



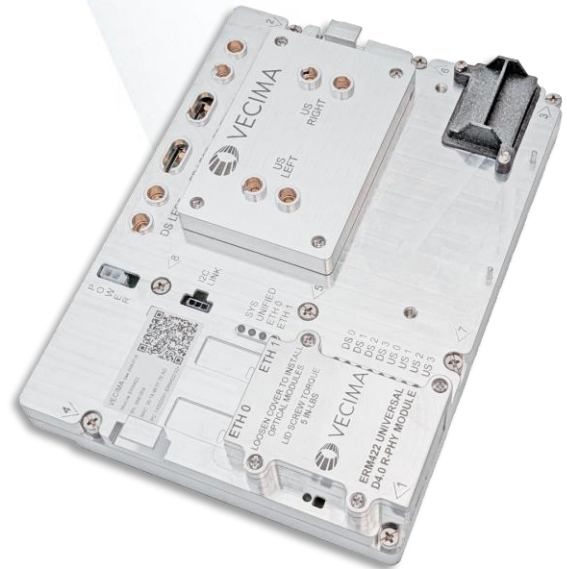
**ENTRA®**

## ERM412/422 Remote PHY Module

### Reliable. Flexible. Simplified

The Entra® ERM412/422 Remote PHY Device (RPD) is a high-density, stand-alone DOCSIS® 4.0 module that builds on our field-proven RPD technology. The ERM412/422 is compatible with EN9000 and EN3400 Generic Access Platform (GAP) nodes, the EN8800U DOCSIS 4.0 node, as well as select legacy analog nodes.

The ERM412 and ERM422 modules share the same form factor and support one or two downstream service groups, with either two or four upstream service groups.



#### Multiple Node Compatibility

Deploy in Vecima EN9000 (GAP) or retrofit existing GS7000 nodes for DAA



#### Full Spectrum DOCSIS 4.0

Delivers maximum DOCSIS 4.0 throughput with full spectrum support up to 1.8 GHz downstream and multiple upstream options including ESD, FSD, and FDX



#### Flexible Service Groups

Supports up to 2 downstream and 4 upstream service groups



#### Legacy Digital Video Support

Support for Video SC-QAMs, SCTE OOB and DSG



#### Interoperable by Design

Flexible operation supporting multiple vendors' cores



#### Deploy with Confidence

High-reliability design with support for power holdover modules

### Specifications

RPD Module		
Timing Support	IEEE 1588v2 PTP Ordinary Clock Slave	
Multicast Support	IGMP v2/v3 and MLD v1/v2	
Authentication	802.1X port-based EAP-TLS	
DOCSIS Operation Mode	Remote PHY	
	ERM412	ERM422
Segmentation	1x1, 1x2	1x1, 1x2, 2x2, 2x4 (High Split)
DOCSIS 3.1 OFDM DS Channels	9 OFDM	12 OFDM
DOCSIS 3.1 US Channels	8 OFDMA	8 OFDMA
Maximum DS SC-QAMs	160 Annex A/B per Service Group	
DOCSIS 3.0 DS Channels	160 Annex A/B per Service Group (shared with DS Video)	
DOCSIS 3.0 US Channels	24 ATDMA	24 ATDMA
Video QAM DS Channels	160 Annex A/B per Service Group (shared with DS DOCSIS)	
Video QAM Input Support	MPTS over L2TPv3 (R-DEPI)	
	10ms de-jitter, PCR restamping, NULL insertion/deletion, Synchronous and Asynchronous mode support	
US OOB	6 SCTE 55-1/2, SCTE 25-1, or NDR	
	2 narrowband FFTs 1 wideband FFT	
DS OOB	12 SCTE 55-1/2, SCTE 25-1, or NDR	
*Specifications may be dependent on CCAP core support		
Control & Management		
Primary Interface	CCAP Core, Aux Core(s)	
Troubleshooting Interface	SSH	

Supported Node Chassis		
Vecima	EN9000, EN3400, EN8800U	
Cisco / ATX / AOI	GS7000	
Module / Power / Environmental		
Dimensions (H x W x L)	46 x 171 x 239 mm (1.8 x 6.7 x 9.4 in)	
Weight	< 3.62 lbs (1.64 kg)	
Voltage	25V +/- 5%	
Current		
ERM412 UHS-396	2.3 A Typical	
ERM412 Shifted FDX	2.8 A Typical	
ERM422 UHS-396	2.7 A Typical	
ERM422 Shifted FDX	3.0 A Typical	
Power		
ERM412 UHS-396	57 W Typical	
ERM412 Shifted FDX	70 W Typical	
ERM422 UHS-396	68 W Typical	
ERM422 Shifted FDX	75 W Typical	
DS RF Ports		
4 x SMB (75 ohm)		
DS RF Feedback Ports		
4 x SMB (75 ohm)		
US RF Ports		
4 x SMB (75 ohm)		
SFP+ Ports		
2 x 10 / 25 GE		
Temperature (Operating)		
-40 to +60°C (-40 to +140°F) ambient node housing		
Humidity (Operational)		
5 to 95%		
Mounting		
EN9000, EN3400	Direct Mounting	
EN8800U	ECB Adaptor	
GS7000	Direct Mounting	
Regulatory, Industry, and Standards Compliance		
EMC (Immunity/Emissions)	EN 55032, EN 55035, ICES-003, FCC PART 15 SUBPART B, (AS/NZS) CISPR 32	
Safety	IEC/EN 62368-1	
Hazardous Substance	IEC/EN 63000: 2018, RoHS Directive 2015/863/EU	
WEEE Directive	2012/19/EU	
REACH	Regulation (EC) No 1907/2006	