

Advantages of the use of the periodic training sequence

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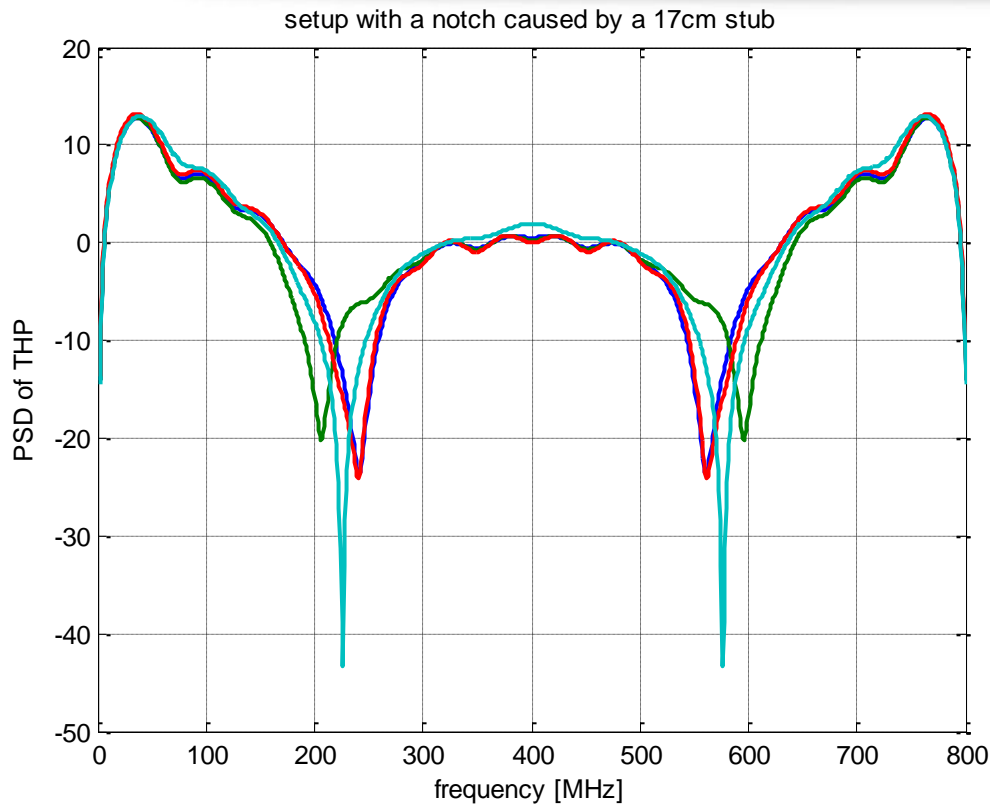
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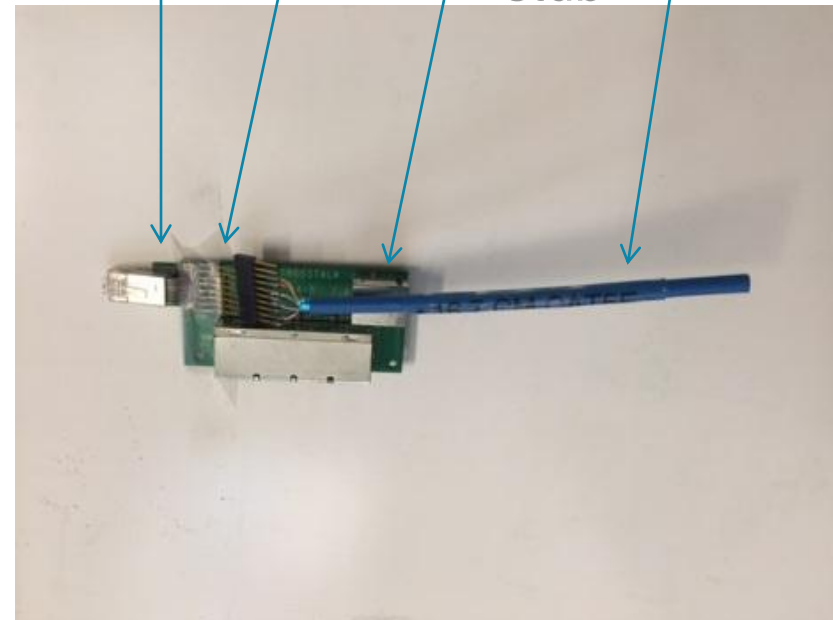
- 10G PTS
 - All during 2s startup, the transmitter is periodically resetting its transmit LFSR at 16384 boundaries.
 - Transmit signal not spectrally rich enough to adapt all equalization coefficients.
- Improvement:
 - PTS is used only for synchronization of the two link partners.
 - Fast and
 - Robust.
 - Switch to CTS in PBO Exchange
 - If scrambler reinitialization is used for normal training, it shall be disabled and the scramblers shall begin free-running when the PHY Control state diagram is in the state PMA_PBO_Exch and the receiver detects a valid requested transmitter PBO setting (Octet 7 Valid<7> equal to 1).
 - Training of the DFE for THP already sees the continuous training signal.

- Faster
 - Correlation receiver vs. blind equalization
 - 5x faster for Slave
 - 10x faster for Master
- Robust
 - Suck outs
 - Insertion loss: cable vendors satisfy the letter of the law
 - 5G over CAT5E
 - Suck outs possible above 100MHz.
 - Blind equalization needs to invert the channel
 - Creating something out of nothing leaves us with a lot of noise.
 - Blind equalization either fails or takes a long time to converge.
- Easy
 - Link partner that does not want to implement the PTS
 - Reset one bit, when a valid requested transmitter PBO is received.

Do not be surprised by cables having suck-outs! Create an in-band notch using a stub now.



RJ45 plug
Electrically connected
To TWP's
RJ45 connector
17cm CAT6A
stub



Please try this at home!

Thank you

