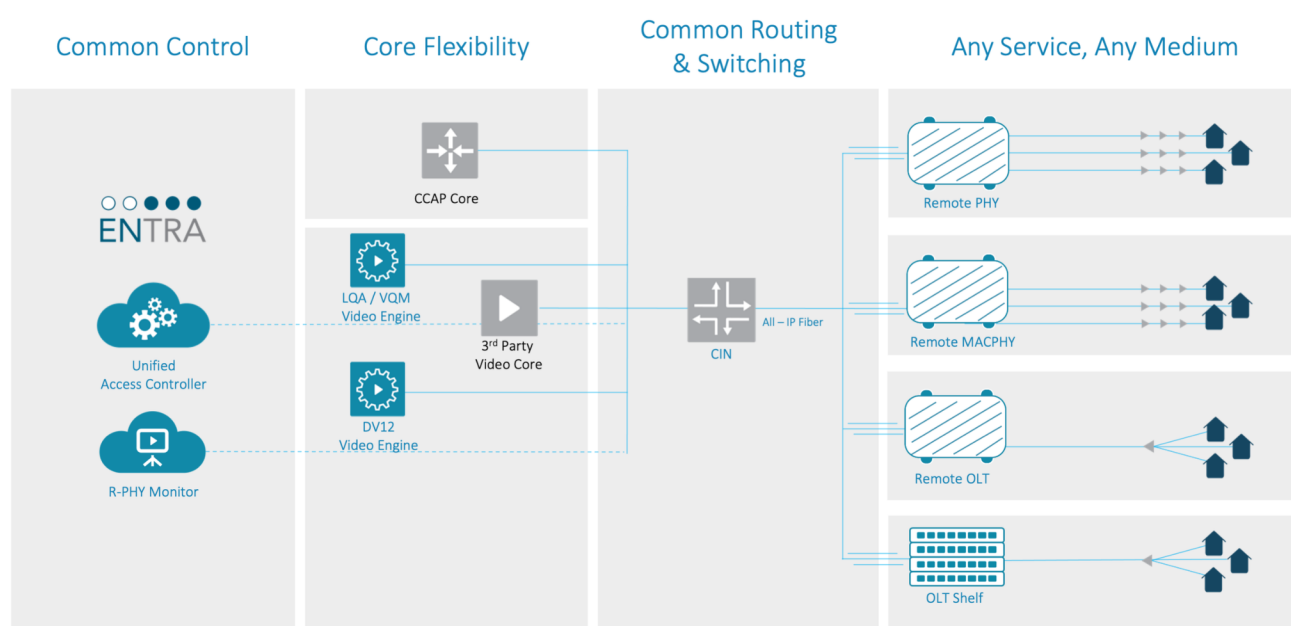# EN8100 / EN8400

EN8100 DOCSIS 3.1 R-RPHY ACCESS NODE
EN8400 DOCSIS 4.0 READY 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.
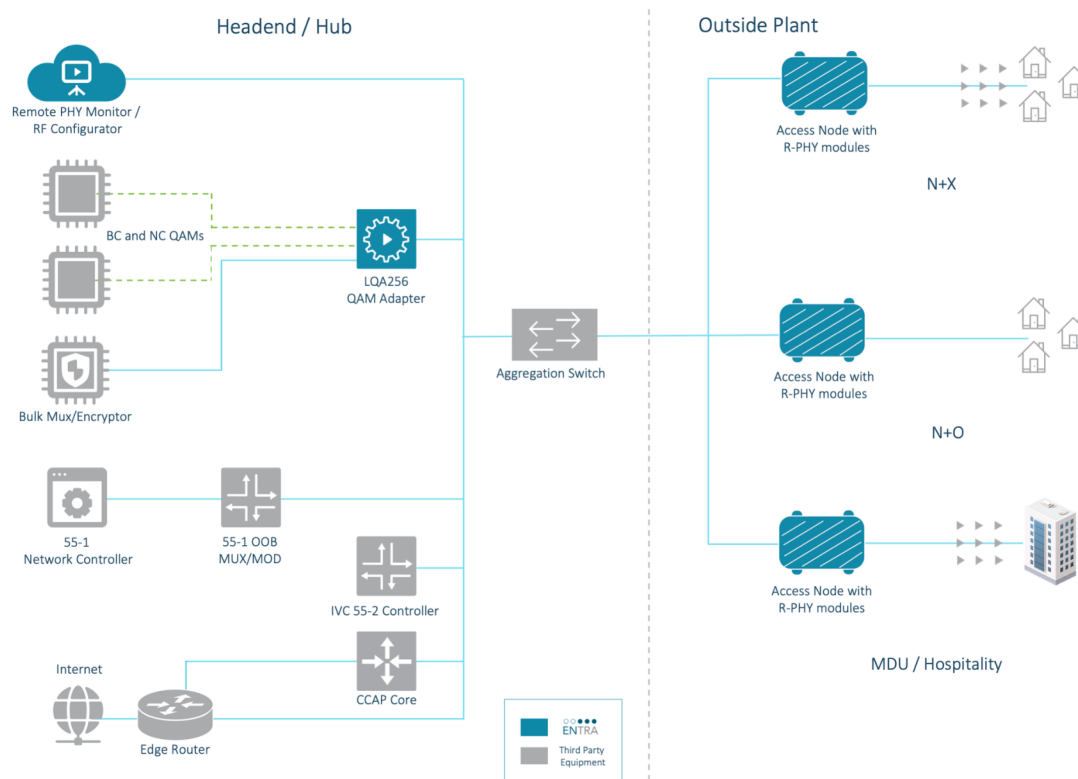

Highlights

- Ready for R-PHY, R-MACPHY, 10G EPON, and XGS-PON 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.
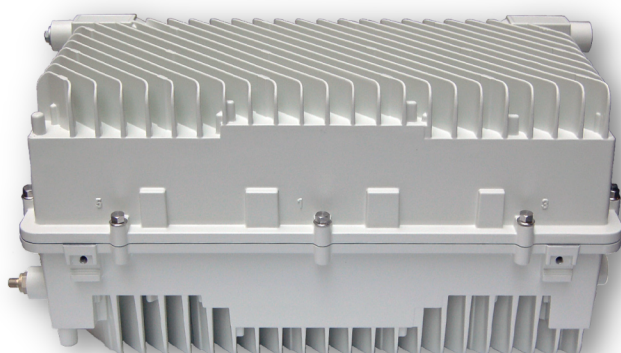
EN8100 / EN8400

EN8100 DOCSIS 3.1 R-RPHY ACCESS NODE
EN8400 DOCSIS 4.0 READY 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 8100 / 8400
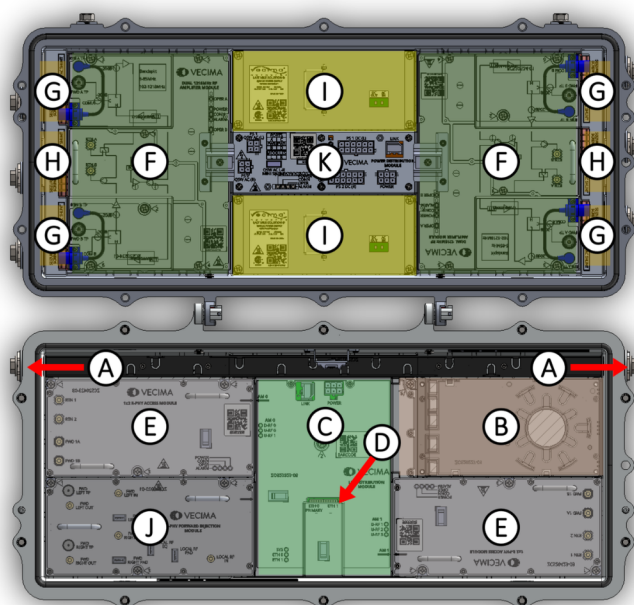### DOCSIS 3.1 AND 4.0 DAA ACCESS NODES

Entra 8100 and 8400 are Vecima's realization of the next generation of HFC nodes purpose built to support R-PHY and R-MACPHY deployments.

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.
- Legacy digital video support including all OOB (QAM plus native55-1 and 55-2).
- Support for future MACPHY and D4.0 Access Modules.

VECIMA

EN8100 / EN8400

EN8100 DOCSIS 3.1 R-RPHY ACCESS NODE
EN8400 DOCSIS 4.0 READY NODE

- **A** Fiber Entry Ports (2)
- **B** Fiber Management Tray (1)
- **C** Lid Distribution Module (1)
- **D** 1/10 GbE SFP+ Ports (2)
- **E** Access Modules (1 or 2)
- **F** Dual Port RF Amplifier Modules (2)
- **G** Port Entry Module – RF Enabled (4)
- **H** Port Entry Module – AC Power Only (2)
- **I** Power Supplies (1 or 2)
- **J** Forward Injection Module (1)
- **K** Power Distribution Module (1)

R-PHY Access Node Specifications

Lid Distribution Module

SFP + Ports	1 x 10GE
	2 x 10 GE
Timing Support	IEEE 1588v2 PTP Ordinary Clock Slave
Multicast Support	IGMP v2/v3 and MLD v1/v2
Fiber Redundancy	Hot and cold standby support
Node Daisychaining	Supported on secondary port*
Authentication	802.1X port-based EAP-TLS

Lid Distribution Module

DOCSIS 3.0 DS Channels	48 Annex B
Video QAM DS Channels	128 Annex B
DOCSIS 3.1 OFDM DS Channels	6 x 192 MHz
DOCSIS 3.0 US Channels	1 or 2 service groups x 12 ATDMA each
DOCSIS 3.1 OFDMA US Channels	2 service groups x 2 OFDMA (96 MHz) each
DOCSIS Operation Mode	Remote PHY
OOB DS	1 x SCTE 55-1, 1 x SCTE 55-2 (native) Narrow and Wide NDF
OOB US	3 x SCTE 55-1, 1 x SCTE 55-2 (native) 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

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)	<-40 dBc, settable per node RF port
Downstream Mute (SW Controlled)	>10W power reduction per node RF port

Chassis / Power / Environmental

Dimensions (H x W x L) (Length excludes port plugs; Height measured from the bottom of the strand)	11.3" x 11.0" x 23.9" (28.8cm x 28.1cm x 60.7cm)
Weight	<50 lb (22.7 kg)
External RF/Power Ports	4 x SCTE-91 (two per side)
External Power Only Ports	2 x SCTE-91 (one per side)
External Fiber Ports	2 x SCTE-91 (one per side)
Input Voltage	45-90 VAC,50/60 Hz
AC Current Passing	15A max
Temperature (Operational)	-40 to 60°C (-40 to 140°F)
Humidity (Operational)	5 to 95%
Mounting	Strand, Pedestal, Wall

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