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Test Method for “F” Connector Return Loss

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1.0 SCOPE

The purpose of this procedure is to provide instructions to measure the Return Loss characteristics of a single type "F" connector to cable interface, at the beginning of a cable, from 5 MHz to 1000 MHz. This test method applies to SCTE specifications IPS-SP-402, IPS-SP-403, and IPS-SP-404. This test method makes use of the time domain gating feature of the network analyzer to remove the far end connector effects. from the near end connector under test.

2.0 EQUIPMENT

2.1 Vector Network Analyzer (VNA), with Time Domain capability installed; HP 8753A, B, or C, with Option 010 (Time domain) and a 75 ohm test set (such as HP 85044B or HP 85046B), or, an HP 8752B, or HP 8752C opt 75, or HP 8753D opt 75, with Option 010 Time Domain installed, or equivalent. Figure 1 shows a typical test set up.

2.2 Type "F" Calibration Kit, HP 85039A or equivalent:

Load – HP # 0955-0724 or equivalent

Open – HP # 0955-0725 or equivalent

Short – HP # 0955-0726 or equivalent

Type N(m)-TypeF(m) Adapter –
HP # 1250-2488 or equivalent

Type N(f)-Type F(m) Adapter –
HP # 1250-2490 or equivalent

Type F(f)-Type F(f) Adapter –(2 ea.)
HP # 1250-2489 or equivalent

3.0 TEST SAMPLES

3.1 The connector to be tested will be installed on the near end of a cable of the type for which it is intended, of approximately 10 feet (3 meters) length.

3.2 The far end of the cable is to be terminated in a good load (20 dB return loss). A second connector may be installed at the far end to allow proper termination.

3.3 Before performing the tests, visually inspect the cable and connectors to insure that there are no problems (such as cracks, punctures, bruises, dents, or poor contacts) which could affect the readings.