CHP Max Headend Optics Platform

CHP CORWave®

1 GHz Multiwavelength Forward Path Transmitters

FEATURES

- Maximize fiber assets with up to 4 O-Band wavelengths for cost-effective upgrades
- Optimize headend and hub efficiencies with industry leading density and low power consumption
- Options include fixed output power or variable output powers in five 2 dB-wide ranges to help with sparing
- Front or Rear fiber connections
- Configure, monitor, and manage with CORView™ Element Management System

PRODUCT OVERVIEW

CHP CORWave® 1 GHz multiwavelength forward transmitters enable operators to consolidate services on existing fibers. With this ability, operators can repurpose fiber for new services and/or new customers, saving them capital that they would otherwise have to spent on new fiber runs. CORWave 1 GHz multiwavelength forward transmitters are an integral part of the CORWave multiwavelength plan, which operators can follow in the 1291nm region to multiplex 4 analog forward, 4 reverse, and 4 GbE-based data services wavelengths over as little as one fiber. The plan supports fiber distances of up to 30 km, forward and return node segmentation, and dedicated business service links in in an operator's existing HFC plant. The plan also supports RFoG and EPON wavelengths for Fiber-To-The-Premises (FTTP) applications and is compatible with CWDM forward transmitter wavelengths.

Reduce Complexity

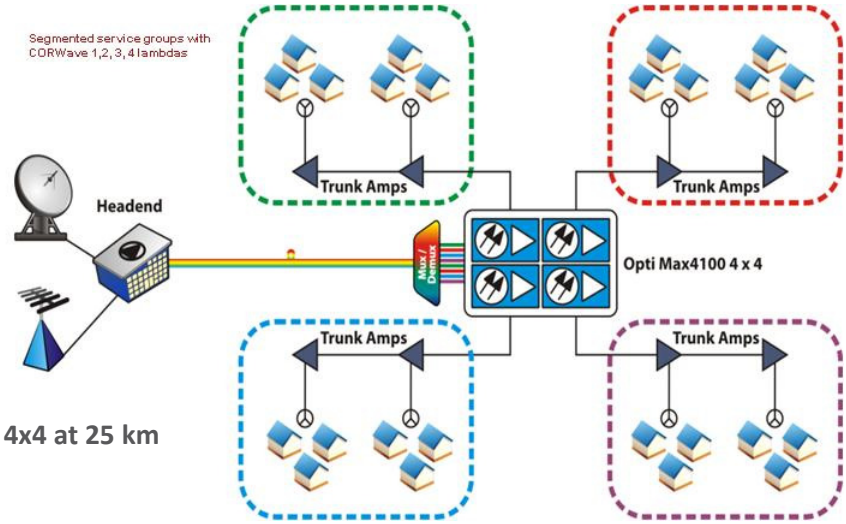
CHP CORWave forward transmitters come in a variety of configurations, including modules with fixed outputs, modules with variable outputs in five 2 dB-wide ranges, and all modules with either front or rear fiber connections. High isolation and dual inputs help operators avoid complex combining networks and save footprint in their headends. In addition, optical passives with CORWave wavelengths simplify optical multiplexing and reduce deployment time for faster revenue generation.

Add Value to Existing Assets

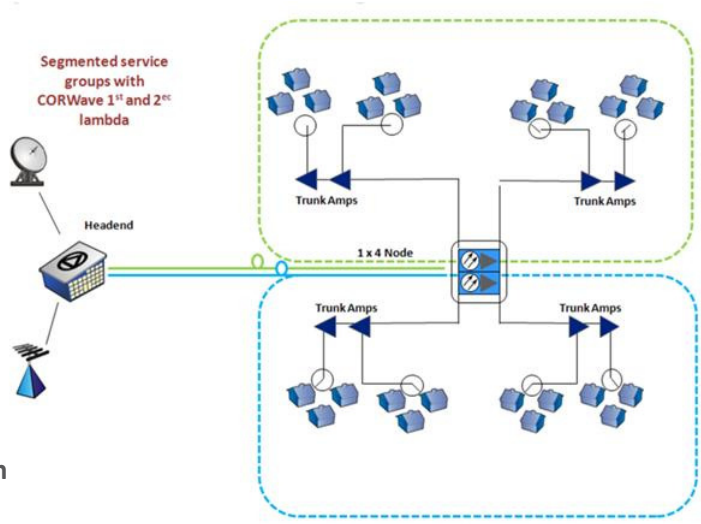
CHP CORWave forward transmitters are rapidly deployable, robust, and scalable. They compliment all CHP Max5000® application modules and components, so operators can cost-effectively add capacity to their networks. Operators can monitor the transmitters with the CORView Element Management System, which provides an intuitive and user-friendly interface for security, discovery, configuration, and inventory functions.

APPLICATIONS

The following diagrams depict typical applications for combining two or four CORWave wavelengths in the forward path:



4x4 at 25 km



2x2 at 30 km

SPECIFICATIONS

	MW0x (Fixed)	MWVx (Variable)
Optical		
Optical Wavelength	MW01-1291, MW02-1293, MW03-1295, MW04-1290	MWV1-1291, MWV2-1293, MWV3-1295, MWV4-1290
Optical Output Power	4, 6, 8, 10, 12, 13 dBm	2–4, 4–6, 6–8, 8–10, 10–12 dBm (2 dB increments)
RF		
Bandwidth		
Operational Range	54 to 1006 MHz	54 to 1006 MHz
Analog Channel Range	54 to 550 MHz	54 to 550 MHz
Digital Channel Range	550 to 1006 MHz	550 to 1006 MHz
Response Flatness, P–V, typ./max.	1.0/2.0 dB	1.0/2.0 dB
Input to Return Loss	16 dB	16 dB
Port-to-Port Isolation	≥60 dB, 54 to 800 MHz ≥54 dB, 800 to 870 MHz ≥50 dB, 870 to 1006 MHz	≥60 dB, 54 to 800 MHz ≥54 dB, 800 to 870 MHz ≥50 dB, 870 to 1006 MHz
Port-to Port Gain Variation	±0.5 dB/±1.0 dB	±0.5 dB/±1.0 dB
Powering		
Power Consumption, max.	17.4 W	17.4 W
Performance		
Channel Plan	79 NTSC channels and up to 75 256-QAM channels	79 NTSC channels and up to 75 256-QAM channels
Input RF Power		
Analog Channels [1, 2]	15.0 dBmV/ch	15.0 dBmV/ch
Digital QAM Channels	9.0 dBmV/ch	9.0 dBmV/ch
Composite Second Order, typ. [1, 3]	–63 dBc	–63 dBc
Composite Triple Beat, typ. [1]	–70 dBc	–70 dBc
Mechanical		
Optical Connector	SC/APC	SC/APC
RF Connector	F-type4	F-type
RF Input Test Point [4]	–20 ±1.0 dB	–20 ±1.0 dB
Dimensions (W x H x D) in (cm) [5]	1.25 x 3.4 x 18.5 (3.2 x 8.7 x 47.0)	1.25 x 3.4 x 18.5 (3.2 x 8.7 x 47.0)
Weight	2.75 lbs (1.24 kg)	2.75 lbs (1.24 kg)
Environmental		
Operational Temperature [6]	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)
Storage Temperature	–40 to 158°F (–40 to 70°C)	–40 to 158°F (–40 to 70°C)
Humidity, noncondensing, max.	85%	85%

Notes:
1. Distortions are measured using only CW analog carriers per SCTE recommendation by standard RF test methods. Performance shown represents typical performance for production units tested over typical Corning SMF-28 fiber (or equivalent). For minimum CSO and CTB, subtract 2dB from typical. CSO performance is for the transmitter only. CSO specifications for CORWave transmitter is obtained over specified fiber links. The typical system CSO is –60 dBc assuming an11 dBm launch per wavelength for a four-wavelength system.
2. OMI is 3.9% at 79 NTSC channel loading.
3. CSO performance for NTSC channels is for the in-band (high-side) beats.
4. Relative to main port with 0 dB pad and 0 dB EQ.
5. Includes handles and connectors.
6. Measured at module's air inlet.

Implementation Requirements for Multiwavelength Applications

	Multiwavelength Application	
Implementation Requirements	MW0x (Fixed)	MWVx (Variable)
Unique Requirements		
Recommended Wavelengths [1]	MW01-1291, MW02-1293, MW03-1295, MW04-1290	MWV1-1291, MWV2-1293, MWV3-1295, MWV4-1290
Maximum launch power/wavelength	11 dBm (four wavelengths)	11 dBm (four wavelengths)
Common Requirements		
Analog Content	Must use common analog content [2]	Must use common analog content [2]
Digital Content	Must use common digital content below 250 MHz [2, 3]	Must use common digital content below 250 MHz [2, 3]
Input to Return Loss	16 dB	16 dB
Analog RF Input Level	13.5 to 15 dBmV/channel	13.5 to 15 dBmV/channel
Digital RF Input Level	7.5 to 9 dBmV/channel	7.5 to 9 dBmV/channel

Notes
1. ARRIS recommends deployingMWV1-1291 as the first wavelength.
2. Maximum RF input cable length difference to transmitters is 100 feet.
3. Can use different, digitally modulated narrowcast content above 250 MHz.

WARNING! CORWave transmitters are designed for an operating environment of -40°C to +60°C. Mil Spec Hdbk 217 states that a 9°C increase in device operating environments will reduce the transmitter's reliability (and projected lifetime) by 50%. Therefore you should take proper care to maximize airflow around the transmitter and to minimize ambient temperatures, especially if you are installing or using these transmitters in an enclosed environment (e.g. pedestal, cabinet, etc.).

RELATED PRODUCTS

CHP Chassis	Optical Patch Cords
Power Supplies	Optical Passives
Control 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.

CHPCORWave_DS_17OCT14

(rev 10-2014)