

# CHP Max Headend Optics Platform

## CHP-GAMP3

1 GHz 3-Input Forward Path  
RF Amplifier

### FEATURES

- Single broadcast input and dual narrowcast inputs supports layered narrowcast service implementation, such as SDV, VOD, and HSD
- Superior reverse port-to-port isolation enables the combination of multiple narrowcast sources to reduce external signal combining and simplify cable wiring
- Broadcast and narrowcast gains are GUI adjustable to allow for better user control and configuration
- Tunable equalization for broadcast input allows for more precise alignments of the optical transmitters
- Reduced signal combining and cable wiring complexity



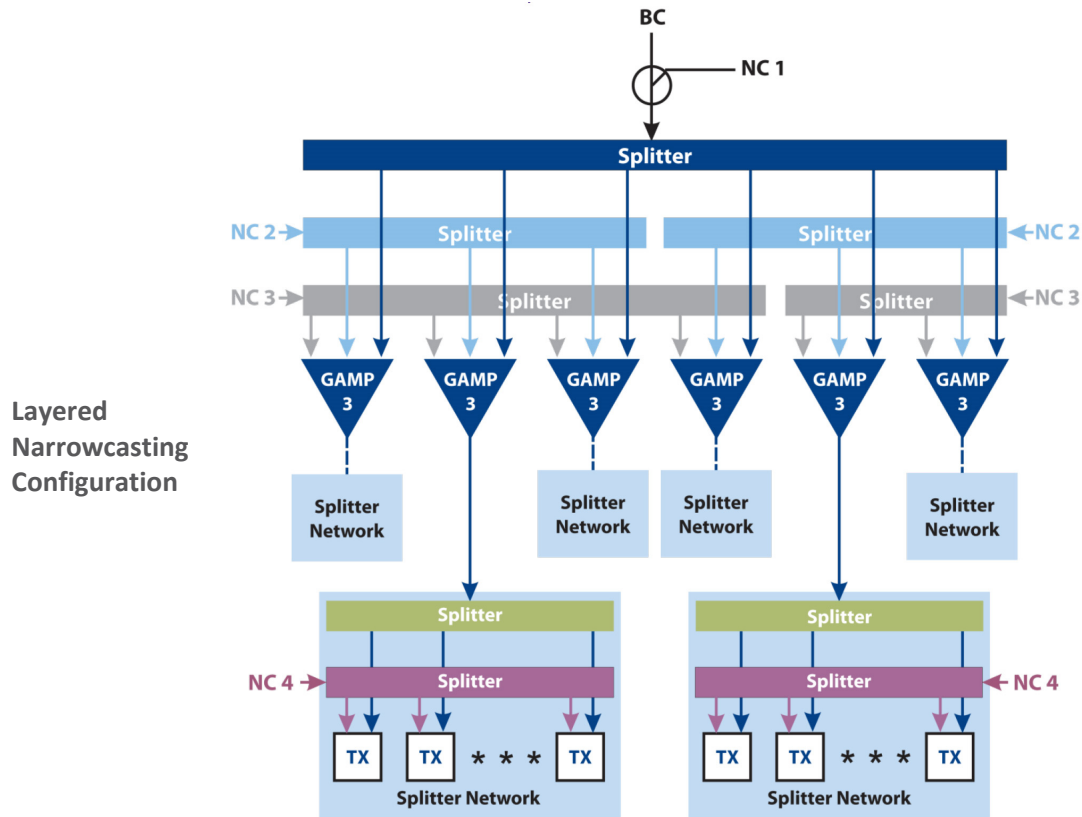
### PRODUCT OVERVIEW

The hot-swappable ARRIS CHP Max5000® 1 GHz 3-Input Forward Path RF Amplifier provides superior RF signal amplification and narrowcast layering in both headends and hubs. Featuring an innovative 3 rear-panel RF inputs (1 broadcast and 2 narrowcast), the amplifier supports SDV, VOD, HSD, and other layered services. In addition, the amplifier is an ideal, low-cost way for system operators to overcome the network losses—with minimal degradation to system performance—typically associated with combining and splitting networks in HFC headends/hubs.

Up to 10 CHP Max5000 amplifiers can reside in the 2RU CHP Max5000 chassis. In addition to the 3 RF inputs mentioned above, the amplifier's rear panel also includes one RF output connector. A front panel RF test point provides a sample of the RF output, reduced by 20 dB.

## APPLICATIONS

In the layered narrowcasting configuration depicted below, a single broadcast signal combines with a narrowcast signal and two additional narrowcast signals are split into six CHP Max5000 3-input RF Amplifiers.



### RELATED PRODUCTS

CHP Chassis	Optical Patch Cords
Power Supplies	Optical Passives
Control Module	Installation Services

**SPECIFICATIONS**

**RF**

Bandwidth	
Broadcast (BC) Port	50 to 1002 MHz
Narrowcast (NC) Ports, NC1 and NC2	400 to 1002 MHz
Response Flatness, typ.	
BC, NC1, NC2	± 0.5 dB
Response Tilt, max.	
BC Port at nominal tilt, NC1, NC2	± 0.5 dB
Return Loss for all four ports, min.	
	16 dB
Gain, Fixed (Default), <sup>1</sup>	
BC port	17 dB
NC1 and NC2 ports	4 dB
Gain, Adjustable Range, <sup>1</sup>	
BC port	14 to 20 dB (0.25 dB steps)
NC1 port	BC Port Gain – 13 ± 3 dB (0.25 dB steps)
NC2 port	BC Port Gain – 13 ± 3 dB (0.25 dB steps)
Adjustable EQ Tilt (50 to 1002 MHz)	
	0 to 3 dB in 0.5 dB steps, BC port only
RF Output Test Point <sup>2</sup>	
	-20 ± 0.5 dB @ 25° C; -20 ± 1.0 dB from 0 to 50° C
Port-to-port Isolation, min.	
BC to NC1, BC to NC2	50 dB
NC1 to BC, NC2 to BC	42 dB at -10 dB gain difference
NC1 to BC, NC2 to BC	48 dB at -16 dB gain difference
NC1 to NC2, NC2 to NC1	50 dB
Back Isolation, output port to any input port	60 dB
Noise Figure for Broadcast Port, typ.	
	8 dB 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

## SPECIFICATIONS (CONTINUED)

### Performance Characteristic <sup>3</sup>

Composite Triple Beat (CTB)	-85 dBc
Composite Second Order (CSO)	-74 dBc
CIN	-70 dBc
XMOD	-79 dBc

### Powering

Power Consumption, max.	12.5 W
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### Mechanical

RF Connectors	F-type
Dimensions (W x H x D) <sup>4</sup>	1.25 x 3.4 x 18.5 in. (3.2 x 8.7 x 47.0) cm
Weight	2.75 lbs (1.24) kg

### Environmental

Operating Temperature <sup>5</sup>	0 to 50 °C (32 to 122) ° F
Storage Temperature	-40 to 70 °C (-40 to 158) ° F
Operating Humidity, nonconducting, max.	85%
Storage Humidity, noncondensing, max.	95%

### Notes:

- Default gain is 17 dB for BC port and is 4 dB for NC1 and NC2 ports in Preset Manual mode. Using the GUI in Custom Manual mode, the BC port gain adjustment range is 14 to 20 dB in 0.25 dB steps and the NC1 and NC2 port gain adjustment range is -16 to -10 dB in 0.25 dB steps relative to the BC port gain. Adjusting the BC port gain also affects the gain of the narrowcast ports (NC1 and NC2).
- Relative to output port.
- Specifications obtained using 79 NTSC CW channels (50 to 550 MHz) with an input of 15 dBmV/channel applied to the input of the BC port, and full digital loading (550 to 1002 MHz) with 25 dBmV/channel maximum applied to one of the NC ports. At the output of the CHP-GAMP3, the level per digital channel is 6 dB lower than the analog channels. The gain for the BC port is 20 dB and the NC gain difference is -16 dB (NC gain is 4 dB). The tilt is 0 dB.
- Includes handles and connectors.
- Temperature measured at amplifier module's air inlet.

## ORDERING INFORMATION

				1	2	3	4	5
C	H	P	-	G	A	M	P	3

1-5	Type of Module
GAMP3	1 GHz 3-input forward path RF amplifier

**Note:** Specifications are subject to change without notice.

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## Customer Care

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