MOTOROLA

ULTRA COMPACT NODES

UCN200 SERIES FIBER DEEP OPTICAL NODES

Full-featured optical nodes targeted for network segmentation and optimization.

Product Overview

Motorola's Ultra Compact Node 200 series is designed to meet the growing need for delivering fiber deeper into operator's networks. The UCN212 is a standard 1x1 node targeted for FTTB applications where fiber is limited and there are few actives beyond the node. The UCN212 features a single integrated receiver and can be configured with a plug-in return transmitter for two-way operation. The UCN224 is targeted for traditional HFC applications and can support trunk levels and amplifiers beyond the node. The UCN224 utilizes the same housing enclosure as the UCN212, but can expand to 1Rx2 functionality. Both nodes are Electronics Package (E-Pack) based to enable ease of maintenance.

Highlights

1006 MHz Gallium Arsenide (GaAs)

High output level

Internal Splitter

Electronic Adjustments

FP/DFB/CWDM reverse transmitters

100/240V AC mains and 24/90 V AC network powering

E-Pack based

Euro-DOCIS Status Monitoring

Optical AGC

RF –20 dB test point

Downstream Features

The UCN212 features a single high-level Gallium Arsenide (GaAs) output. The UCN224 features two high-level Gallium Arsenide (GaAs) outputs. Both feature an optional internal splitter to enable an additional RF output. Common to each of the nodes is an integrated primary receiver that operates across a wide optical input range. The UCN224 can support redundant operation with the addition of a second plug-in receiver module.
Signal adjustments are enabled by using electronic attenuator and equalizer settings. Optical AGC is standard and maintains a constant RF output level throughout any fluctuations in optical inputs levels, reducing unnecessary maintenance visits.
An RF test point is available to assist technicians with setting proper operating levels without disrupting service.

Upstream Features

The UCN212 combines all RF returns onto a single transmitter. The node can be configured with a wide variety of analog transmitters including Fabry Perot, Distributed Feedback and Coarse Wave Division Multiplexed (CWDM) 2 mW transmitters. A WDM can combine forward and return signals onto a single fiber to maximize scarce fiber resources. An optional pilot tone generator further simplifies installations. As network demands increase, the UCN224 return path can be segmented with the addition of a second, plug-in transmitter.

Status Monitoring

The nodes can be configured with an optional Euro-DOCSIS status monitor transponder for remote management and control. The nodes also feature optional Ingress Control Switches to allow operators to diagnose upstream noise issues without disrupting service.

Specifications

OPTICAL RECEIVER	
Optical Input Level	–7 to 0 dBm
Optical Wavelength	1100- 1600 nm
Input Noise Current	7.0 pA/Hz
Optical Test Point	1 V/mW
Optical Connector	SC/APC
Optical Input Return Loss	45 dB
Optical AGC Range	–7 to 0 dBm
Number of Receivers	
UCN212	One, Integrated
UCN224	Two, One Integrated, One Plug-in

RF FORWARD PATH	
Downstream Frequency	54 – 1006 MHz
Output Level	
UCN212	1x117 dBuV (1x57 dBmV)
UCN224	2x112 dBuV (2x52 dBmV)
Level Flatness	±1.0 dB
RF Test Point	–20 dB
Output Slope	14 ±1.0 dB
RF Output Return Loss	16 dB
Diplex Splits	5-42/54-1003MHz 5-65/85-1003 MHz 5-85/104-1003 MHz

REVERSE PATH	
Upstream Frequency	5-85 MHz
Level Flatness	±1.0 dB
RF Test Point	–20 dB
Ingress Control States	0, –6, –30 dB
Thermal Stability	<±1.0 dB

TRANSPONDER	
Euro-DOCSIS	Version 2.0
HMS Monitoring Protocol	SNMPv1
DOCSIS Monitoring Protocol	SNMPv1, v2, v3
TX Frequency Range	5 to 65 MHz
TX Output Power	+ 8 to +58 dBmV
Channel Bandwidth	6 and 8 MHz

PERFORMANCE	
Composite Triple Beat	–60 dBc
Composite Second Order	–58 dBc

41 unmodulated CH. CENELEC EN50083-3 9without Band I)
Output level 51 dBmV, 6 dB output slope, o dBm, using LM1000 transmitters, 20 km fiber

MECHANICAL/ENVIRONMENTAL	
Protection Class	IP66
Weight	4 kg
Dimensions (mm)	268 L x 263 W x 104 D
Operating Temperature	–40°C to +60°C
Power Consumption	<20 W
AC Current	8A

REVERSE PATH TRANSMITTERS	
FP 1310 nm	
Output Power	0 dBm
NPR	38/9 dB
Power Consumption	2.5 W
DFBT1310 nm	
Output Power	3 dBm
NPR	40/11 dB
Power Consumption	3.0 W
DFBT CWDM	
Output Power	3 dBm
NPR	40/13 dB
Power Consumption	3.0 W
Wavelengths	16
Number of Transmitters	
UCN212	One, Plug-in
UCN224	Two, Plug-in

Specifications are subject to change without notice.

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