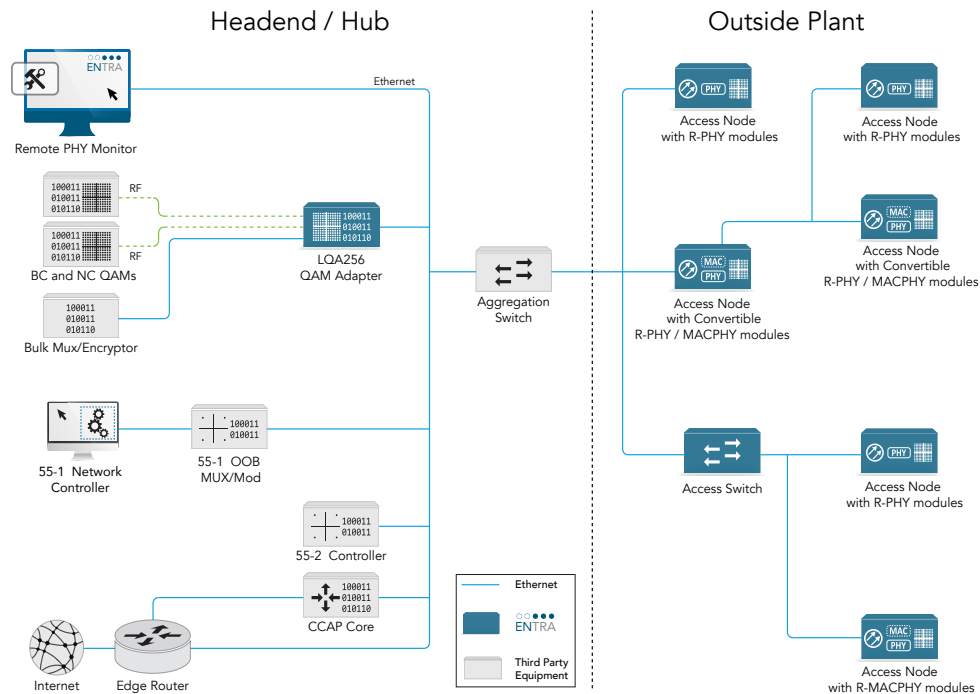*The **Entra** Distributed Access Platform is Vecima's realization of the next generation of HFC nodes as optical transport moves away from analog RF distribution to all-digital Ethernet.*
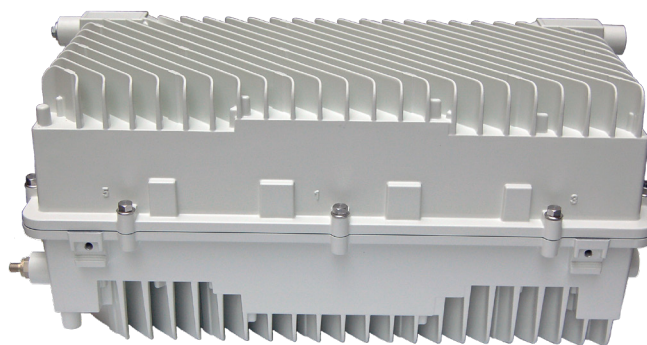
Entra is optimized to support all distributed access architectures and facilitate the delivery of existing video and data services over hybrid fiber coax (HFC) and direct Ethernet connections.

Entra Distributed Access Platform

Highlights

- Core-neutral RPD implementation integrates with any standards-compliant CCAP core

- Evolve CCAP core without any concerns of future distributed access node compatibility

- Supports DOCSIS and Ethernet services

- Legacy digital video support including all OOB (QAM plus native 55-1 and 55-2)
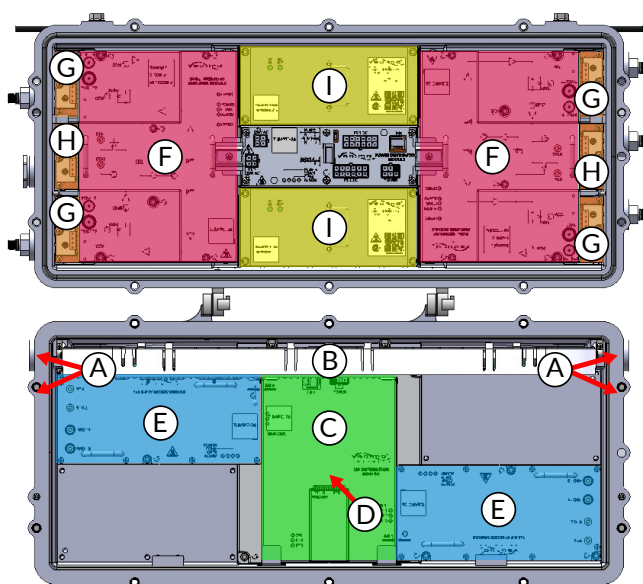

Entra R-PHY Access Node

R-PHY Access Node Specifications

Lid Distribution Module

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

*Currently under development and will be included in a future firmware release

Access Module

DOCSIS 3.0 DS Channels	48 Annex B
Video QAM DS Channels	128 Annex B
DOCSIS 3.1 OFDM DS Channels	2 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

*Currently under development and will be included in a future firmware release

Control & Management

Primary Interface	Connected CCAP Core(s)
Troubleshooting Interface	SSH

RF Specifications

Impedance	75 Ω
Return Loss	16 dB min, >18 dB typ
Maximum Output Power	+64 dBmV (virtual)
MER (equalized)	41 dB
	45 dB (typical, reduced output)
Downstream Linear Tilt (Software Controlled)	15-21 dB over 108-1218 MHz
Hum Modulation	-50 dBc
Diplexer Options (Field-Replaceable)	5-85, 102-1218MHz
	5-42, 54-1218MHz
	5-65, 85-1218MHz*
	5-204, 258-1218MHz*
Upstream Nominal Set Point, DOCSIS	-4 to +20 dBmV/6.4 MHz, QPSK to 64 QAM
	0 to +20 dBmV/6.4 MHz, 128 to 1024 QAM
	+7 to +20 dBmV/6.4 MHz, 2048 & 4096 QAM
Upstream Ingress Switch (SW Controlled)	<-40 dBc, settable per node RF port
Downnstream Mute (SW Controlled)	>10W power reduction per node RF port

*Currently under development and will be included in a future firmware release

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	4 x SCTE-91 (two 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

R-PHY Access Node Subsystems

R-PHY Access Node

(A) Fiber Entry Ports (4)

(B) Fiber Management Tray

(C) Lid Distribution Module

(D) 1/10 GbE SFP+ Ports (2)

(E) Access Modules (1 or 2)

(F) Dual Port RF Amplifier Modules (2)

(G) Port Entry Boards - RF Enabled (4)

(H) Port Entry Boards - AC Power Only (2)

(I) Power Supplies (1 or 2)

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