

Introduction:

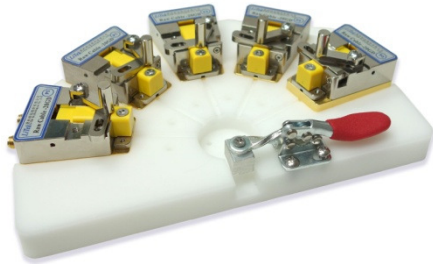


Figure 1: LT-100R-20GD-5P 5pair Raw Cable Test Fixture

Most interfaces, like SATA, SAS, LAN, Infiniband, DVI, HDMI, SFP ...etc, are designed with differential 100 ohms system. The bandwidth of these are wide up to 20GHz or higher. In this, a good test fixture (Jig) for testing the raw cable with multi-AWG would be very important.

S-Parameter and TDR Measurements:

Before using LT-100R-20GD-5P to measure S-Parameters, we may remove the effects of it. One of the ways is by LT-100R-20GC-CK calibration kit, measuring the effect of the thru and separating it by AFR. The other way is to measure the S-Parameter of the LT-100R-20GD and convert the S2P file into S4P file. After remove the loss effect, the electrical length of the test fixture will be also cleared for TDR measurements.

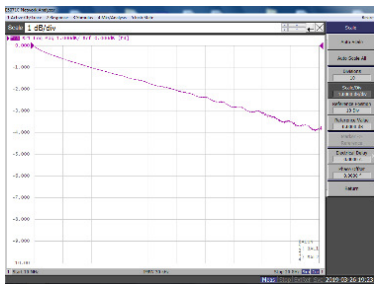


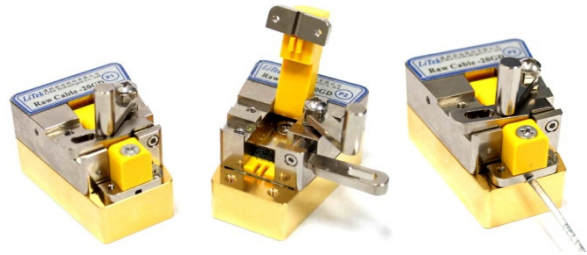
Figure 2: The SDD21 of Calibration Kit



Figure 3: LT-100R-20GC-CK Cal kit

Measurement implementation:

There is a twin groove used to separate the pair conductors of raw cable. The pair conductors of raw cable are connected with the pads on the fixture and pressed by the yellow-kit, and the shield of the raw cable is surrounded and pressed by the metal cover.



For different AWG of raw cables, the different suitable covers are used in order to make sure the shield is as close as to the cover groove.

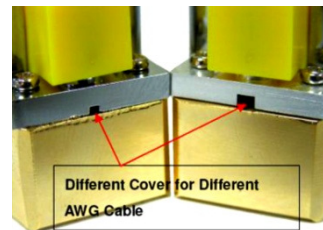


Figure 4: Different cover for Different AWG Cable

Fixture Features:

- ◆ Impedance control: Differential $100 \pm 2.5 \Omega$
- ◆ Support both Un-Shielded Twist Pair (UTP) and Shielded Twist Pair (STP) cables.
- ◆ Intra Pair Skew: Less than 2ps for each pair.
- ◆ Inter Pair Skew: Less than 5ps for all pairs.
- ◆ Multi-AWG support: 24AWG ~ 34AWG.
- ◆ Low Loss (2X Kit): Less than -5dB @20GHz. (It means single pair loss will be less than -2.5dB@ 20GHz.)
- ◆ Interfaces cable: ThunderBolt2/3, Lan up to 10G, HDMI2.1, DVI, SATA/SAS up to 24G, USB up to 4.0, DisplayPort, SFP/QSFP 100G, PCIE Gen3/4, ...etc.

Note:

100R-20GD-5P is combined by 5 pcs of LT-100R-20GD and a white base.

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