



Real World  
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## Ethernet Over PDH Access Platform TAG10

The TAG-10 Ethernet over PDH unit enables Ethernet and legacy services over bonded PDH infrastructure for SMB, wireless backhaul and access aggregator devices. TAG-10c is part of the family of solutions in Telrad Access MSPP line for operators with hybrid TDM and IP networks

Today's operators are looking for ways to manage hybrid networks where the end points are Ethernet-enabled, but the transport infrastructure is TDM based. As users are adding IP-Based services to their handsets, in addition to traditional voice services transitional Solutions such as Ethernet over PDH provide a cost-effective solution with minimal uptime and minimal risk.

TAG-10c is a 1U desk, wall or rack mounted Customer Premises Unit (CPE), featuring mapping of Ethernet frames via standard GFP/X.86 framing into bonded DS1/E1/J1 and DS3 PDH signals. TAG-10c is available in various configurations, distinguished by bandwidth capacity towards the network side (NNI). Interfaces and capabilities of the various configurations are described in the specifications tables.

### The Telrad Difference

Telrad Networks stands out as a supplier of EoPDH and carrier Ethernet solutions in providing the widest range of configurations for CPE equipment. Telrad provides private-label solutions, taking on the development risk as well as the entire supply chain management, to provide a wide range of solutions for re-branding, customization and distribution.

### Benefits

- Preserves existing infrastructure
- Allows gradual transition and support Mix Services of PDH and Ethernet over PDH
- GE or FE copper or Optical over PDH
- Transport Ethernet over PDH with best efficiency
- Carrier Grade and future proof, allowing remote upgrade
- Support of BITs In/out and External In/out sensors
- Standards-based interoperability
- Customizable according to specifications

Telrad's proven track record of end-to-end Carrier Ethernet solution.  
For Wireless Backhaul and Business Service Delivery.

### Specifications:

|                          |   |
|--------------------------|---|
| User interfaces (UNI)    | <ul style="list-style-type: none"> <li>• 2x GE and 2xFE</li> <li>• 16xDS1/E1+ 2xGE +2xFE</li> </ul>   |
| Network Interfaces (NNI) | <ul style="list-style-type: none"> <li>• 8x DS1/E1/J1</li> <li>• 16x DS1/E1/J1</li> <li>• 2x DS3</li> <li>• 3x DS3</li> </ul>   |
| L1 Services              | <ul style="list-style-type: none"> <li>• Ethernet over bonded DS1/E1/J1/DS3- GFP per G.7041, G.8040, LAPS X.86</li> <li>• Up to 4 VCAT groups as defined by ITU-T G.7042 and G.7043</li> </ul>  |
| L2 Encapsulation         | <ul style="list-style-type: none"> <li>• IEEE 802.3</li> <li>• IEEE 802.1p/q</li> <li>• Q-in-Q as defined by 802.1ad</li> </ul>   |
| Ethernet services        | <ul style="list-style-type: none"> <li>• Ethernet Privet line (E-PL),</li> <li>• Ethernet Virtual Privet Line (E-VPL)</li> </ul>  |
| Traffic Management       | <ul style="list-style-type: none"> <li>• Auto negotiation - pause control</li> <li>• Rate limiting on NNI/UNI</li> <li>• 4 QoS queues</li> <li>• Scheduling: SP, WRR</li> </ul>   |
| OAM and PM               | <ul style="list-style-type: none"> <li>• Ethernet OAM (802.3ah, 802.1hg) and PM</li> <li>• E1/DSI/JI1 DS3/E3/STM1/4 loop back, alarms and PMs</li> <li>• Alarms IWF between Ethernet and TDM</li> <li>• VCAT/GFP/LCAS alarms</li> <li>• Built in Ethernet cable tester</li> </ul> |
| Protection               | <ul style="list-style-type: none"> <li>• LACS on PDH</li> <li>• 1+1 on DS3</li> </ul>   |

|                           |  |
|---------------------------|--|
| Timing Synchronization    | <ul style="list-style-type: none"> <li>• Clock recovery from: E1/DS1/J1 or DS3/E3 interfaces</li> <li>• Loop timing</li> <li>• Internal :stratum4, stratum 3</li> <li>• holdover mode</li> </ul>                                       |
| Management                | <ul style="list-style-type: none"> <li>• Out of band management (RS232, LAN) via CLI.</li> <li>• In band management via SNMP, Telnet.</li> <li>• Management security- SSH</li> <li>• SFTP for image, configuration transfer</li> </ul> |
| Mechanical Specifications | <ul style="list-style-type: none"> <li>• Dimensions: 1U , 440mm, 220mm</li> <li>• Rack : ETSI , 19", 23"</li> <li>• Desktop or wall (optional) mount</li> </ul>  |
| Power Options             | <ul style="list-style-type: none"> <li>• 110 ~ 240VAC</li> <li>• -36 to - 75 VDC</li> <li>• Redundant AC/DC power supply (optional)</li> </ul>   |
| Environmental             | <ul style="list-style-type: none"> <li>• 0°C to 50°C</li> <li>• -40°C to 65°C (optional)</li> <li>• Storage- 40°C to 85°C</li> </ul>   |
| Regulatory                | <ul style="list-style-type: none"> <li>• NEBS Level 3 ( optional )</li> <li>• FCC Part 15, Class A</li> <li>• UL 60950/ cUL /EN</li> <li>• CE Mark</li> <li>• ETSI TBR4,BR12,TBR13</li> <li>• RoHS</li> </ul>                          |



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**Ordering:**

| Model       | UNI                | NNI      | Operating Temperature  |
|-------------|--------------------|----------|------------------------|
| TAG10c-8    | 2xGE +2xFE         | 8 x DS1  | Commercial or Extended |
| TAG-10c-16* | 2xGE +2xFE         | 16 x DS1 | Commercial or Extended |
| TAG-10c-56  | 2xGE +2xFE         | 2xDS3    | Commercial or Extended |
| TAG-10c-60* | 16xDS1+ 2xGE +2xFE | 3xDS3    | Commercial or Extended |

\* Future

Specifications are subject to change without notice.

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