TJA - Jitter Attenuator and Lobe Distance Extender

Description

The TJA is a Jitter Attenuator and Lobe Distance Extender module for the RADring hub, which provides improved operation of the Token Ring network and extended distances on the lobes. The TJA placed in any slot of the RADring hub receives the IEEE 802.5 signal on the main path of the backplane of the hub, and using a unique jitter reduction and repeater circuit, regenerates a clean jitter free signal in the direction of the next inserted station on the ring.

When operating in conjunction with repeater modules TCR (UTP/STP) or TFR (fiber optics) the use of the TJA enables guaranteed extended distances on the lobes, irrespective of the configuration of the rest of the ring. This accommodates easy planning and calculation of the network.

Operation in conjunction with extended distance lobe access modules TL-2/ED (UTP/STP), TL-4/CX (coax) or TL-2/F (fiber optic) provides a lobe repeater function for connection of remote workstations or satellite access units and hubs.

The jitter attenuation function can be enabled by means of an internal switch or by management command from the RADnet management station. In addition 4 or 16 Mbps operation can be defined manually by a switch or by the management. The TJA can also be bypassed by means of a management command.

Front panel LEDs provide indication of management intervention, fault condition, jitter attenuation activity and 4 or 16 Mbps operation.

TJA Front Panel Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR</td>
<td>Power on (green). Lights when the TJA module receives power.</td>
</tr>
<tr>
<td>MNG</td>
<td>Module under network management control (green). Lights when bypass command is being forced by the management station.</td>
</tr>
<tr>
<td>FLT</td>
<td>ON when signal fault condition exists (red).</td>
</tr>
<tr>
<td>ON</td>
<td>Lights when jitter attenuator is enabled (green).</td>
</tr>
<tr>
<td>OFF</td>
<td>Lights when jitter attenuator is disabled (green).</td>
</tr>
<tr>
<td>4</td>
<td>Lights when module selected to operate at 4 Mbps (green).</td>
</tr>
<tr>
<td>16</td>
<td>Lights when module selected to operate at 16 Mbps (green).</td>
</tr>
</tbody>
</table>
Specifications

Transmission Range

For IBM type 1 (STP) cable:
- 750 m / 2500 feet at 4 Mbps
- 300 m / 1250 feet at 16 Mbps

For IBM type 3 (UTP) cable:
- 350 m / 1100 feet at 4 Mbps
- 150 m / 550 feet at 16 Mbps

Jitter Attenuation Curves

Data Rate

4 or 16 Mbps, switch selectable

Data Format

Balanced bipolar Differential Manchester encoded

Output Level

4 V (on 150 ohms)

Physical

Occupies one slot in RADring enclosure
- Height: 128 mm / 5.04 in
- Width: 20 mm / 0.8 in
- Depth: 170 mm / 6.69 in
- Weight: 154 g / 5.5 oz

Power Consumption

550 mA (max) at 5 VDC

Environment

Temperature: 0-50°C / 32-122°F
Humidity: Up to 90%, non-condensing
**Set-Up**

TJA modules occupy one slot of the RADring enclosure. The modules can be installed or removed while power is applied to the enclosure.

1) Set the TJA switches according to the table below for the required application.

2) Plug the module into the designated enclosure slot, as marked on the site installation plan. Fasten module by means of one screw. Do not overtighten.

3) Check that on each TJA module LEDs light according to the set-up.

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**TJA Strapping Diagram**

**TJA Jumper/Switch Settings**

<table>
<thead>
<tr>
<th>Strap Identity</th>
<th>Function</th>
<th>Possible Settings</th>
<th>Factory Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNG</td>
<td>Controls jitter attenuation by the management system</td>
<td>ON or OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>JA</td>
<td>Jitter Attenuator On/Off</td>
<td>ON or OFF</td>
<td>ON</td>
</tr>
<tr>
<td>4m/16m</td>
<td>Operating data rate</td>
<td>4 Mbps or 16 Mbps</td>
<td>16 Mbps</td>
</tr>
</tbody>
</table>
**Application**

**Typical Application for TJA**

See Chapter 6 for detailed information on network configuration with TJA.