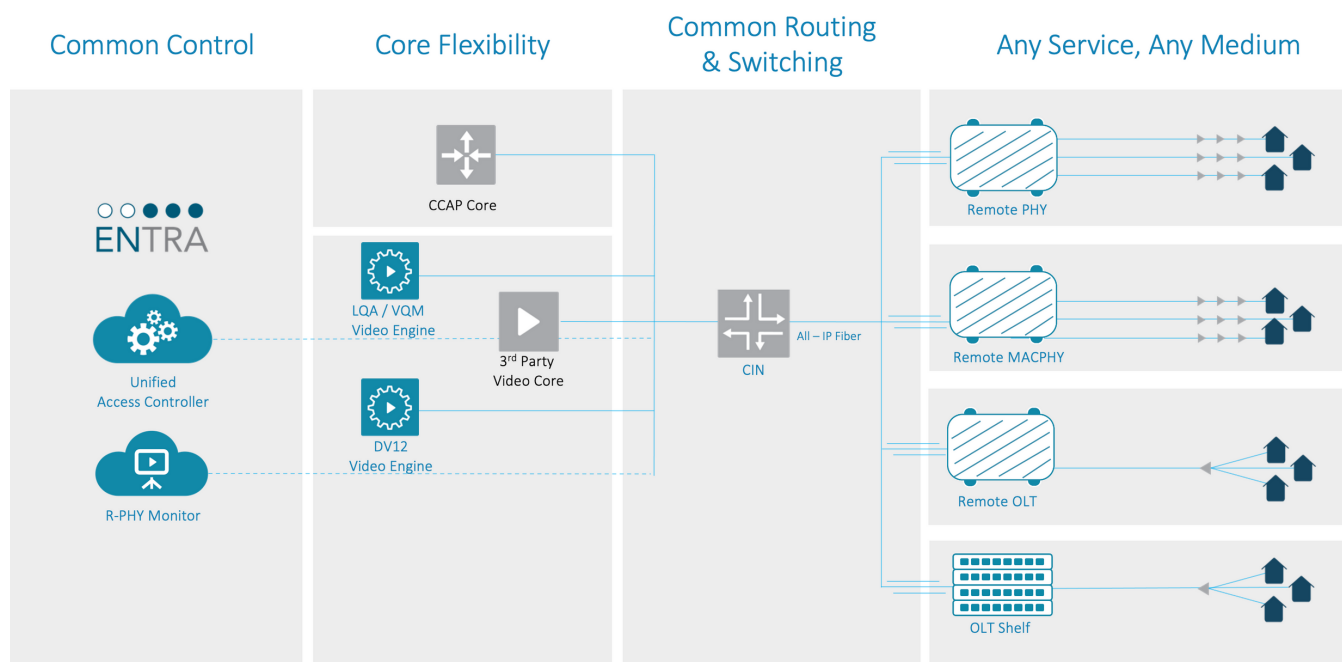# EN2112

DOCSIS 3.1 R-PHY COMPACT 2 PORT NODE

The **Entra** Distributed Access Platform is Vecima's realization of the next generation of cable access products as optical transport moves away from analog RF distribution to all-digital Ethernet. Entra is optimized to support all distributed access architectures and facilitate the delivery of existing video and data services over hybrid fiber coax (HFC) and direct fiber connections.
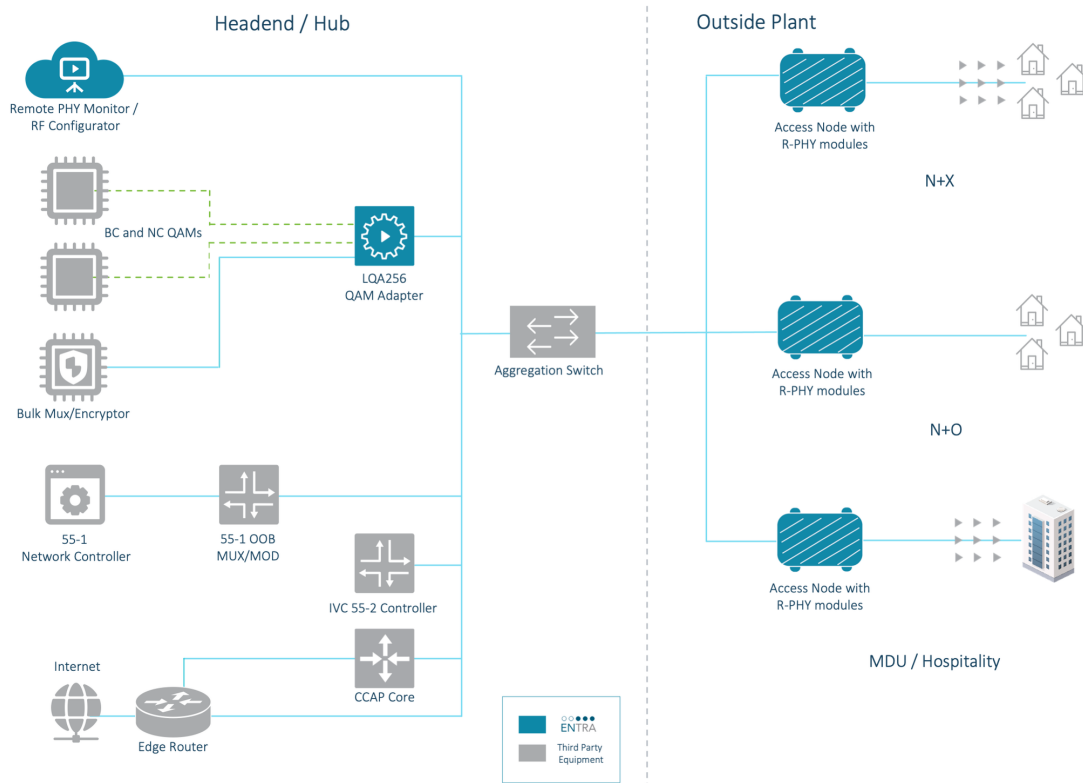

Common Control | Core Flexibility | Common Routing & Switching | Any Service, Any Medium

ENTRA
Unified Access Controller
R-PHY Monitor

CCAP Core
LQA / VQM Video Engine
3rd Party Video Core
DV12 Video Engine

CIN
All – IP Fiber

Remote PHY
Remote MACPHY
Remote OLT
OLT Shelf

Highlights

- Ready for R-PHY, R-MACPHY, and 10G EPON distributed access deployment today …and for the future
- Future-proofed network design with multiple node form factors to fit a wide range of deployment needs
- Leverage existing video QAM infrastructure to transition into DAA deployments

VECIMA

EN2112

DOCSIS 3.1 R-PHY COMPACT 2 PORT NODE

Headend / Hub

Remote PHY Monitor / RF Configurator

BC and NC QAMs

LQA256 QAM Adapter

Bulk Mux/Encryptor

55-1 Network Controller

55-1 OOB MUX/MOD

IVC 55-2 Controller

CCAP Core

Internet

Edge Router

Aggregation Switch

Outside Plant

Access Node with R-PHY modules

N+X

Access Node with R-PHY modules

N+O

Access Node with R-PHY modules

MDU / Hospitality

ENTRA

Third Party Equipment

ENTRA EN2112
DOCSIS 3.1 COMPACT RPHY ACCESS NODES

Entra EN2112 is a high-density Compact 2 Port implementation of our field-proven Entra 8100 DOCSIS 3.1 North American 4 port Node designed specifically for Global markets as well as MDU applications.

Highlights

- A truly intelligent, remote RF-managed (tilt, attenuation, level, US wink, etc.) device.
- Core-neutral RPD implementation integrates with any standards-compliant CCAP or vCCAP core.
- Evolve CCAP core without any concerns of future distributed access node compatibility.
- Supports DOCSIS and Video services.
- Very Compact implementation of a 2-Port Node.
- Legacy digital video support, including all OOB (QAM plus native 55-1 and 55-2).

VECIMA

R-PHY Compact 2 Port Node Specifications

RPD Module	
SFP+ Ports	2 x 10GE
Timing Support	IEEE 1588v2 PTP Ordinary Clock Slave
Multicast Support	IGMP v2/v3 and MLD v1/v2
Fiber Redundancy	Hot and cold standby support
Authentication	802.1X port-based EAP-TLS
DOCSIS Operation Mode	Remote PHY
DOCSIS 3.1 OFDM DS Channels	1 service group x 6 OFDM (192 MHz)
DOCSIS 3.1 OFDMA US Channels	2 service groups x 2 OFDMA (96 MHz) each
DOCSIS 3.0 DS Channels	48 Annex A/B
Video QAM DS Channels	128 Annex B/C, 96 Annex A
DOCSIS 3.0 DS Channels	1 or 2 service groups x 12 ATDMA each
OOB DS	SCTE 55-1 & 55-2, 3 x Narrow & Wide NDF
OOB US	SCTE 55-1 & 55-2, 3 x NDR
AGC, Alignment and Leakage Detection Tones	4 x Dedicated CW (54 MHz to 1218MHz) 158 x SC-QAM as CW (54 MHz to 1002 MHz)
Video QAM Input Support	MPTS over L2TPv3 (R-DEPI) 10ms de-jitter, PCR restamping, NULL insertion/deletion, Synchronous and Asynchronous mode support

Control & Management	
Primary Interface	Connected CCAP Core(s)
Troubleshooting Interface	SSH

RF Features	
Diplexer Options (Field-Replaceable)	5-85, 102-1218MHz 5-42, 54-1218MHz 5-65, 85-1218MHz 5-204, 258-1218MHz
Upstream Ingress Switch (SW Controlled)	0, -6dB, -40dB per Node RF Port
Downstream Mute (SW Controlled)	>10W power reduction per node RF port
Downstream Service Groups	1
Upstream Service Groups	2
Service Group Configuration	1X1 or 1X2
Local RF Injection	54-1006 MHz
Analog RF Optical Overlay	Optional, 54-750 MHz
3rd RF Port	Local RF In / 3rd RF Out

Chassis / Power / Environmental	
Dimensions (H x W x L) (Excludes mounting hardware and port connection)	245 x 204 x 160 mm (”9.6 x 8.0 x 6.3 in”)
Weight	<15 lb (7 kg)
External RF/Power Ports	75 ohms, 2 X PG 11 / SCTE 91 (5/8”)
External Fiber Ports	SC / APC
Input Voltage Options	30-65 VAC (QSW) 50/60 Hz 40-90 VAC (QSW) 50/60 Hz 90-264 VAC (sine) 50/60 Hz
AC Current Passing	10A max
Temperature (Operational)	-40 to 60°C (-40 to 140°F)
Humidity (Operational)	5 to 95%
Mounting	Wall, Pedestal or Cabinet

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