CHP Max5000®

CORWave™ 1 GHz Multi Wavelength Forward Path Transmitters

MW0x , MWVx

O-Band Transmission

Fixed and Variable Outputs

Implementation Requirements for Multi-Wavelength Applications

Implementation Requirements	Multi-Wavelength Application	
	MW0x (Fixed)	**MWVx (Variable)**
Unique Requirements		
Recommended wavelengths (note 1)	MW01-1291, MW02-1293, MW03-1295, MW04-1290	MWV1-1291, MWV2-1293, MWV3-1295, MWV4-1290
Maximum launch power/wavelength	11 dBm (4 wavelengths)	11 dBm (4 wavelengths)
Common Requirements		
Analog content	Must use common analog content (note 2)	Must use common analog content (note 2)
Digital content	Must use common digital content below 250 MHz (notes 2, 3)	Must use common digital content below 250 MHz (notes 2, 3)
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 to deploy MWV1-1291 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.

Transmitter Specifications

	MW0x (Fixed)	**MWVx (Variable)**
Optical		
Optical Wavelength	MW01-1291, MWV0-1293, MWV0-1295, MWV0-1290	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	**MW0x (Fixed)**	**MWVx (Variable)**
Bandwidth		
Operational Range	54 to 1002 MHz	54 to 1002 MHz
Analog Channel Range	54 to 550 MHz	54 to 550 MHz
Digital Channel Range	550 to 1002 MHz	550 to 1002 MHz
Response Flatness, P–V, typ./max.	1.0/2.0 dB	1.0/2.0 dB
Input 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 1002 MHz	≥60 dB, 54 to 800 MHz ≥54 dB, 800 to 870 MHz ≥50 dB, 870 to 1002 MHz
Port-to-Port Gain Variation, typ./max.	±0.5 dB/±1.0 dB	±0.5 dB/±1.0 dB
Powering	**MW0x (Fixed)**	**MWVx (Variable)**
Power Consumption, max.	17.4 W	17.4 W

Technical Specification

CHP Max5000® CORWave™ 1 GHz Multi Wavelength Forward Path Transmitters

Transmitter Specifications

	MW0x (Fixed)	MWVx (Variable)
Performance		
Channel Plan	78 NTSC channels and up to 75 256-QAM channels	78 NTSC channels and up to 75 256-QAM channels
Input RF Power		
Analog Channels (notes 1 and 2)	15.0 dBmV/ch	15.0 dBmV/ch
Digital QAM Channels	9.0 dBmV/ch	9.0 dBmV/ch
Composite Second Order, typ. (notes 1 and 3)	–63 dBc	–63 dBc
Composite Triple Beat, typ. (note 1)	–70 dBc	–70 dBc
Mechanical	**MW0x (Fixed)**	**MWVx (Variable)**
Optical Connector	SC/APC	SC/APC
RF Connector	F-type	F-type
RF Input Test Point (note 4)	-20 ±1.0 dB	-20 ±1.0 dB
Dimensions (W x H x D) in (cm) (note 5)	1.25 x 3.4 x 18.5 in (3.2 x 8.7 x 47.0 cm)	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)	2.75 lbs (1.24 kg)
Environmental	**MW0x (Fixed)**	**MWVx (Variable)**
Operational Temperature (note 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 Š85% of 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 78 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.

CNR vs. Link Budget: CHP-MW0x-xxxx-xx-S and CHP-MWVx-129x-S 1GHz CORWave Transmitters

	-04-129x-S	-06-129x-S	-08-129x-S	-10-129x-S	-12-129x-S	-13-129x-S
Output Power (dBm)	4.0	6.0	8.0	10.0	12.0	13.0
Fiber Length (km)	7.0	13.0	15.0	15.0	20.0	25.0
Optical Loss Budget (dB)	**CNR (dB) for part fiber/part passive link (typical)**					
3	54.5	—	—	—	—	—
4	54.0	—	—	—	—	—
5	53.4	53.9	—	—	—	—
6	52.7	53.3	—	—	—	—
7	51.8	52.7	53.8	—	—	—
8	—	52.0	53.2	—	—	—
9	—	51.1	52.6	53.8	—	—
10	—	—	51.9	53.2	—	—
11	—	—	51.0	52.6	53.4	—
12	—	—	—	51.9	52.8	53.4
13	—	—	—	51.0	52.2	52.8
14	—	—	—	—	51.5	52.2
15	—	—	—	—	50.6	51.5
16	—	—	—	—	—	50.6

Notes:
1. Optical output power specified before transmitter's bulkhead.
2. CNR is measured using only CW analog carriers per SCTE test procedures. Performance shown is ambient. Subtract 0.5 dB for performance over full temp. range.
3. Specifications measured using typical receiver with 0.85 mA/mW, 7 pA/Hz0.5 performance.
4. Performance valid for 78 NTSC modulated channels at 15 dBmV/channel and 450 MHz of QAM loading at 6 dB below equivalent video channels.
5. Multiple forward wavelengths on a single fiber requires specific application considerations, please contact ARRIS for system design guidance.

Specifications are subject to change without notice.

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