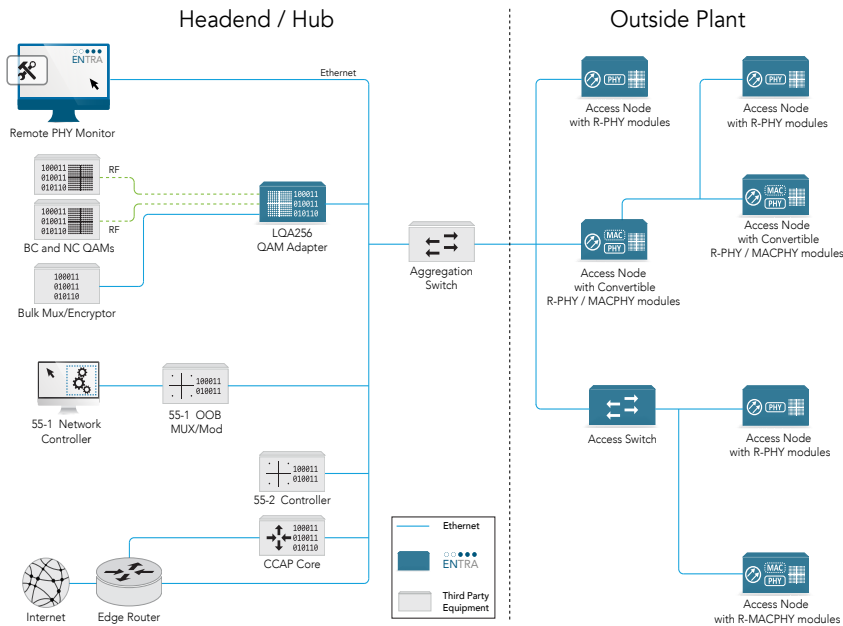


The **Entra** Distributed Access Platform is Vecima's realization of the next generation of HFC nodes as optical transport moves away from analog RF distribution to all-digital Ethernet.

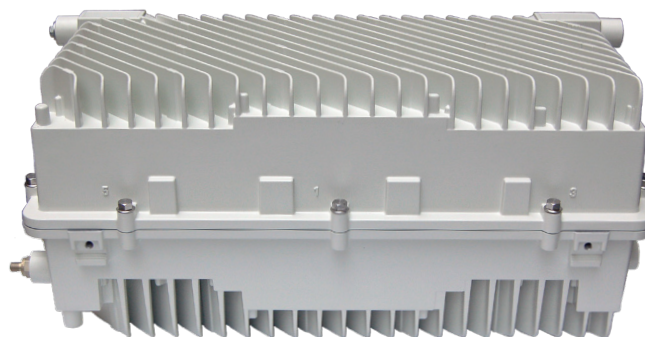
Entra is optimized to support all distributed access architectures and facilitate the delivery of existing video and data services over hybrid fiber coax (HFC) and direct Ethernet connections.



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)

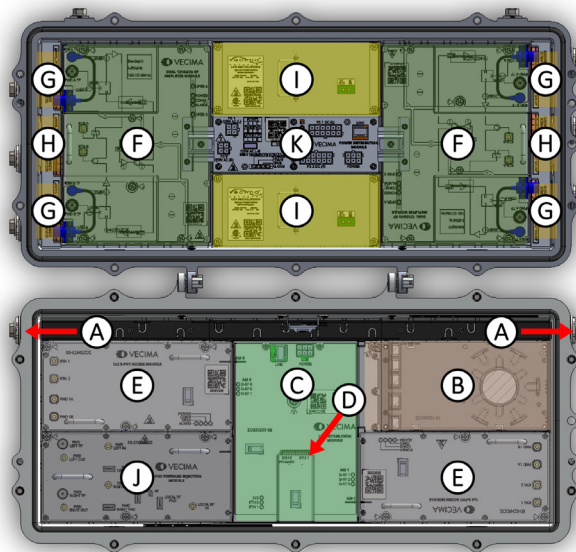


Entra R-PHY Access Node

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
Authentication	802.1X port-based EAP-TLS		45 dB (typical, reduced output)
<i>*Supported by a future software release</i>		Downstream Linear Tilt (Software Controlled)	15-21 dB over 108-1218 MHz
Access Module		Hum Modulation	-50 dBc
DOCSIS 3.0 DS Channels	48 Annex B	Diplexer Options (Field-Replaceable)	5-85, 102-1218MHz 5-42, 54-1218MHz 5-65, 85-1218MHz 5-204, 258-1218MHz
Video QAM DS Channels	128 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
DOCSIS 3.1 OFDM DS Channels	6 x 192 MHz	Upstream Ingress Switch (SW Controlled)	<-40 dBc, settable per node RF port
DOCSIS 3.0 US Channels	1 or 2 service groups x 12 ATDMA each	Downstream Mute (SW Controlled)	>10W power reduction per node RF port
DOCSIS 3.1 OFDMA US Channels	2 service groups x 2 OFDMA (96 MHz) each	Chassis / Power / Environmental	
DOCSIS Operation Mode	Remote PHY	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>
OOB DS	1 x SCTE 55-1, 1 x SCTE 55-2 (native) Narrow and Wide NDF	Weight	<50 lb (22.7 kg)
OOB US	3 x SCTE 55-1, 1 x SCTE 55-2 (native) NDR	External RF/Power Ports	4 x SCTE-91 (two 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 Power Only Ports	2 x SCTE-91 (one per side)
Video QAM Input Support	MPTS over L2TPv3 (R-DEPI) 10ms de-jitter, PCR restamping, NULL insertion/deletion	External Fiber Ports	2 x SCTE-91 (one per side)
Control & Management		Input Voltage	45-90 VAC, 50/60 Hz
Primary Interface	Connected CCAP Core(s)	AC Current Passing	15A max
Troubleshooting Interface	SSH	Temperature (Operational)	-40 to 60°C (-40 to 140°F)
		Humidity (Operational)	5 to 95%
		Mounting	Strand, Pedestal, Wall

R-PHY Access Node Subsystems



- (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)

