



## C-COR® Opti Max2100

### 1 GHz Segmentable Cabinet Node



The ARRIS C-COR Opti Max2100 1 GHz Segmentable Cabinet Node is the next generation of the proven and reliable Opti Max2000 node. This fiber-deep, segmentable node has extended bandwidth up to 1GHz and accommodates 2 x 2 forward segmentation and 4 x 4 return segmentation. The Opti Max2100 combines advanced RF and optical technology with an RF output level of 114 dB $\mu$ V (54 dBmV) at a -6 dBm optical input level, thus allowing longer optical links and nodes placed much deeper in HFC networks.

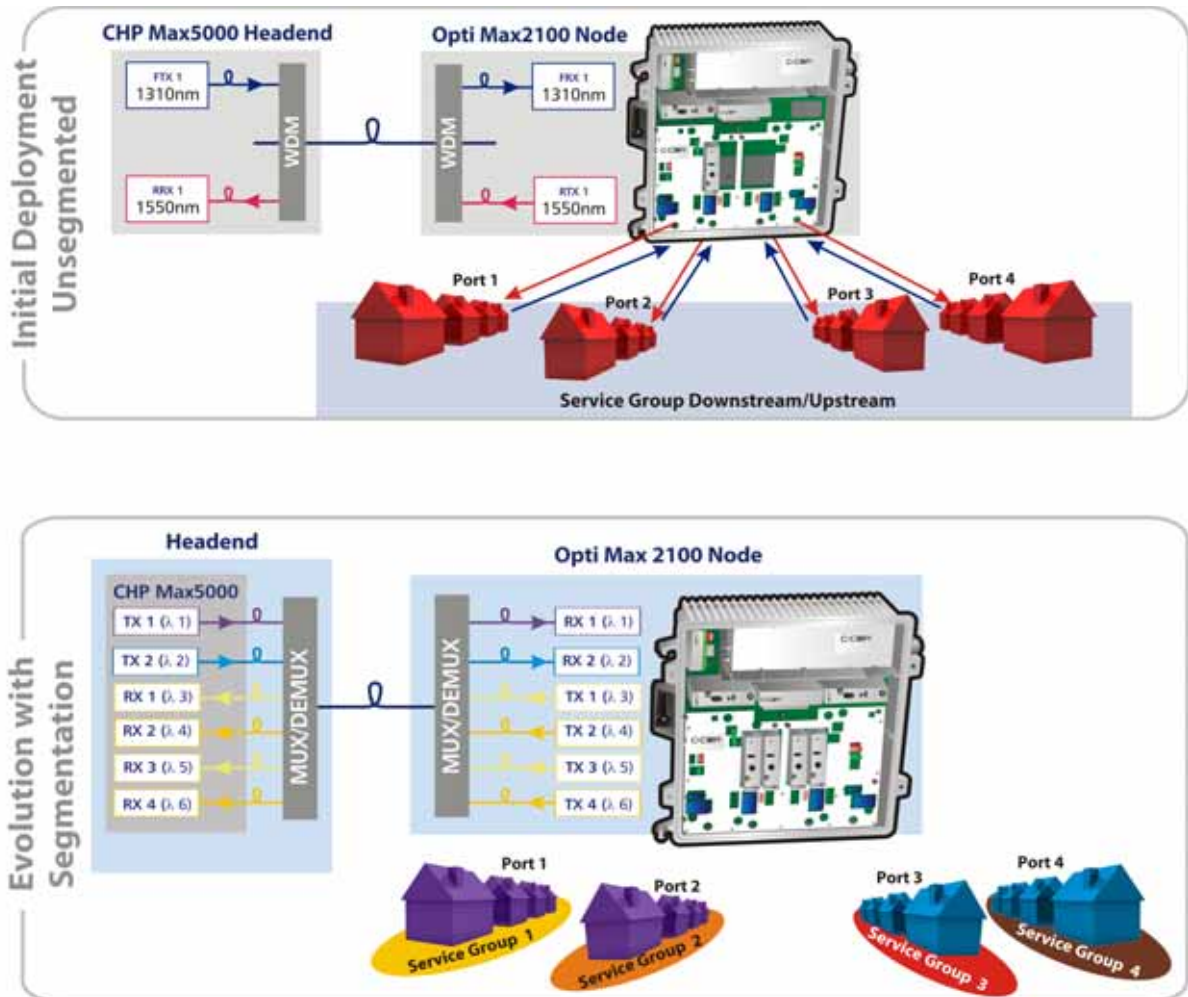
#### Features

- 1 GHz fiber deep node with two active outputs user-configurable to four outputs
- Two independent forward receivers and four independent return transmitters with the possibility of 2 x 2 forward segmentation and 4 x 4 return segmentation
- Optical redundancy with 1 x 2 forward configuration and up to 2 x 2 return segmentation
- Field upgradeable for easy, pay-as-you-grow migration from configuration to configuration
- Reference carrier generator for return path adjustment integrated into each transmitter
- Optical AGC with -6 to 0 dBm optical range
- ValueMax transponder (HMS/AM protocols)
- Plug-in diplex filters for future upgrades
- Robust GaAs technology for superior system performance

## Solution

Broadband service providers worldwide are continually pressured to increase the capacity of their HFC networks to provide more HDTV channels, ever-increasing data download and upload speeds, business services, VoIP, and digital simulcast. The ARRIS segmentable Opti Max2100 is the ideal choice for broadband service providers with cabinet-mount HFC architectures who need to cost effectively expand their network capacity while responding to the requirements of tomorrow's services.

## Application Example



## General Node Specifications

	Characteristic	Specification
Downstream Optical	Optical Input Level Range, @ 1002MHz, 5% OMI	-6 to 3 dBm without optical AGC; -6 to 0 dBm with optical AGC
	Optical Input Wavelength	1290 to 1600nm
	Optical AGC Tuning Range	±0.75 dB over complete operational level range
	Equivalent Input Noise	5 pA/Hz <sup>0.5</sup>
	Optical Input Testpoint Level	1V/mW ± 10%
Downstream RF	Operating Passband	85 to 1002MHz
	Factory Aligned Tilt	5 ± 1.0dB
	Flatness	±0.6/± 1.2dB, typ./max. (from 90 to 1002MHz)
	Thermal Level Stability	± 1.5 dB
	RF Output Testpoint	-20 ± 0.75 dB
Performance (Note)	Reference Output Level, P1/P4 output	112.5 dBμV/104.5 dBμV (870/47 MHz)
	CNR, min.	57.5 dB, > -6.0 dBm input
	CTB, min.	68 dBc
	CSO, min.	65 dBc
	XMOD, min.	68 dB
Upstream	Operating Passband	5 to 65 dB
	Isolated DFB Lasers	1310 ± 20nm (0 and +3 dBm); 1550 ± 20nm (+3 dBm)
	Isolated CWDM DFB Lasers	1471 to 1611 nm ± 6.5nm, 20nm spaced; +3 dBm
	RF Input Level	70 dBμV (10 dBmV) to port; 66 dBμV (6 dBmV) to TX, per carrier
	RF Input Testpoint	-20 dB ± 0.75 dB
	Optical Power Testpoint	1V/mW ± 10%
	NPR Dynamic Range	35/15 NPR/dB
BER Dynamic Range	43/33 dB (QPSK/QAM-16)	
Powering	AC Input Voltage	28 to 65V rms, 47 to 60Hz
	Local Powering	90 to 250VAC, 47 to 60Hz
	AC Current Passing, all ports	10A
	Power Consumption	99W max. for fully configured node
Physical and Environmental	Dimensions (W x H x D)/Weight, approx.	314 x 132 x 303 mm/8.0kg
	Connectors	
	Optical Fiber Patch Cord Entry Option	PG16, 5/8-inch UNEF
	Optical Connector Option	SC/APC, FC/APC
	RF Output Port Options	5/8-inch UNEF, IEC, 3.5/12, F-type (female), PG11
	RF Testpoints	mini SMB
	Operating Temperature Range	-20 to 60°C

Note: Splitter or tap and additional diplexer for P2 and P3 outputs decrease RF output level. Distortions tested with 42 CENELEC channel loading, and with diplexers installed and 8 dB slope from 47 to 862 MHz. Measured with -6 dBm optical input power and 5% OMI. Refer to the Opti Max2100 Equipment Manual (P/N 1503247) for complete specifications. Specifications are subject to change without notice.

# C-COR® Opti Max2100 1 GHz Segmentable Node

## Ordering Information

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
O	M	2	1	G	H	-	x	1	x	x	-	x	x	x	x	-	x	x	x	x	0

<b>1-4 Series</b>	
OM21	Product Name (short)
<b>5 Bandwidth</b>	
G	1 GHz

<b>6 Frequency Split</b>	
A	None (must choose 0 in block #10)
H	65/85 MHz

<b>7 Powering</b>	
6	Remote Powering Europe (28-65VAC)
2	Local Powering Europe (110-230V)

<b>8 RF Module</b>	
1	RF module with return switches

<b>9 Downstream Configuration</b>		
0	None	
1	1 x 2 config.—one TLC receiver	a,b
2	1 x 2 redundant config.—two TLC receivers	a,b
3	2 x 2 segmentation—two TLC receivers	a,b
4	1 x 2 config.—one optical AGC receiver	a,b
5	1 x 2 redundant config.—two optical AGC receivers	a,b
6	2 x 2 segmentation—two optical AGC receivers	a,b
<i>a) Each configuration can be upgraded to four output ports with splitters/TAPs and additional diplexers.</i> <i>b) TLC receivers: 83 dBμV (23 dBmV) RF out at -6 dBm; 2 dB higher RF out with each 1 dB increase in optical power. Optical AGC receivers: 83 dBμV (23 dBmV) RF out from -6 to 0 dBm.</i>		

<b>10 Upstream Configuration</b>		
0	None	
A	4 x 1 config.—one transmitter	a, b
B	4 x 1 redundant config.—two transmitters	a, c
C	2 x 2 segmentation—two transmitters	a, d
D	2 x 2 redundant segmentation—four transmitters	a, e
E	4 x 4 segmentation—four transmitters	e
<i>a) May be used as a 2-port or 4-port node.</i> <i>b) Must choose transmitter from #14 block, Return Transmitter Wavelength—TX1.</i> <i>c) Must choose transmitters from #14 block, Return Transmitter Wavelength—TX1 and #15 block, Return Transmitter Wavelength—TX2. Set blocks, #16 and 17, to "00".</i> <i>d) Must choose transmitters from #14 block, Return Transmitter Wavelength—TX1 and #17 block, Return Transmitter Wavelength—TX4. Set blocks, #15 and 16, to "00".</i> <i>e) Choose transmitters from #14 block, Return Transmitter Wavelength—TX1 through #17 block, Return Transmitter Wavelength—TX4.</i>		

<b>11 RF Connectors</b>	
0	None
I	IEC
3	3.5/12
F	F
5	5/8-inch
P	PG11

<b>12 Optical Connectors</b>	
0	None
F	FC/APC
S	SC/APC

<b>13 Optical Fiber Entry Port</b>	
0	None
P	PG16
5	5/8-inch

<b>14 Return Transmitter Wavelength—TX1</b>		
0	None	a
A	1310nm DFB, 0dBm	
B	1310nm DFB, +3dBm	
C	1550nm DFB, +3dBm	
<i>a) CWDM transmitters must be ordered separately.</i>		

<b>15 Return Transmitter Wavelength—TX2</b>		
0	None	a
A	1310nm DFB, 0dBm	
B	1310nm DFB, +3dBm	
C	1550nm DFB, +3dBm	
<i>a) CWDM transmitters must be ordered separately.</i>		

<b>16 Return Transmitter Wavelength—TX3</b>		
0	None	a
A	1310nm DFB, 0dBm	
B	1310nm DFB, +3dBm	
C	1550nm DFB, +3dBm	
<i>a) CWDM transmitters must be ordered separately.</i>		

<b>17 Return Transmitter Wavelength—TX4</b>		
0	None	a
A	1310nm DFB, 0dBm	
B	1310nm DFB, +3dBm	
C	1550nm DFB, +3dBm	
<i>a) CWDM transmitters must be ordered separately.</i>		

<b>18 Element Management</b>		
0	None	a
B	Value Max transponder—AM protocol	
C	Value Max transponder—HMS protocol	
Z	No transponder	b
<i>a) Value Max compatible.</i>		
<i>b) Daughter card-ready.</i>		

<b>19 Fiber Tray</b>	
0	None
S	Standard

<b>20 Future Option</b>	
0	Future option



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