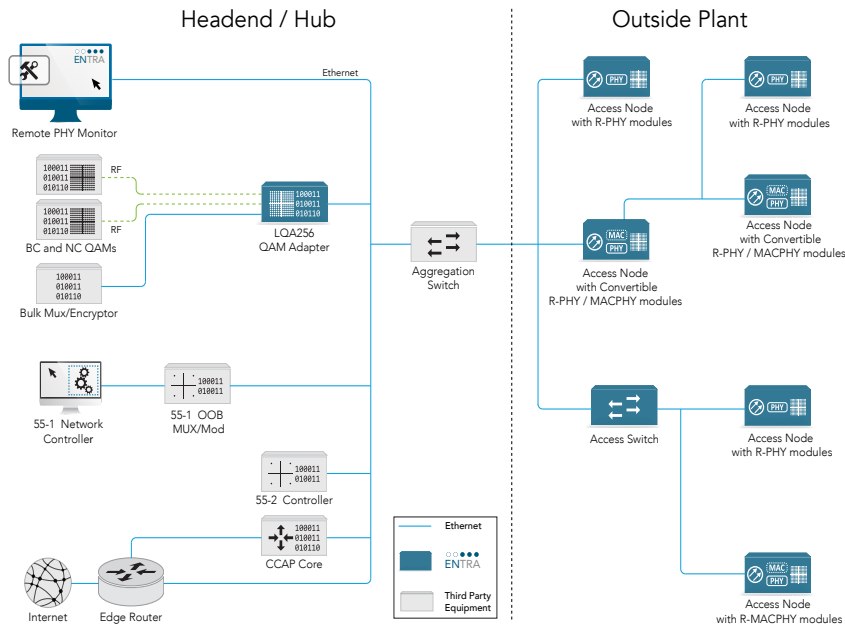


The **Entra** Distributed Access Platform is Vecima's realization of the next generation of HFC nodes as optical transport moves away from analog RF distribution to all-digital Ethernet.

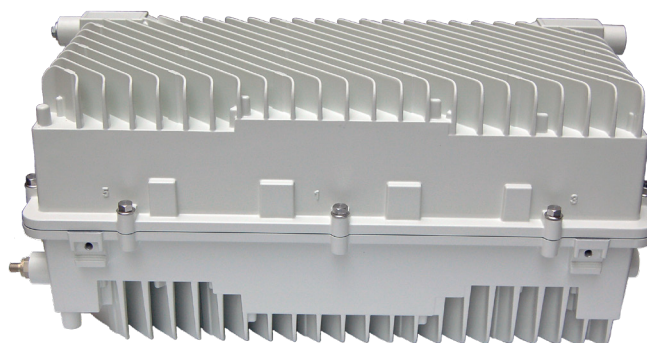
Entra is optimized to support all distributed access architectures and facilitate the delivery of existing video and data services over hybrid fiber coax (HFC) and direct Ethernet connections.



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)



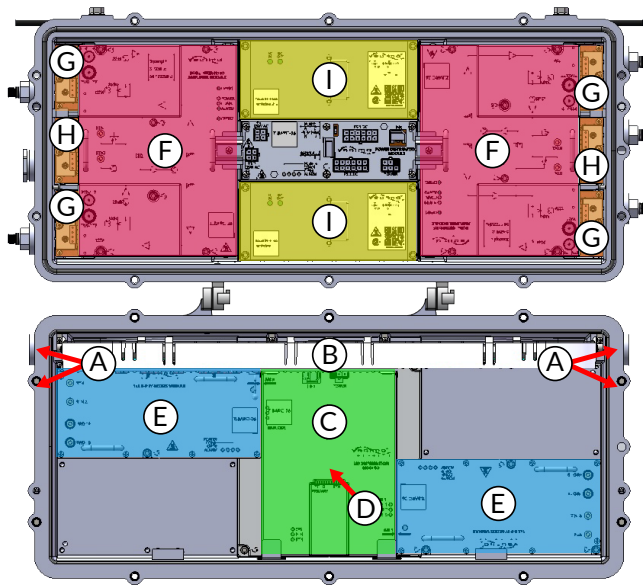
Entra R-PHY Access Node

R-PHY Access Node Specifications

Lid Distribution Module		RF Specifications	
SFP+ Ports	1 x 10GE 2 x 10GE	Impedance	75 Ω
Timing Support	IEEE 1588v2 PTP Ordinary Clock Slave	Return Loss	16 dB min, >18 dB typ
Multicast Support	IGMP v2/v3 and MLD v1/v2	Maximum Output Power	+64 dBmV (virtual)
Node Daisychaining	Supported on secondary port*	MER (equalized)	41 dB 45 dB (typical, reduced output)
Authentication	802.1X port-based EAP-TLS	Downstream Linear Tilt (Software Controlled)	15-21 dB over 108-1218 MHz
<i>*Supported by a future software release</i>		Hum Modulation	-50 dBc
Access Module		Diplexer Options (Field-Replaceable)	5-85, 102-1218MHz 5-42, 54-1218MHz 5-65, 85-1218MHz 5-204, 258-1218MHz
DOCSIS 3.0 DS Channels	48 Annex B	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
Video QAM DS Channels	128 Annex B	Upstream Ingress Switch (SW Controlled)	<-40 dBc, settable per node RF port
DOCSIS 3.1 OFDM DS Channels	6 x 192 MHz	Downstream Mute (SW Controlled)	>10W power reduction per node RF port
DOCSIS 3.0 US Channels	1 or 2 service groups x 12 ATDMA each	Chassis / Power / Environmental	
DOCSIS 3.1 OFDMA US Channels	2 service groups x 2 OFDMA (96 MHz) each	Dimensions (H x W x L)	11.3" x 11.0" x 23.9" (28.8cm x 28.1cm x 60.7cm) <i>(Length excludes port plugs; Height measured from the bottom of the strand)</i>
DOCSIS Operation Mode	Remote PHY	Weight	<50 lb (22.7 kg)
OOB DS	1 x SCTE 55-1, 1 x SCTE 55-2 (native) Narrow and Wide NDF	External RF/Power Ports	4 x SCTE-91 (two per side)
OOB US	3 x SCTE 55-1, 1 x SCTE 55-2 (native) NDR	External Power Only Ports	2 x SCTE-91 (one per side)
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)	External Fiber Ports	4 x SCTE-91 (two per side)
Video QAM Input Support	MPTS over L2TPv3 (R-DEPI) 10ms de-jitter, PCR restamping, NULL insertion/deletion	Input Voltage	45-90 VAC, 50/60 Hz
Control & Management		AC Current Passing	15A max
Primary Interface	Connected CCAP Core(s)	Temperature (Operational)	-40 to 60°C (-40 to 140°F)
Troubleshooting Interface	SSH	Humidity (Operational)	5 to 95%
		Mounting	Strand, Pedestal, Wall

R-PHY Access Node Subsystems

R-PHY Access Node



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

