC Back Isolation, output port to any input port BC B	RF			
Narrowcast (NC) Ports, NC1 and NC2         400 to 1002           Response Flatness, typ., dB BC, NC1, NC2         ±0.5           Response Tilt, max., dB BC Port at nominal tilt, NC1, NC2         ±0.5           Return Loss for all four ports, min., dB BC Port at nominal tilt, NC1, NC2         ±0.5           Return Loss for all four ports, min., dB BC Port at nominal tilt, NC1, NC2         ±0.5           BC port at nominal tilt, NC1, NC2         ±0.5           Return Loss for all four ports, min., dB BC Port at nominal tilt, NC1, NC2         ±0.5           Return Loss for all four ports, min., dB BC Port at nominal tilt, NC1, NC2 to NC2 and NC2 ports         40           MC1 and NC2 ports         5           MC2 port at nominal tilt, NC1, NC2 to NC2 and NC2 ports and NC2 port and NC2 ports and NC2 port and NC2 ports	Bandwidth, MHz			
Response Flatness, typ., dB         BC, NC1, NC2         ±0.5           Response Tilt, max., dB         ±0.5           BC Port at nominal tilt, NC1, NC2         ±0.5           Return Loss for all four ports, min., dB         16           Gain, Fixed (Default), dB (Note 1)         ***           BC port         17           NC1 and NC2 ports         4           Gain, Adjustable Range, dB (Note 1)         ***           MC1 port         BC Port Gain − 13 ± 3 (0.25 dB steps)           NC1 port         NC1 port B C Port Gain − 13 ± 3 (0.25 dB steps)           NC2 port         NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC2 port B C Port Gain − 13 ± 3 (0.25 dB steps)         ***           NC1 port I solation, min., dB         ***           B C to NC1, BC to NC2         ***           NC1 to BC, NC2 to BC         ***           NC1 to NC2, NC	Broadcast (BC) Port	50 to 1002		
BC, NC1, NC2  Response Tilt, max., dB BC Port at nominal tilt, NC1, NC2  Return Loss for all four ports, min., dB  BC port NC1 and NC2 ports  BC port NC1 and NC2 ports  BC port NC1 and NC2 ports  BC port NC1 port BC Port 14 to 20dB (0.25 dB steps)  NC1 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC3 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC4 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC5 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC1 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC1 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC1 port Isolation, min., dB  BC to NC1, BC to NC2 NC1 to SC, NC2 to SC  NC1 to NC2, NC2 to SC  Sat 16 dB gain difference  NC1 to NC2, NC2 to NC1  Back Isolation, output port to any input port  60  Noise Figure for Broadcast Port, typ., dB  Rated Input Level  Performance Characteristic (Note 3)  Erofformance Characteristic (Note 3)  Erofformance Characteristic (Note 3)  Composite Second Order (CSO), dBc  -85  Composite Second Order (CSO), dBc  -74  CIN, dBC	Narrowcast (NC) Ports, NC1 and NC2	400 to 1002		
Response Tilt, max., dB BC Port at nominal tilt, NC1, NC2	Response Flatness, typ., dB			
BC Port at nominal tilt, NC1, NC2 Return Loss for all four ports, min., dB Gain, Fixed (Default), dB (Note 1) BC port NC1 and NC2 ports  Adjustable Range, dB (Note 1)  BC port Gain - 13 ± 3 (0.25 dB steps) NC1 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC3 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC4 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC5 port BC Port Gain - 13 ± 3 (0.25 dB steps) NC1 port Testpoint, dB (Note 2) Port-to-port Isolation, min., dB BC to NC1, BC to NC2 NC1 to BC, NC2 to NC2 NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to NC2, NC2 to NC1 Back Isolation, output port to any input port Noise Figure for Broadcast Port, typ., dB B at 0 dB tilt over the entire gain control range Rated Input Level 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports SchBmV/QAM channel maximum for digital loading at NC1 and NC2 ports Composite Triple Beat (CTB), dBc Composite Second Order (CSO), dBc CNPosite Second Order (CSO), dBc CN	BC, NC1, NC2	±0.5		
Return Loss for all four ports, min., dB Gain, Fixed (Default), dB (Note 1)  BC port NC1 and NC2 ports  Adjustable Range, dB (Note 1)  BC port RFO utput Testpoint, dB (Note 2)  Port-to-port Isolation, min., dB BC to NC1, BC to NC2 NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to SC, NC2 to NC1 Back Isolation, output port to any input port Back Isolation, output port to any input port Back Isolation, output port to any input port BC port Back Isolation and inference NC1 to NC2, NC2 to NC1 BC port and inference NC3 to SC, NC2 to NC1 BC port and inference Ad ad at -16dB gain difference NC1 to NC2, NC2 to NC1 BC port and inference NC1 to NC2, NC2 to NC1 BC port and inference NC3 to NC4, NC5 to NC5 AS at 0dB tilt over the entire gain control range Rated Input Level  Port-mance Characteristic (Note 3)  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc -74 CIN, dBc -70 -70 -70 -70 -70 -70 -70 -70 -70 -70	Response Tilt, max., dB			
Gain, Fixed (Default), dB (Note 1) BC port NC1 and NC2 ports 4  Gain, Adjustable Range, dB (Note 1)  BC port NC1 port BC port 14 to 20dB (0.25dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25dB steps) NC2 port BC Port Gain - 13 ± 3 (0.25dB steps) NC3 port BC Port Gain - 13 ± 3 (0.25dB steps) NC4 port BC Port Gain - 13 ± 3 (0.25dB steps) NC5 port BC Port Gain - 13 ± 3 (0.25dB steps) NC5 port BC Port Gain - 13 ± 3 (0.25dB steps) NC6 port BC Port Gain - 13 ± 3 (0.25dB steps) NC7 port BC Port Gain - 13 ± 3 (0.25dB steps) NC8 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port BC Port Gain - 13 ± 3 (0.25dB steps) NC9 port Gain - 13 ± 3	BC Port at nominal tilt, NC1, NC2	±0.5		
BC port   NC1 and NC2 ports   4	Return Loss for all four ports, min., dB	16		
NC1 and NC2 ports  Adjustable Range, dB (Note 1)  BC port 14 to 20dB (0.25 dB steps)  NC1 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC3 port bc port Isolation, min, dB Isolation, min, dB  BC to NC1, BC to NC2  NC1 to BC, NC2 to BC  NC1 to BC, NC2 to BC  NC1 to BC, NC2 to BC  NC1 to NC2, NC2 to NC1  Back Isolation, output port to any input port bc Sigure for Broadcast Port, typ., dB  Rated Input Level  Noise Figure for Broadcast Port, typ., dB  Rated Input Level  Performance Characteristic (Note 3)  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc  -85  Composite Triple Beat (CTB), dBc  -74  CIN, dBc  Pack Isolation and NC2 ports  Back Isolation and NC2 ports  Pack Isolation and NC2 ports  Pack Isolation and NC2 ports  Performance Characteristic (Note 3)	Gain, Fixed (Default), dB (Note 1)			
Gain, Adjustable Range, dB (Note 1)  BC port 14 to 20dB (0.25dB steps)  NC1 port BC POrt Gain - 13 ± 3 (0.25dB steps)  NC2 port BC PORT Gain - 13 ± 3 (0.25dB steps)  NC2 port BC PORT Gain - 13 ± 3 (0.25dB steps)  NC3 in 0.5 dB steps, BC port only  RF Output Testpoint, dB (Note 2)  PORT-to-port Isolation, min, dB  BC to NC1, BC to NC2  NC1 to BC, NC2 to BC  NC1 to BC, NC2 to BC  NC1 to BC, NC2 to BC  NC1 to NC2, NC2 to NC1  Back Isolation, output port to any input port  BC at 3 dB stilt over the entire gain control range  Rated Input Level  POFFormance Characteristic (Note 3)  POFFormance Characteristic (Note 3)  POFFOrmance Characteristic (Note 3)  POFFOrmance Characteristic (Note 3)  POFFORMAN Channel maximum for digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR DIGITAL MAXIMUM FOR digital loading at NC1 and NC2 ports  POFFORMAN CHANNEL MAXIMUM FOR DIGITAL MAXIMUM FOR DIGITA	BC port	17		
BC port 14 to 20dB (0.25dB steps)  NC1 port BC Port Gain - 13 ± 3 (0.25dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25dB steps)  Adjustable EQ Tilt (50 to 1002MHz, dB) 0 to 3 in 0.5 dB steps, BC port only  RF Output Testpoint, dB (Note 2) -20 ± 0.5 @ 25°C; -20 ± 1.0 from 0 to 50°C  Port-to-port Isolation, min., dB  BC to NC1, BC to NC2  NC1 to BC, NC2 to BC  NC1 to BC, NC2 to BC  NC1 to NC2, NC2 to NC1  Back Isolation, output port to any input port  60  Noise Figure for Broadcast Port, typ., dB  Rated Input Level 15dBmV/channel maximum for analog loading at BC port 25dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc  Composite Second Order (CSO), dBc  CIN, dBc  RO1 to RC2 (CSO), dBc  -85  Composite Second Order (CSO), dBc  -74  CIN, dBc	NC1 and NC2 ports	4		
NC1 port BC Port Gain - 13 ± 3 (0.25 dB steps)  NC2 port BC Port Gain - 13 ± 3 (0.25 dB steps)  Adjustable EQ Tilt (50 to 1002 MHz, dB) 0 to 3 in 0.5 dB steps, BC port only  RF Output Testpoint, dB (Note 2) -20 ± 0.5 @ 25°C; -20 ± 1.0 from 0 to 50°C  Port-to-port Isolation, min., dB  BC to NC1, BC to NC2 50  NC1 to BC, NC2 to BC 42 at -10 dB gain difference  NC1 to BC, NC2 to BC 48 at -16 dB gain difference  NC1 to NC2, NC2 to NC1 50  Back Isolation, output port to any input port 60  Noise Figure for Broadcast Port, typ., dB 8 at 0 dB tilt over the entire gain control range  Rated Input Level 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc -85  Composite Second Order (CSO), dBc -74  CIN, dBc -70	Gain, Adjustable Range, dB (Note 1)		Gain Range	
NC2 portBC Port Gain - 13 ± 3 (0.25 dB steps)Adjustable EQ Tilt (50 to 1002 MHz, dB)0 to 3 in 0.5 dB steps, BC port onlyRF Output Testpoint, dB (Note 2)-20 ± 0.5 @ 25° C - 20 ± 1.0 from 0 to 50° CPort-to-port Isolation, min., dB50BC to NC1, BC to NC250NC1 to BC, NC2 to BC42 at -10 dB gain differenceNC1 to NC2, NC2 to NC150Back Isolation, output port to any input port50Back Isolation, output port to any input port60Noise Figure for Broadcast Port, typ., dB8 at 0 dB tilt over the entire gain control rangeRated Input Level15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM thannel maximum for digital loading at NC1 and NC2 portsPerformance Characteristic (Note 3)-85Composite Triple Beat (CTB), dBc-85Composite Second Order (CSO), dBc-74CIN, dBc-70		BC port	14 to 20 dB (0.25 dB steps)	
Adjustable EQ Tilt (50 to 1002 MHz, dB)  RF Output Testpoint, dB (Note 2)  Port-to-port Isolation, min., dB  BC to NC1, BC to NC2  NC1 to BC, NC2 to BC  NC1 to BC, NC2 to BC  NC1 to NC2, NC2 to NC1  Back Isolation, output port to any input port  BC to NC1, BC or Broadcast Port, typ., dB  Rated Input Level  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc  Composite Second Order (CSO), dBc  CIN, dBc  Oto 3 in 0.5 dB steps, BC port only  -20 ± 0.5 @ 25°C; -20 ± 1.0 from 0 to 50°C  Port to NC 50°C  A2 at -10 dB gain difference  42 at -10 dB gain difference  48 at -16 dB gain difference  60  Noise Figure for Broadcast Port, typ., dB  8 at 0 dB tilt over the entire gain control range  15 dBmV/channel maximum for analog loading at BC port  25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3)  Composite Second Order (CSO), dBc  -74  CIN, dBc		NC1 port	BC Port Gain - 13 ± 3 (0.25 dB steps)	
RF Output Testpoint, dB (Note 2) Port-to-port Isolation, min., dB BC to NC1, BC to NC2 NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to NC2, NC2 to NC1 Back Isolation, output port to any input port Noise Figure for Broadcast Port, typ., dB Rated Input Level Performance Characteristic (Note 3) Composite Triple Beat (CTB), dBc CIN, dBc CIN, dBc CIN, dBc CIN, dBc Composite Second Order (CSO), dBc CIN, dBc Composite Second Order (CSO), dBc COMPOSITE SON SON COME SON COMPOSITE SON COME COMPOSITE SON COME COMPOSITE TITLE SON COME COMPOSITE SON COME COMPOSITE TITLE SON COME COMPOSITE TITLE SON COME COMPOSITE SON COME COMPOSITE SON COME COMPOSITE TITLE SON COME COMPOSITE SON COME COMPOSITE TITLE SON COME COMPOSITE SON COME COMPOSITE TITLE SON COME COMPOSITE TITLE SON COME COMPOSITE SON COMPOSITE SON COME COMPOSITE SON COMPOSITE SON COME COMPOSITE SON COMPOSIT		NC2 port	BC Port Gain - 13 ± 3 (0.25 dB steps)	
Port-to-port Isolation, min., dB BC to NC1, BC to NC2 NC1 to BC, NC2 to BC A2 at -10dB gain difference NC1 to BC, NC2 to BC A8 at -16dB gain difference NC1 to NC2, NC2 to NC1 Back Isolation, output port to any input port Back Isolation difference Back Isolation diff	Adjustable EQ Tilt (50 to 1002 MHz, dB)	0 to 3 in 0.5 dB steps, BC port only		
BC to NC1, BC to NC2 NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to NC2, NC2 to BC NC1 to NC2, NC2 to NC1 Back Isolation, output port to any input port Back Isolation, output port to any input port Noise Figure for Broadcast Port, typ., dB Rated Input Level 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3) Composite Triple Beat (CTB), dBc Composite Second Order (CSO), dBc -74 CIN, dBc -70	RF Output Testpoint, dB (Note 2)	$-20 \pm 0.5$ @ $25^{\circ}$ C; $-20 \pm 1.0$ from 0 to $50^{\circ}$ C		
NC1 to BC, NC2 to BC NC1 to BC, NC2 to BC NC1 to NC2, NC2 to NC1 Back Isolation, output port to any input port Noise Figure for Broadcast Port, typ., dB Rated Input Level Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc Composite Second Order (CSO), dBc CIN, dBc  42 at -10dB gain difference 48 at -16dB gain difference 60 8 at 0 dB tilt over the entire gain control range 8 at 0 dB tilt over the entire gain control range 8 at 0 dB tilt over the entire gain control range 8 at 0 dB tilt over the entire gain control range 9 at 0 dB tilt over the entire gain control range 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  -85 Composite Second Order (CSO), dBc -74 CIN, dBc	Port-to-port Isolation, min., dB			
NC1 to BC, NC2 to BC  NC1 to NC2, NC2 to NC1  Back Isolation, output port to any input port  Noise Figure for Broadcast Port, typ., dB  Rated Input Level  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc  Composite Second Order (CSO), dBc  CIN, dBc  48 at -16dB gain difference  50  8 at 0 dB tilt over the entire gain control range  8 at 0 dB tilt over the entire gain control range  8 at 0 dB tilt over the entire gain control range  8 at 0 dB tilt over the entire gain control range  8 at 0 dB tilt over the entire gain control range  8 at 0 dB tilt over the entire gain control range  8 at 0 dB tilt over the entire gain control range  7 5 dBmV/channel maximum for analog loading at BC port  25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  -85  Composite Second Order (CSO), dBc  -74  CIN, dBc	BC to NC1, BC to NC2	50		
NC1 to NC2, NC2 to NC1 Back Isolation, output port to any input port Noise Figure for Broadcast Port, typ., dB Rated Input Level 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3) Composite Triple Beat (CTB), dBc Composite Second Order (CSO), dBc CIN, dBc -74 -70	NC1 to BC, NC2 to BC	42 at –10dB gain difference		
Back Isolation, output port to any input port Noise Figure for Broadcast Port, typ., dB Rated Input Level Rated Input Level 25 dBmV/QAM channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3) Composite Triple Beat (CTB), dBc Composite Second Order (CSO), dBc CIN, dBc -74 -70	NC1 to BC, NC2 to BC	48 at –16dB gain difference		
Noise Figure for Broadcast Port, typ., dB Rated Input Level 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3) Composite Triple Beat (CTB), dBc Composite Second Order (CSO), dBc CIN, dBc -74 -70	NC1 to NC2, NC2 to NC1	50		
Rated Input Level 15 dBmV/channel maximum for analog loading at BC port 25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc -85  Composite Second Order (CSO), dBc -74  CIN, dBc -70	Back Isolation, output port to any input port	60		
25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports  Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc -85  Composite Second Order (CSO), dBc -74  CIN, dBc -70	Noise Figure for Broadcast Port, typ., dB	8 at 0 dB tilt over the entire gain control range		
Performance Characteristic (Note 3)  Composite Triple Beat (CTB), dBc -85  Composite Second Order (CSO), dBc -74  CIN, dBc -70	Rated Input Level	15 dBmV/channel maximum for analog loading at BC port		
Composite Triple Beat (CTB), dBc -85 Composite Second Order (CSO), dBc -74 CIN, dBc -70		25 dBmV/QAM channel maximum for digital loading at NC1 and NC2 ports		
Composite Second Order (CSO), dBc -74 CIN, dBc -70	<b>Performance Characteristic</b> (Note 3)			
CIN, dBc -70	Composite Triple Beat (CTB), dBc	-85		
	Composite Second Order (CSO), dBc	-74		
XMOD, dBc –79	CIN, dBc	-70		
	XMOD, dBc	-79		

## **Technical Specifications**