

## Cisco Multimedia Stretch Taps - Technician Access (MMST-TA)

The Multimedia Stretch™ Tap - Technician Access (MMST-TA) is designed to support the delivery of advanced applications and services in a cost-effective platform. In addition to providing high-quality RF performance specifications essential for reliable transmission of data and digital video services, the MMST-TA includes the capability to house other performance enhancing options. For example, we have produced a version of the plug-in directional coupler module that cost-effectively balances reverse path signals, resulting in a marked performance improvement in this challenging portion of the network.

During system upgrades, operators are challenged to quickly install new equipment while minimizing the impact on customers. Splicing taps is a time-consuming process complicated by a widened gap in the feeder cabling. The MMST-TA features a nine-inch housing that fills this gap without using costly or performance reducing extension connectors while providing operators with the fastest way to restore service and complete upgrade efforts.

The MMST-TA also provides an important level of network flexibility by enabling reversibility. As operators expand the fiber optic portion of their broadband networks, the result is often a reversal of the feeder signal flow. By simply changing the orientation of the plug-in directional coupler module, technicians can avoid time-consuming and expensive resplicing of the cable. The plug-in directional coupler module further adds to the flexibility of the tap, and helps to control inventory expense. By removing and replacing the on-board device, operators are able to modify tap values without resplicing.

Most importantly, the MMST-TA is designed for the future. Our engineers have maximized available space in the device to allow for adding future advanced features.

**Figure 1.** Multimedia Stretch Tap – Technician Access



## Features

- Patented Connection Beam's AC/RF bypass switch provides interruption-free service to downstream customers during faceplate removal
- Confined faceplate circuitry isolates and simplifies maintenance efforts
- Per-port power activation and protection, maximizing cost and customer service effectiveness
- Nine-inch housing simplifies system upgrades
- Plug-in directional coupler module enables field modification without costly resplicing
- Available in 2-, 4-, and 8-way versions
- Compatible with aerial or pedestal mounting
- Available space for future enhancements
- Capable of twisted pair per-port powering with the addition of an add-on module

## Product Specifications

**Table 1.** Product Specifications

| Specification                          | Value                                                |
|----------------------------------------|------------------------------------------------------|
| <b>Surge Resistance</b>                |                                                      |
| IEEE Category B1                       | C62 4-991                                            |
| <b>Mechanical</b>                      |                                                      |
| F-port Interface                       | ANSI/SCTE 01 1996                                    |
| Entry-port Interface                   | SCTE IPS-SP-500                                      |
| <b>Emissions</b>                       |                                                      |
| FCC                                    | Part 76, subpart K                                   |
| EN 50083-2/A1                          | 1998                                                 |
| <b>Dimensions</b>                      |                                                      |
| Product (H x W x D)                    | 3.0 in. x 3.5 in. x 9.0 in. (76 mm x 89 mm x 230 mm) |
| <b>Environment Specifications</b>      |                                                      |
| Weathering                             | ASTM G 53                                            |
| Salt spray                             | ASTM B 117                                           |
| Chip resistance                        | ASTM D 3170                                          |
| Fungus growth rate of zero             | ASTM G 21                                            |
| 1/A2 1997                              | EN 50083                                             |
| <b>AC/RF Bypass Switch Performance</b> |                                                      |
| System Open Circuit Time               | 0 ms                                                 |
| Contact Resistance                     | 10 m Ohms max                                        |
| Current and Voltage Carrying           | 12 A 60/90 VAC                                       |
| RF Frequency Range                     | 5 to 1000 MHz                                        |
| Operating Temperature                  | -40° to 140°F (-40° to +60°C)                        |

**Table 2.** General Station Performance

| Specification                             | Value  |         |         |        |
|-------------------------------------------|--------|---------|---------|--------|
|                                           | 5 MHz  | 550 MHz | 750 MHz | 1 GHz  |
| Insertion Loss (typical)<br>Switch Active | 0.1 dB | 0.3 dB  | 0.9 dB  | 0.9 dB |
| Return Loss (typical)<br>Switch Active    | 48 dB  | 15 dB   | 15 dB   | 15 dB  |

**Note:** Unless otherwise noted, specifications reflect typical performance and are referenced to 68°F (20°C). Specifications are based upon measurements made in accordance with SCTE/ANSI standards (where applicable) using standard frequency assignments.

**Table 3.** Tap Value – 2-Way MMST-TA

|                                                 | Freq | Tap Value |     |      |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |
|-------------------------------------------------|------|-----------|-----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
|                                                 |      | 4 dB      |     | 8 dB |     | 11 dB |     | 14 dB |     | 17 dB |     | 20 dB |     | 23 dB |     | 26 dB |     | 29 dB |     |
|                                                 | MHz  | Mean      | Max | Mean | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max |
| Insertion Loss (dB)                             | 5    | -         | -   | 3.4  | 3.8 | 2.0   | 2.4 | 1.1   | 1.7 | 0.9   | 1.3 | 0.7   | 1.3 | 0.7   | 1.3 | 0.7   | 1.3 | 0.7   | 1.3 |
|                                                 | 40   | -         | -   | 3.2  | 3.7 | 1.5   | 1.9 | 0.9   | 1.4 | 0.7   | 1.1 | 0.5   | 1.0 | 0.5   | 1.0 | 0.7   | 1.0 | 0.6   | 1.0 |
|                                                 | 50   | -         | -   | 3.2  | 3.7 | 1.5   | 1.9 | 0.9   | 1.4 | 0.7   | 1.1 | 0.5   | 1.0 | 0.5   | 1.0 | 0.7   | 1.0 | 0.6   | 1.0 |
|                                                 | 450  | -         | -   | 4.1  | 4.5 | 2.2   | 2.9 | 1.6   | 2.1 | 1.4   | 2.0 | 1.1   | 1.7 | 1.1   | 1.6 | 1.1   | 1.6 | 1.1   | 1.6 |
|                                                 | 550  | -         | -   | 3.9  | 4.3 | 2.4   | 3.0 | 1.6   | 2.2 | 1.4   | 2.0 | 1.2   | 1.7 | 1.2   | 1.6 | 1.1   | 1.8 | 1.1   | 1.8 |
|                                                 | 750  | -         | -   | 3.6  | 4.6 | 2.2   | 3.5 | 1.8   | 2.3 | 1.6   | 2.0 | 1.3   | 1.8 | 1.3   | 1.8 | 1.2   | 1.8 | 1.2   | 1.8 |
|                                                 | 870  | -         | -   | 4.1  | 4.8 | 2.5   | 3.6 | 2.0   | 2.6 | 1.8   | 2.4 | 1.4   | 1.9 | 1.4   | 1.9 | 1.3   | 1.9 | 1.4   | 1.9 |
|                                                 | 1000 | -         | -   | 4.5  | 5.2 | 2.7   | 3.6 | 2.1   | 2.6 | 1.9   | 2.4 | 1.5   | 1.9 | 1.5   | 1.9 | 1.4   | 1.9 | 1.6   | 1.9 |
| Tap Loss (dB)<br><br>(max tolerance $\pm$ 1 dB) | 5    | 5.0       |     | 8.0  |     | 11.0  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                                                 | 40   | 5.0       |     | 8.0  |     | 11.0  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                                                 | 50   | 5.0       |     | 8.0  |     | 11.0  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                                                 | 450  | 4.5       |     | 8.0  |     | 11.0  |     | 14.0  |     | 17.0  |     | 19.5  |     | 22.5  |     | 25.5  |     | 28.5  |     |
|                                                 | 550  | 4.5       |     | 8.0  |     | 11.0  |     | 14.0  |     | 17.0  |     | 19.5  |     | 22.5  |     | 25.5  |     | 28.5  |     |
|                                                 | 750  | 4.5       |     | 8.5  |     | 11.5  |     | 14.0  |     | 17.0  |     | 19.5  |     | 22.5  |     | 26.0  |     | 28.5  |     |
|                                                 | 870  | 5.0       |     | 8.5  |     | 11.5  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 25.5  |     | 29.0  |     |
|                                                 | 1000 | 5.0       |     | 8.5  |     | 11.5  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.5  |     | 29.5  |     |
| Return Loss (dB, min)                           | 5    | 16        | 16  | 16   | 14  | 16    | 12  | 16    | 14  | 16    | 14  | 16    | 14  | 16    | 14  | 16    | 14  | 16    | 14  |
|                                                 | 10   | 18        | 15  | 18   | 16  | 18    | 16  | 18    | 16  | 18    | 17  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  |
|                                                 | 50   | 18        | 16  | 18   | 16  | 18    | 16  | 18    | 16  | 18    | 17  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  |
|                                                 | 750  | 18        | 14  | 18   | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 16  | 18    | 15  |
|                                                 | 870  | 18        | 14  | 18   | 14  | 18    | 14  | 18    | 14  | 18    | 15  | 18    | 14  | 18    | 15  | 18    | 14  | 18    | 14  |
|                                                 | 1000 | 18        | 14  | 18   | 14  | 18    | 14  | 18    | 14  | 18    | 15  | 18    | 18  | 18    | 15  | 18    | 14  | 18    | 14  |
| Tap-to-Tap Isolation (dB, min)                  | 5    | 18        |     | 18   |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                                                 | 11   | 18        |     | 18   |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                                                 | 750  | 18        |     | 18   |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                                                 | 1000 | 18        |     | 18   |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
| Out-to-Tap Isolation (dB, min)                  | 5    | 18        |     | 20   |     | 20    |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |
|                                                 | 11   | 18        |     | 20   |     | 20    |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |
|                                                 | 750  | 18        |     | 20   |     | 22    |     | 22    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |
|                                                 | 1000 | 18        |     | 20   |     | 22    |     | 22    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |

**Table 4.** Tap Value – 4-Way MMST-TA

|                        |                                | Tap Value |     |       |     |       |     |       |     |       |     |       |     |       |     |       |     |
|------------------------|--------------------------------|-----------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
|                        | Freq                           | 8 dB      |     | 11 dB |     | 14 dB |     | 17 dB |     | 20 dB |     | 23 dB |     | 26 dB |     | 29 dB |     |
|                        | MHz                            | Mean      | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max |
| Insertion Loss (dB)    | 5                              | -         | -   | 3.4   | 3.9 | 2.0   | 2.4 | 1.1   | 1.7 | 0.9   | 1.4 | 0.7   | 1.3 | 0.7   | 1.3 | 0.7   | 1.3 |
|                        | 40                             | -         | -   | 3.2   | 3.7 | 1.5   | 1.9 | 0.9   | 1.4 | 0.7   | 1.1 | 0.5   | 1.0 | 0.5   | 1.0 | 0.7   | 1.0 |
|                        | 50                             | -         | -   | 3.2   | 3.7 | 1.5   | 1.9 | 0.9   | 1.4 | 0.7   | 1.1 | 0.5   | 1.0 | 0.5   | 1.0 | 0.7   | 1.0 |
|                        | 450                            | -         | -   | 4.1   | 4.4 | 2.2   | 2.9 | 1.6   | 2.0 | 1.4   | 1.8 | 1.1   | 1.7 | 1.1   | 1.5 | 1.1   | 1.5 |
|                        | 550                            | -         | -   | 3.9   | 4.5 | 2.4   | 3.0 | 1.6   | 2.1 | 1.4   | 1.8 | 1.2   | 1.7 | 1.2   | 1.5 | 1.1   | 1.5 |
|                        | 750                            | -         | -   | 3.6   | 4.7 | 2.2   | 3.5 | 1.8   | 2.3 | 1.6   | 2.0 | 1.3   | 1.8 | 1.3   | 1.8 | 1.2   | 1.8 |
|                        | 870                            | -         | -   | 4.1   | 4.8 | 2.5   | 3.6 | 2.0   | 2.6 | 1.8   | 2.4 | 1.4   | 1.9 | 1.4   | 1.9 | 1.3   | 1.9 |
|                        | 1000                           | -         | -   | 4.5   | 5.2 | 2.7   | 3.6 | 2.1   | 2.6 | 1.9   | 2.4 | 1.5   | 1.9 | 1.5   | 1.9 | 1.4   | 1.9 |
| Tap Loss (dB)          | 5                              | 8.0       |     | 11.0  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 25.5  |     | 28.5  |     |
| (max tolerance ± 1 dB) | 40                             | 8.0       |     | 11.0  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 25.5  |     | 28.5  |     |
|                        | 50                             | 8.0       |     | 11.0  |     | 14.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 25.5  |     | 28.5  |     |
|                        | 450                            | 8.0       |     | 11.5  |     | 14.5  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 28.5  |     |
|                        | 550                            | 8.0       |     | 12.0  |     | 15.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                        | 750                            | 8.0       |     | 12.0  |     | 15.0  |     | 17.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                        | 870                            | 8.5       |     | 12.0  |     | 15.0  |     | 17.5  |     | 20.5  |     | 23.5  |     | 26.5  |     | 29.5  |     |
|                        | 1000                           | 8.5       |     | 11.5  |     | 15.0  |     | 17.5  |     | 20.5  |     | 23.5  |     | 26.5  |     | 30.0  |     |
| Return Loss (dB, min)  | 5                              | 16        | 16  | 16    | 14  | 16    | 12  | 16    | 14  | 16    | 14  | 16    | 14  | 16    | 14  | 16    | 14  |
|                        | 10                             | 18        | 12  | 18    | 17  | 18    | 15  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  |
|                        | 50                             | 18        | 12  | 18    | 17  | 18    | 15  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  |
|                        | 750                            | 18        | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 15  | 18    | 14  | 18    | 14  | 18    | 15  |
|                        | 870                            | 18        | 14  | 18    | 16  | 18    | 16  | 18    | 15  | 18    | 14  | 18    | 16  | 18    | 16  | 18    | 15  |
|                        | 1000                           | 18        | 15  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  |
|                        | Tap-to-Tap Isolation (dB, min) | 5         | 18  |       | 18  |       | 18  |       | 18  |       | 18  |       | 18  |       | 18  |       | 18  |
|                        | 11                             | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                        | 750                            | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                        | 1000                           | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                        | Out-to-Tap Isolation (dB, min) | 5         | 18  |       | 20  |       | 20  |       | 20  |       | 22  |       | 25  |       | 25  |       | 35  |
|                        | 11                             | 18        |     | 20    |     | 20    |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     |
|                        | 750                            | 18        |     | 20    |     | 22    |     | 22    |     | 22    |     | 25    |     | 25    |     | 35    |     |
|                        | 1000                           | 18        |     | 20    |     | 22    |     | 22    |     | 22    |     | 25    |     | 25    |     | 35    |     |

**Table 5.** Tap Value – 8-Way MMST-TA

|                                                 | Freq | Tap Value |     |       |     |       |     |       |     |       |     |       |     |       |     |
|-------------------------------------------------|------|-----------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
|                                                 |      | 11 dB     |     | 14 dB |     | 17 dB |     | 20 dB |     | 23 dB |     | 26 dB |     | 29 dB |     |
|                                                 | MHz  | Mean      | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max | Mean  | Max |
| Insertion Loss (dB)                             | 5    | -         |     | 3.4   | 3.9 | 2.0   | 2.4 | 1.1   | 1.7 | 0.9   | 1.4 | 0.7   | 1.3 | 0.7   | 1.3 |
|                                                 | 40   | -         |     | 3.2   | 3.7 | 1.5   | 1.9 | 0.9   | 1.4 | 0.7   | 1.1 | 0.5   | 1.0 | 0.5   | 1.0 |
|                                                 | 50   | -         |     | 3.2   | 3.7 | 1.5   | 1.9 | 0.9   | 1.4 | 0.7   | 1.1 | 0.5   | 1.0 | 0.5   | 1.0 |
|                                                 | 450  |           |     | 4.1   | 4.4 | 2.2   | 3.2 | 1.6   | 2.0 | 1.4   | 1.8 | 1.1   | 1.6 | 1.1   | 1.5 |
|                                                 | 550  |           |     | 3.9   | 4.5 | 2.4   | 3.2 | 1.6   | 2.1 | 1.4   | 1.8 | 1.2   | 1.7 | 1.1   | 1.5 |
|                                                 | 750  |           |     | 3.6   | 4.6 | 2.2   | 3.5 | 1.8   | 2.3 | 1.6   | 2.0 | 1.3   | 1.8 | 1.3   | 1.8 |
|                                                 | 870  |           |     | 4.1   | 4.8 | 2.5   | 3.6 | 2.0   | 2.4 | 1.8   | 2.2 | 1.4   | 1.9 | 1.4   | 1.9 |
|                                                 | 1000 |           |     | 4.5   | 5.2 | 2.7   | 3.6 | 2.1   | 2.6 | 1.9   | 2.4 | 1.5   | 1.9 | 1.5   | 1.9 |
| Tap Loss (dB)<br><br>(max tolerance $\pm 1$ dB) | 5    | 11.0      |     | 14.0  |     | 18.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                                                 | 40   | 11.5      |     | 14.0  |     | 18.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                                                 | 50   | 11.5      |     | 14.0  |     | 18.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 29.0  |     |
|                                                 | 450  | 11.0      |     | 14.5  |     | 18.0  |     | 20.0  |     | 23.0  |     | 26.0  |     | 28.5  |     |
|                                                 | 550  | 11.0      |     | 15.0  |     | 18.0  |     | 20.5  |     | 23.5  |     | 26.0  |     | 28.5  |     |
|                                                 | 750  | 11.0      |     | 15.5  |     | 18.0  |     | 20.5  |     | 24.0  |     | 26.0  |     | 28.5  |     |
|                                                 | 870  | 12.0      |     | 16.0  |     | 18.5  |     | 21.0  |     | 24.5  |     | 26.5  |     | 29.5  |     |
|                                                 | 1000 | 12.5      |     | 16.5  |     | 19.0  |     | 21.5  |     | 25.0  |     | 27.0  |     | 30.5  |     |
| Return Loss (dB, min)                           | 5    | 16        | 14  | 16    | 13  | 16    | 12  | 16    | 14  | 16    | 14  | 16    | 14  | 16    | 14  |
|                                                 | 10   | 18        | 12  | 18    | 16  | 18    | 15  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  |
|                                                 | 50   | 18        | 12  | 18    | 16  | 18    | 15  | 18    | 16  | 18    | 16  | 18    | 16  | 18    | 16  |
|                                                 | 750  | 18        | 14  | 18    | 14  | 18    | 15  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  |
|                                                 | 870  | 18        | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  |
|                                                 | 1000 | 18        | 15  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  | 18    | 14  |
| Tap-to-Tap Isolation (dB, min)                  | 5    | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                                                 | 11   | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                                                 | 750  | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
|                                                 | 1000 | 18        |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     | 18    |     |
| Out-to-Tap Isolation (dB, min)                  | 5    | -         |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |
|                                                 | 11   | -         |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |
|                                                 | 750  | -         |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |
|                                                 | 1000 | -         |     | 20    |     | 22    |     | 25    |     | 25    |     | 35    |     | 35    |     |

## Ordering Information

**Table 6.** Ordering Information

| Description                                                                                   | Part Number |
|-----------------------------------------------------------------------------------------------|-------------|
| <b>Complete Tap Assembly</b>                                                                  |             |
| Multimedia Stretch Tap – Technician Access, 2-Way                                             | 591766      |
| Multimedia Stretch Tap – Technician Access, 4-Way                                             | 591768      |
| Multimedia Stretch Tap – Technician Access, 8-Way                                             | 591770      |
| <b>Faceplate Assembly</b>                                                                     |             |
| Multimedia Stretch Tap – Technician Access, 2-Way Faceplate Assembly                          | 591767      |
| Multimedia Stretch Tap – Technician Access, 4-Way Faceplate Assembly                          | 591769      |
| Multimedia Stretch Tap – Technician Access, 8-Way Faceplate Assembly                          | 591771      |
| <b>Other Accessories</b>                                                                      |             |
| Positive Temperature Coefficient (PTC) Modules, qty. 100, <i>(required for port powering)</i> | 592049      |

| Tap Loss Value |       |       | 1 GHz Equalizer Value and Part Number |                    |                    |                    |                     |                     |                     |
|----------------|-------|-------|---------------------------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| 2-Way          | 4-Way | 8-Way | 0 dB<br>(standard)                    | 3 dB<br>(optional) | 6 dB<br>(optional) | 9 dB<br>(optional) | 12 dB<br>(optional) | 15 dB<br>(optional) | 18 dB<br>(optional) |
| 4 dB           | 8 dB  | 11 dB | 543487                                | 4038221            | 4038229            | 4038236            | 4038242             | 4038247             | 4038251             |
| 8 dB           | 11 dB | 14 dB | 562108                                | 4038222            | 4038230            | 4038237            | 4038243             | 4038248             | 4038252             |
| 11 dB          | 14 dB | 17 dB | 562109                                | 4038223            | 4038231            | 4038238            | 4038244             | 4038249             | 4038253             |
| 14 dB          | 17 dB | 20 dB | 562110                                | 4038224            | 4038232            | 4038239            | 4038245             | 4038250             |                     |
| 17 dB          | 20 dB | 23 dB | 562111                                | 4038225            | 4038233            | 4038240            | 4038246             |                     |                     |
| 20 dB          | 23 dB | 26 dB | 562112                                | 4038226            | 4038234            | 4038241            |                     |                     |                     |
| 23 dB          | 26 dB | 29 dB | 562113                                | 4038227            | 4038235            |                    |                     |                     |                     |
| 26 dB          | 29 dB | -     | 562114                                | 4038228            |                    |                    |                     |                     |                     |
| 29 dB          | -     | -     | 562115                                |                    |                    |                    |                     |                     |                     |



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