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.

### 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)
R-PHY Access Node Specifications

### RF Specifications

<table>
<thead>
<tr>
<th>Impedance</th>
<th>75Ω</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return Loss</td>
<td>16 dB min. &gt;18 dB typ</td>
</tr>
<tr>
<td>Maximum Output Power</td>
<td>+64 dBmV (virtual)</td>
</tr>
<tr>
<td>MER (equalized)</td>
<td>41 dB</td>
</tr>
<tr>
<td>Downstream Linear Tilt (Software Controlled)</td>
<td>15-21 dB over 108-1218 MHz</td>
</tr>
<tr>
<td>Hum Modulation</td>
<td>-50 dBc</td>
</tr>
<tr>
<td>Upstream Nominal Set Point, DOCSIS</td>
<td>-4 to +20 dBmV/6.4 MHz, QPSK to 64 QAM</td>
</tr>
<tr>
<td>Downstream Mute (SW Controlled)</td>
<td>&gt;10W power reduction per node RF port</td>
</tr>
</tbody>
</table>

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

### Chassis / Power / Environmental

<table>
<thead>
<tr>
<th>Dimensions (H x W x L)</th>
<th>11.3&quot; x 11.0&quot; x 23.9&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>&lt;50 lb (22.7 kg)</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>45-90 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>AC Current Passing</td>
<td>15A max</td>
</tr>
<tr>
<td>Temperature (Operational)</td>
<td>-40 to 60°C (-40 to 140°F)</td>
</tr>
<tr>
<td>Humidity (Operational)</td>
<td>5 to 95%</td>
</tr>
<tr>
<td>Mounting</td>
<td>Strand, Pedestal, Wall</td>
</tr>
</tbody>
</table>

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### Control & Management

<table>
<thead>
<tr>
<th>Primary interface</th>
<th>Connected CCAP Core(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Troubleshooting interface</td>
<td>SSH</td>
</tr>
</tbody>
</table>

### 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
- **OOG DS**: 1 x SCTE 55-1, 1 x SCTE 55-2 (native)
- **OOG US**: 3 x SCTE 55-1, 1 x SCTE 55-2 (native)
- **AGC, Alignment and Leakage Detection Tones**: 4 x Dedicated CW (54 MHz to 1218MHz)
- **Video QAM Input Support**: MPTS over L2TPv3 (R-DEPI)
  - 10ms de-jitter, PCR stamping, NULL insertion/deletion

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### R-PHY Access Node Subsystems

- **Port Entry Boards - RF Enabled**: DOCSIS 3.1 OFDM 192 MHz
- **Port Entry Boards - AC Power Only**: 2 x 10GE
- **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
- **OOG DS**: 1 x SCTE 55-1, 1 x SCTE 55-2 (native)
- **OOG US**: 3 x SCTE 55-1, 1 x SCTE 55-2 (native)
- **AGC, Alignment and Leakage Detection Tones**: 4 x Dedicated CW (54 MHz to 1218MHz)
- **Video QAM Input Support**: MPTS over L2TPv3 (R-DEPI)
  - 10ms de-jitter, PCR stamping, NULL insertion/deletion

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

### RF Specifications

- **Impedance**: 75Ω
- **Return Loss**: 16 dB min. >18 dB typ
- **Maximum Output Power**: +64 dBmV (virtual)
- **MER (equalized)**: 41 dB
- **Downstream Linear Tilt (Software Controlled)**: 15-21 dB over 108-1218 MHz
- **Hum Modulation**: -50 dBc
- **Upstream Nominal Set Point, DOCSIS**: -4 to +20 dBmV/6.4 MHz, QPSK to 64 QAM
- **Downstream Mute (SW Controlled)**: >10W power reduction per node RF port

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

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