RS485 Communication Problem

Application: Solar Inverter

Device: SN65HVD12DR

Customer: WW

TI Information – Selective Disclosure

Problem Description

End customer found the failure behavior in the field side(Solar field) randomly. Customer tried to duplicate the failure problem, but it's difficult to do so.

2 months ago, customer setup an environment in the lab and doing communication between Inverter and meter equipment(read and write). With this setup, they keep to monitor behavior on communication Tx and Rx. However, they found the Tx and Rx has abnormal Communication (as N.G waveform next 2 pages) 2 days ag

They finally duplicated the similar problem after 2 months. They don't know the exactly possible root cause. Could you help to figure out how to explain it? Please also check the schematic. Is this possibly caused by the device circuit? Or other reason?

TI Information – Selective Disclosure

RS485 Communication Problem

Good Waveform
Which was measured
Two months ago.
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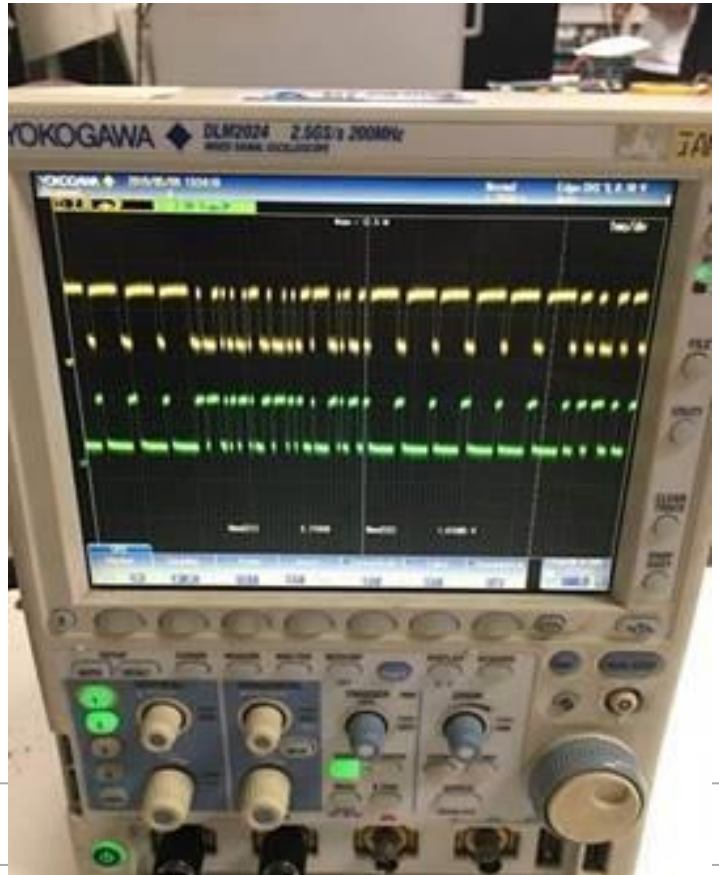
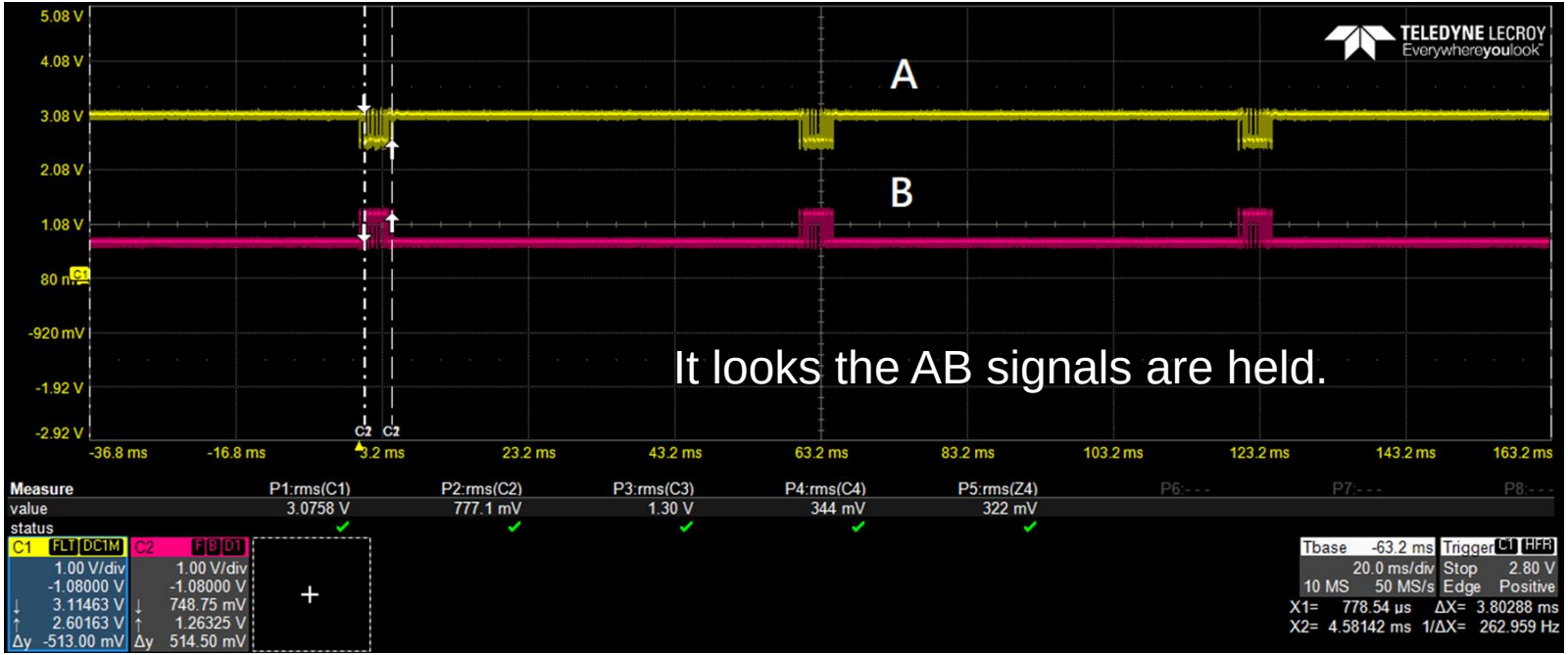


RS485 Communication Problem

PS: We checked the Slave side MCU UART is ok. Master side's UART is ok also.

N.G Waveform:



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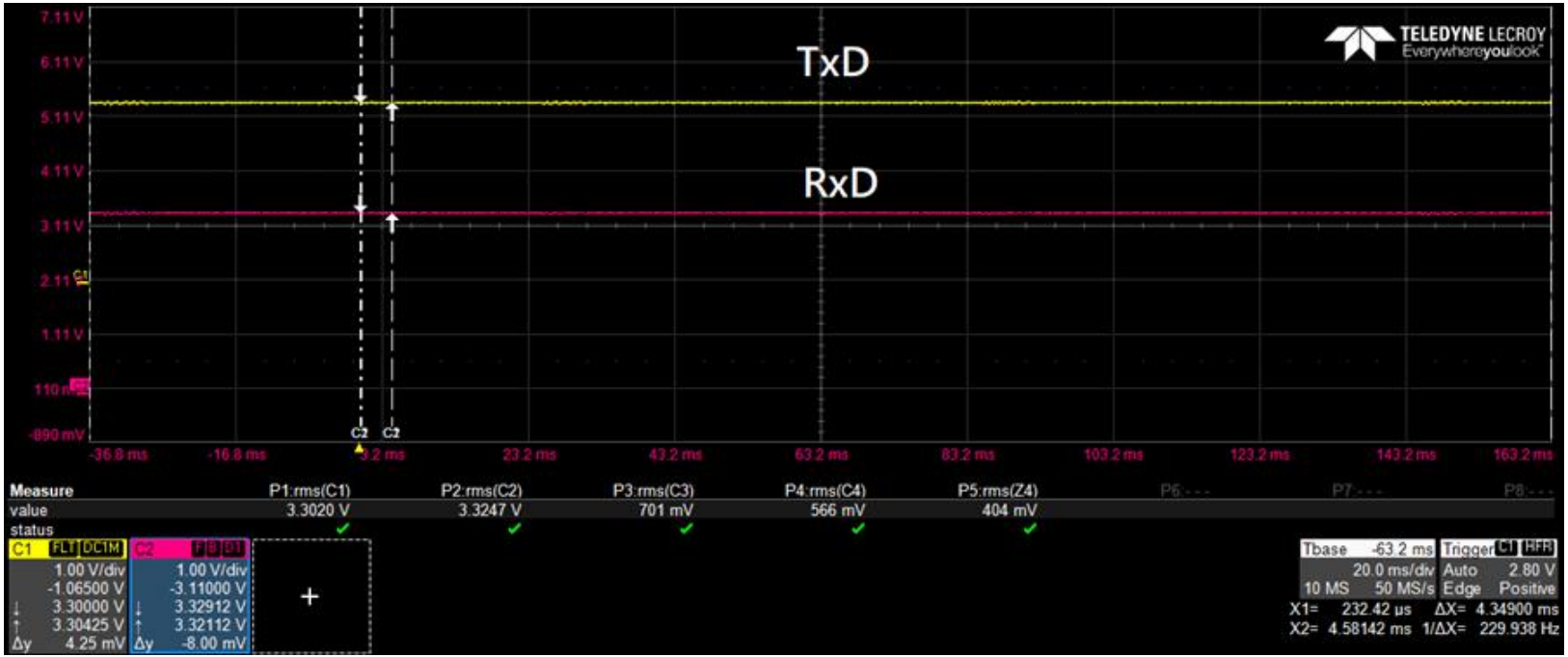
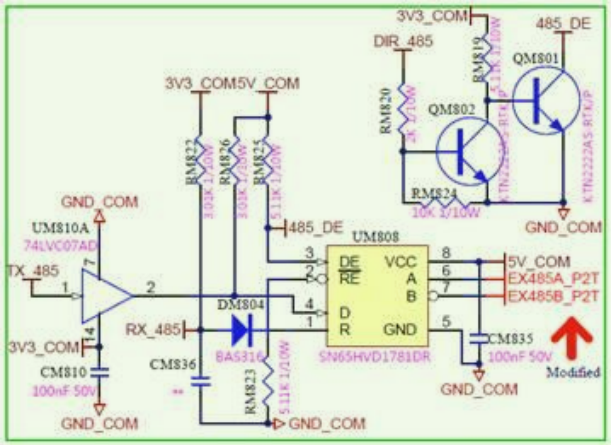
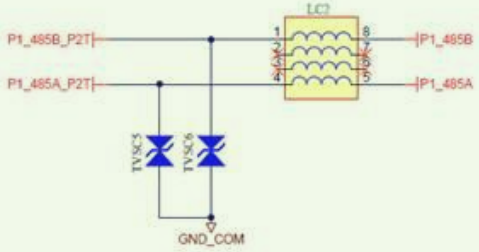
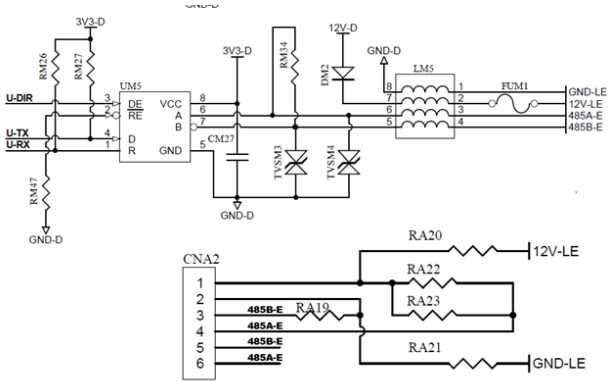
N.G Waveform:



Schematic

RS485 inverter side(Master)





Power Meter side(Slave)