The MN5300 is a new product based on Pseudowire over MPLS-TP technology; it has been developed to overcome the data traffic consuming at most carrier’s bandwidth in current SDH/SONET based infrastructure. As a convergence transport technology, the MN5300 is the key fact for today’s metro network carriers and services providers. Equipped with enhanced data service processing capability and powerful network management function, the MN5300 can provide all-round network solutions at the access layer and aggregation layer of a Metropolitan Area Network (MAN), enormously reducing the operation cost. While MN5300 can apply in both User Provider Edge (UPE) and Network Provider Edge (NPE) solutions, NEC also introduces MN5200, which will mainly be positioned as UPE at metro network. For more detailed information on MN5200, please refer to its documentation data.

LAYER ARCHITECTURE
With MN5300, the Ethernet, TDM (E1/T1 - SDH/SONET) or ATM payloads are transported over the Pseudowire layer, where the payloads can be encapsulated and multiplexed/de-multiplexed into a single MPLS-TP tunnel. MPLS-TP layer provides the transport tunnel for the traffic been transferred across the IP/MPLS core network. At physical layer, the MN5300 can use Ethernet and/or both SDH/SONET transport technologies. The architecture of MN5300 is described in the figure bellow:
**Technical Summary**

**HARDWARE**
- **DIMENSIONS (H / W / D mm)**: 320 x 440 x 410 (7U)
- **WEIGHT**: 22kg (empty) / 41kg (full)
- **TEMPERATURE**: 5 °C to 40 °C
- **POWER SUPPLY**: -48V DC
- **Max. POWER CONSUMPTION**: Less than 700W fully loaded
- **HUMIDITY**: 5% to 85% non-condensing

<table>
<thead>
<tr>
<th>Interface type</th>
<th>Max. Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE/FE</td>
<td>36</td>
</tr>
<tr>
<td>10GE</td>
<td>6</td>
</tr>
<tr>
<td>STM-1 SDH/ATM</td>
<td>64</td>
</tr>
<tr>
<td>E1/T1 TDM</td>
<td>64</td>
</tr>
<tr>
<td>E1 IMA (or TDM)</td>
<td>256 (*)</td>
</tr>
<tr>
<td>STM-64 POS</td>
<td>6</td>
</tr>
<tr>
<td>STM-16 POS</td>
<td>6</td>
</tr>
<tr>
<td>STM-1 POS</td>
<td>6</td>
</tr>
</tbody>
</table>

**Interface**
- **Client Interface**: GE, FE, 10GE, STM-1 SDH/ATM, E1, T1
- **Uplink Interface**: GE, 10GE, STM-64/STM-16/STM-1 POS

**PROTECTION SCHEME**
- Hardware redundancy: 1+1 power supply, 1+1 OAM card, 1+1 SPCA/SPCB(*) card (Clock and switch fabric), 2:1 32 E1/T1 Card Failure Protection (CFP)
- Network Protection: 1+1 Linear MSP (ITU-T G.841 Annex B) for STM-1 (ATM or SDH), 1:1 Linear MSP for STM-1 (ATM or SDH); 1+1 and 1:1 Linear protection for LSP

**TIMING/SYNCHRONIZATION**
- POS interface: Line timing and SSM (S1 byte) transmission
- FE/GE/10GE interface: Synchronization Ethernet, Line timing
- Free run: ±4.6ppm (ITU G.813)
- Holdover: ±0.05ppm (better than ITU G.813: ±0.37ppm) within 24 hours
- Provide sync signal for 3G Base Station: External timing output; Traceable STM-1 ATM interface as line timing source
- Provide 1pps+tod time input and output (with SPCB*)
- Any FE/GE/10GE interface support 1588v2 (with SPCB*)

**NETWORK MANAGEMENT**
- SpectraWave MN9200(EMS), LCT (Local Craft Terminal)

**STANDARDS & RECOMMENDATIONS**
- ITU-T: G.8110, G.8110.1, Y.1711, Y.1720, Y.1731(*)
- IEEE: 1588v2(*), 802.1ag(*), 802.3ah
- (*) future release

**PACKET PROCESSING CAPACITY**
- 108Gbps full duplex switching fabric

**MPLS-TP FEATURES**
- 8K MPLS label per MN5300 Chassis (Shared by PW/LSP)
- EXP-Inferred-PSC LSPs (E-LSP)
- Label-only-Inferred-PSC LSPs (L-LSP)
- Per platform Label space support
- Bi-directional and Uni-directional MPLS-TP trail
- Diff-Serv support:
  - 2 service levels for TDM Emulation (E1/T1, SDH/SONET)
  - 4 service levels for statistical multiplexing traffic (ATM)
  - 8 service levels supported in the Network (Data Service)
- MPLS OAM including protection switching
- Virtual Circuit Connection Verification (VCCV)
- LSP Ping/TraceRoute
- EMS/SNMS manually controls the setup and the release of PW and LSP
- Ether OAM

**Additional Information**

× Before installing, connection or using this product, be sure to carefully read and observe the cautionary and prohibited matters provided in the instruction manual.

Tools of Multi-Services ![Image](image.png)

Published by:
NEC Corporation
Global Network Division

For inquiries, contact:

Issue 2.0 Mar 2010