

CHP Max Headend Optics Platform

CHP CORWave® 4 Quad Density
1.2 GHz C-Band DWDM modular
Forward Transmitters

FEATURES

- Quad Density modular transmitter design
- 40 transmitters per CHP chassis for 20TX/RU density
- 1.2 GHz full spectrum supporting DOCSIS® 3.1 upgrades
- Optimize headend and hub efficiencies with industry leading density and low power consumption
- Support multiple optical architectures including full spectrum and RFoG
- Internal Electronic Slope Adjustment to compensate for headend combining and cable loss at high frequencies
- Configure, monitor, and manage with CORView™ Element Management System



PRODUCT OVERVIEW

The ARRIS CHP CORWave® 4 1.2 GHz Quad Density Forward Transmitter provides significant operational and system benefits. Featuring the highest density among comparable forward transmitters in the industry, the CORWave 4 enables operators to decrease their headend footprint and reduce powering costs. In addition, the CORWave 4's industry-leading Modular Quad Density, which incorporates four transmitters in a single-wide application host module, allows cable operators to add other application modules for new capacity and new services without increasing their current footprint. The CORWave 4's superior density also supports a 75% decrease in headend chassis footprint by decreasing the number of physical devices operators need for forward path transmission, providing additional cost and power savings.

Reduce Complexity and Headend Space

The CHP CORWave 4 Quad Density is optimized for partial analog with a full compliment of digital channel loading. It will also support a full digital load for the entire RF spectrum. Available with front fiber connections, the CHP CORWave 4 is only compatible with all current CHP chassis. It features four sub-modules that are installed into a CHP single wide host carrier for maximum flexibility of configuration and wavelength combinations. In addition, the CORWave 4 multiwavelength plan allows operators to reclaim fiber by leveraging their existing fiber infrastructures for up to 16 multiplexed C-band wavelengths with a long reach over a single fiber.

The CORWave 4 also allows for lower RF input, which requires less amplification in the headend, reducing space and power consumption.

Add Value to Existing Assets

Operators with a large base of active CHP Headend Optics Platforms can transition seamlessly to CHP CORWave 4 Quad Density. By doing so, they can deploy new, revenue-generating services, reduce complexity for existing deployments, and transition easily to new CHP installs. For added operational value, operators can monitor CORWave 4 transmitters via the CORView Element Management System, which provides an intuitive and user-friendly interface for security, discovery, configuration, and inventory functions.

The CORWave 4 also adds Internal Electronic Slope Adjustment to compensate for headend combining and cable loss at high frequency, especially when loading moves to 1.2 GHz.

OPTIONS

- CHP CORWave® quad density multiwavelength transmitter modules

- 4 port host module

- CORView Element Management System

- Blank Sub Module for Thermal management



SUB MODULE SPECIFICATIONS

Transmitter Sub Module

Optical

Output Power	10 dBm typical
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RF

Bandwidth Operational Range	52 to 1218 MHz
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Response flatness, P-V, typ./max.	1.0/2.0 dB
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RF Input Test Point	-20 ± 1.0 dB
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Mechanical

Test Point connector type	MCX (Adaptor to F cable supplied with Host Module)
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Optical Connector	SC/APC (8 degrees)
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Dimensions (W x H x D) in (cm) (Note 1)	1.41 x 0.56 x 9.1 in (3.58 x 1.42 x 23.11 cm)
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Weight, Dual Density	Less than 1 lb (0.45 kg)
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Power Consumption

Single Module	5 W typical
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Environmental

Storage Temperature	-40° to 158°F (-40° to 70°C)
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Transmitter Blank Module (Note 8)

Dimensions (W x H x D) in (cm)	1.41 x 0.56 x 9.1 in (3.58 x 1.42 x 23.11 cm)
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Weight, Dual Density	0.40 lbs (0.18 kg)
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Single Blank Module Power Consumption	0 Watts
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HOST SPECIFICATIONS

4 Port Host Module

RF

Bandwidth Operational Range	52 to 1218 MHz
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Response flatness, P-V, typ./max.	1.0/2.0 dB
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Input Return Loss	16 dB
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Port-to-Port Isolation	65 dB
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Mechanical

RF Ports (4)	F type
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Dimensions (W x H x D) in (cm) (Note 1)	1.25 x 3.4 x 18.5 in (3.2 x 8.7 x 47.0 cm)
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Weight, Host Only	2.35 lbs (1.07 kg)
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Environmental

Storage Temperature	-40° to 158°F (-40° to 70°C)
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Power Consumption

4 Port Module	2 W typical
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GENERAL SOLUTION SPECIFICATIONS

Quad Transmitter (4 transmitters with 4 port host module)

Optical	
Output Power per TX	10 dBm typical
RF	
Bandwidth Operational Range	52 to 1218 MHz
Response flatness, P-V, typ./max.	1.0/2.0 dB
RF Input Test Point	-20 ± 1.0 dB
Equalizer Slope Range	0 to 2 dB in 1 dB steps
Mechanical	
Test Point connector type	MCX
Optical Connector	SC/APC (8 degrees)
Power Consumption	
Total Power Consumption	22 W typical, 26 W max
Dimensions (Note 1)	
	1.25 x 3.4 x 18.5 in (3.2 x 8.7 x 47.0 cm)
Weight	
	4 lbs (1.81 kg)
Environmental	
Operating Temperature (Note 2)	32° to 122°F (0° to 50°C)
Storage Temperature	-40° to 158° F (-40° to 70°C)
Humidity	95% non-condensing, max

RFOG Application

SBS Limit	20 dBm (20 km fiber, Note 9)
Channel Loading	190 ITU-T J.83 Annex B QAM 256 channels, 54-1218 MHz

HFC Application

RF	
Channel Loading	30 NTSC Analog channels from 55.25 MHz to 247.2625 MHz, 124 ITU-T J.83 Annex B QAM 256 channels (6 dB below analog) to 1002 MHz 154 ITU-T J.83 Annex B QAM 256 channels, 54-1002 MHz 190 ITU-T J.83 Annex B QAM 256 channels, 54-1218 MHz Note: Please contact your sales representative for higher analog channel loading count.
Nominal Input RF power	13 dBmV for 30 NTSC Analog channels from 55.25 MHz to 247.2625 MHz, 124 ITU-T J.83 Annex B QAM 256 channels (6 dB below analog) to 1002 MHz 9 dBmV for 155 ITU-T J.83 Annex B QAM 256 channels, 54-1002 MHz 7 dBmV for 190 ITU-T J.83 Annex B QAM 256 channels, 54-1218 MHz
Minimum Input RF power	8 dBmV for 30 NTSC Analog channels from 55.25 MHz to 247.2625 MHz, 124 ITU-T J.83 Annex B QAM 256 channels (6 dB below analog) to 1002 MHz 4 dBmV for 155 ITU-T J.83 Annex B QAM 256 channels, 54-1002 MHz 2 dBmV for 190 ITU-T J.83 Annex B QAM 256 channels, 54-1218 MHz
Input Level Range	+3/-5 dB
Typical Link Performance	
CNR	50 dB (Notes 3, 4, 7)
CSO	-60 dBc (Notes 3, 4, 7)
CTB	-60 dBc (Notes 3, 4, 7)
MER	38 dB (for all cases) (Notes 5, 6)
BER (Pre-FEC)	1E-6 (ITU-T J.83 Annex B QAM 256 channels) (Note 6)

- NOTES:**
1. Includes handles and connectors
 2. Temperature measured at transmitter module's air inlet. Fully populated host module with TXs with Blanks if using less than 4 TX sub modules.
 3. CNR and CTB/CSO may degrade up to 0.5 and 2 dB, respectively, over full operating temperature range.
 4. Link performance based on single wavelength over 40 km, and 0 dBm into the receiver.
 5. Source contribution not included.
 6. For all RF Channel Loadings listed above.
 7. For 30 NTSC Analog channels from 55.25 MHz to 247.2625 MHz, 124 ITU-T J.83 Annex B QAM channels (6 dB below analog) to 1002 MHz.
 8. For blank module: Blank modules are required to be installed into any unused transmitter location of the host module when there are less than 4 transmitter submodules installed.
 9. For RFOG applications with 20 dBm launch power over 20 km, MER is reduced to 36 dB.

ORDERING INFORMATION

Model Name	Description
CHP-CW4-ITU21-S	CHP CORWave 4 Submodule, ITU Channel 21, 10 dBm, SC/APC
CHP-CW4-ITU22-S	CHP CORWave 4 Submodule, ITU Channel 22, 10 dBm, SC/APC
CHP-CW4-ITU24-S	CHP CORWave 4 Submodule, ITU Channel 24, 10 dBm, SC/APC
CHP-CW4-ITU26-S	CHP CORWave 4 Submodule, ITU Channel 26, 10 dBm, SC/APC
CHP-CW4-ITU28-S	CHP CORWave 4 Submodule, ITU Channel 28, 10 dBm, SC/APC
CHP-CW4-ITU33-S	CHP CORWave 4 Submodule, ITU Channel 33, 10 dBm, SC/APC
CHP-CW4-ITU36-S	CHP CORWave 4 Submodule, ITU Channel 36, 10 dBm, SC/APC
CHP-CW4-ITU39-S	CHP CORWave 4 Submodule, ITU Channel 39, 10 dBm, SC/APC
CHP-CW4-ITU44-S	CHP CORWave 4 Submodule, ITU Channel 44, 10 dBm, SC/APC
CHP-CW4-ITU48-S	CHP CORWave 4 Submodule, ITU Channel 48, 10 dBm, SC/APC
CHP-CW4-ITU52-S	CHP CORWave 4 Submodule, ITU Channel 52, 10 dBm, SC/APC
CHP-CW4-ITU54-S	CHP CORWave 4 Submodule, ITU Channel 54, 10 dBm, SC/APC
CHP-CW4-ITU57-S	CHP CORWave 4 Submodule, ITU Channel 57, 10 dBm, SC/APC
CHP-CW4-ITU60-S	CHP CORWave 4 Submodule, ITU Channel 60, 10 dBm, SC/APC
CHP-CW4-ITU61-S	CHP CORWave 4 Submodule, ITU Channel 61, 10 dBm, SC/APC
CHP-CW4-ITU62-S	CHP CORWave 4 Submodule, ITU Channel 62, 10 dBm, SC/APC
CHP-CW4-HOST-4PORT	CHP CORWave 4 Host module with 4 RF ports
CHP-CW4-BLANK	CHP CORWave 4 Blank Module

RELATED PRODUCTS

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

Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

Note: Specifications are subject to change without notice.

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