PTDR-ERL for Channel Specification Improvement

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08/08/2017

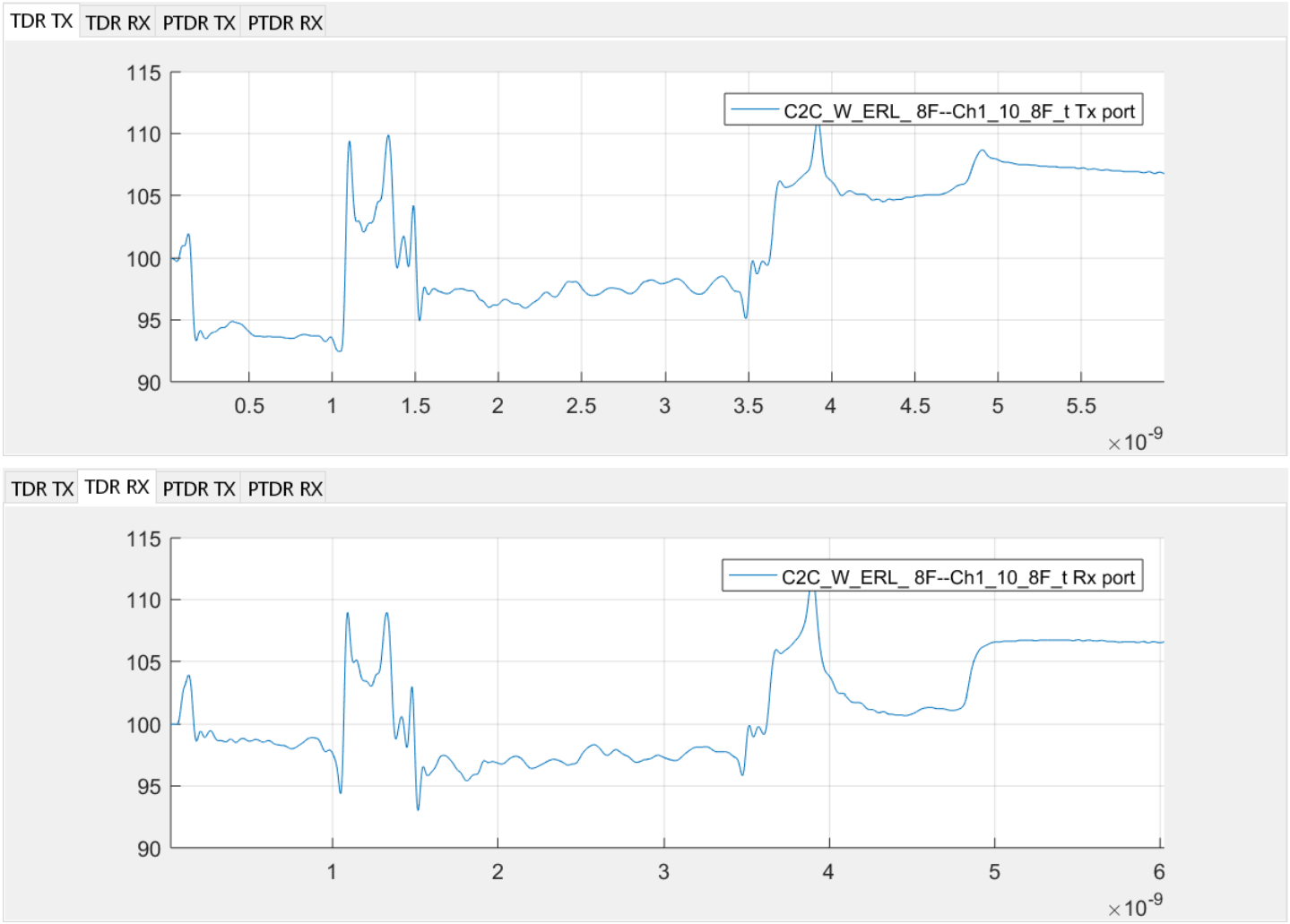
ToC

- ERL results
- TDR and PTDR for two channels
- Observations
- Discussion

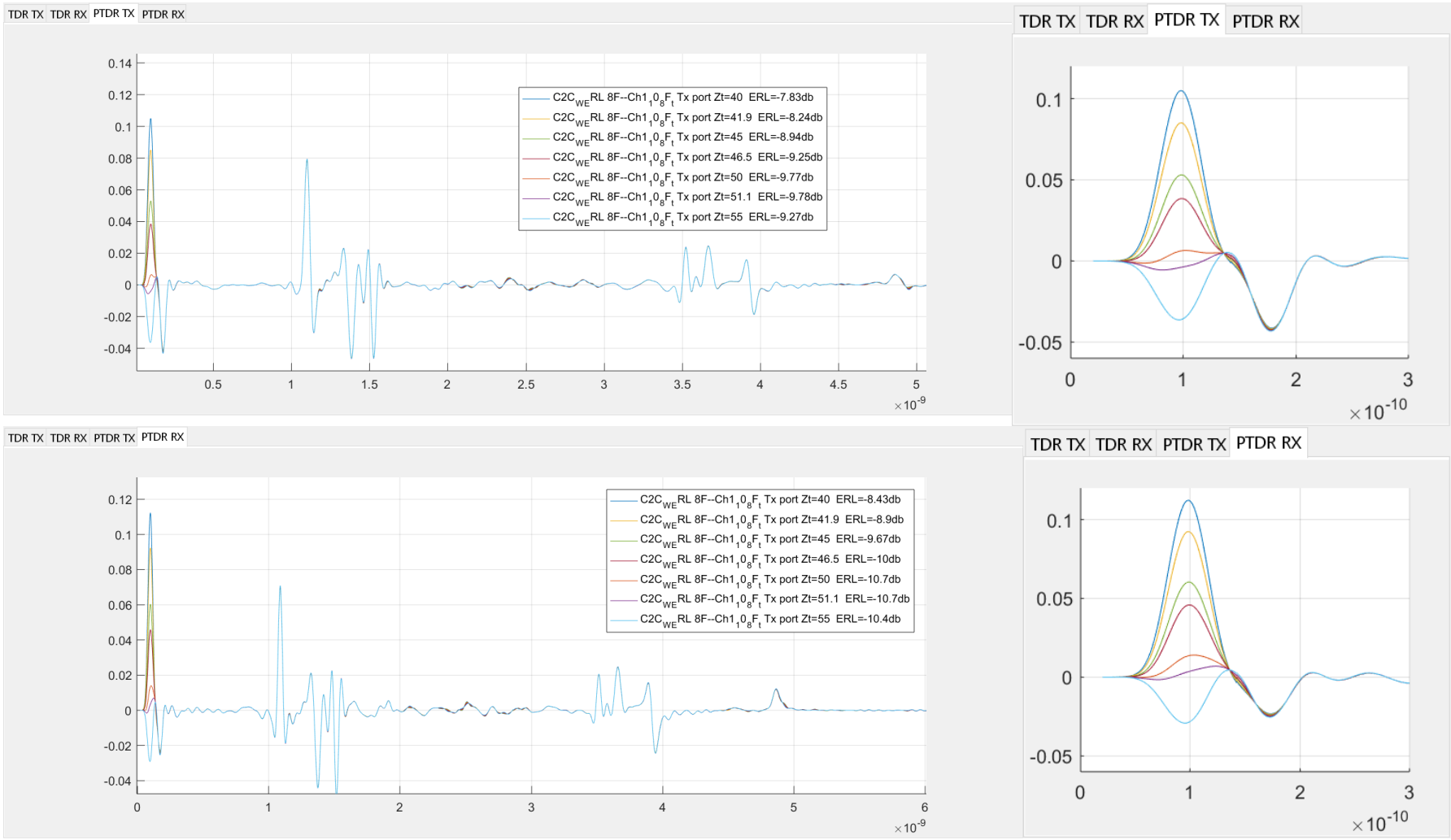
ERL and Impedance Results

Channel	ERL11 Z_t (dB)							ERL22 Z_t (dB)							Z11 Z_t	Z22 Z_t
Z_t- (ohms)->	40	41.85	45	46.5	50	51.15	55	40	41.85	45	46.5	50	51.15	55	50	50
"8F--Ch1_10_8F_t"'	-7.8	-8.2	-8.9	-9.3	-9.8	-9.8	-9.3	-8.4	-8.9	-9.7	-10.0	-10.7	-10.7	-10.4	96.6	99.2
"TEC_STRADAWhisper11p75in_Meg6_Channel_IEEE802_3_cd_Cu_07282016--TEC_Whisper11p75in_THRU_G14G15-07212016"'	-9.8	-10.4	-11.5	-11.9	-12.8	-12.8	-12.2	-9.5	-10.1	-11.0	-11.5	-12.4	-12.5	-11.9	97.8	97.1
"mellitz_01_021716_10dB_6_channels--PAM4_2conn_MP_v2_100ohm_10dB_Nom_thru"'	-8.6	-8.8	-8.7	-8.5	-7.9	-7.7	-7.0	-4.3	-4.5	-4.8	-4.9	-5.0	-4.9	-4.6	100.5	100.6
"mellitz_01_021716_10dB_6_channels--PAM4_2conn_MP_v2_100ohm_10dB_HzLzHz_thru"'	-9.0	-9.4	-9.1	-8.8	-8.1	-7.9	-7.2	-3.6	-3.8	-4.2	-4.4	-4.7	-4.8	-4.7	99.4	103.7
"mellitz_01_021716_10dB_6_channels--PAM4_2conn_MP_v2_100ohm_10dB_LzHzLz_thru"'	-6.6	-6.8	-6.9	-6.7	-6.3	-6.1	-5.6	-4.2	-4.4	-4.4	-4.4	-4.2	-4.1	-3.7	101.2	97.1
"mellitz_01_021716_10dB_6_channels--PAM4_2conn_MP_v2_85ohm_10dB_Nom_thru"'	-10.5	-10.9	-10.7	-10.3	-9.5	-9.2	-8.5	-7.5	-7.6	-7.4	-7.2	-6.6	-6.5	-5.9	90.8	92.1
"mellitz_01_021716_10dB_6_channels--PAM4_2conn_MP_v2_85ohm_10dB_HzLzHz_thru"'	-8.8	-9.1	-9.0	-8.7	-8.1	-7.9	-7.3	-4.6	-4.8	-5.2	-5.2	-5.2	-5.1	-4.8	89.8	94.9
"mellitz_01_021716_10dB_6_channels--PAM4_2conn_MP_v2_85ohm_10dB_LzHzLz_thru"'	-8.0	-8.1	-8.0	-7.8	-7.3	-7.1	-6.5	-6.8	-6.5	-6.0	-5.7	-5.2	-5.1	-4.6	91.3	89.1
"8F--Ch4_20_8F_t"'	-7.6	-7.9	-8.6	-8.9	-9.4	-9.4	-8.9	-9.7	-10.3	-11.3	-11.7	-12.3	-12.3	-11.6	96.5	99.0
"TEC_STRADAWhisper27in_Meg6_Channel_IEEE802_3_cd_Cu_07282016--TEC_Whisper27in_THRU_G14G15_07202016"'	-10.2	-10.9	-12.0	-12.5	-13.5	-13.6	-12.9	-9.8	-10.5	-11.5	-12.0	-12.8	-12.9	-12.2	98.3	97.5
"mellitz_01_021716_20dB_6_channels--PAM4_2conn_MP_v2_100ohm_20dB_Nom_thru"'	-11.3	-11.7	-11.4	-11.0	-10.0	-9.7	-8.9	-5.5	-5.9	-6.4	-6.6	-6.7	-6.6	-6.2	101.8	101.5
"mellitz_01_021716_20dB_6_channels--PAM4_2conn_MP_v2_100ohm_20dB_HzLzHz_thru"'	-11.6	-12.0	-11.8	-11.4	-10.4	-10.1	-9.2	-4.6	-4.9	-5.4	-5.6	-6.1	-6.2	-6.3	97.6	100.4
"mellitz_01_021716_20dB_6_channels--PAM4_2conn_MP_v2_100ohm_20dB_LzHzLz_thru"'	-9.4	-9.7	-9.6	-9.3	-8.5	-8.3	-7.5	-5.8	-6.0	-6.2	-6.1	-5.7	-5.6	-5.1	105.6	102.1
"mellitz_01_021716_20dB_6_channels--PAM4_2conn_MP_v2_85ohm_20dB_Nom_thru"'	-13.0	-13.5	-13.1	-12.6	-11.5	-11.1	-10.1	-8.7	-9.0	-8.7	-8.4	-7.7	-7.5	-6.8	88.9	89.7
"mellitz_01_021716_20dB_6_channels--PAM4_2conn_MP_v2_85ohm_20dB_HzLzHz_thru"'	-10.9	-11.3	-11.2	-10.8	-9.9	-9.6	-8.8	-5.5	-5.8	-6.3	-6.4	-6.4	-6.3	-5.9	85.3	88.9
"mellitz_01_021716_20dB_6_channels--PAM4_2conn_MP_v2_85ohm_20dB_LzHzLz_thru"'	-10.9	-11.1	-10.7	-10.4	-9.5	-9.3	-8.5	-8.1	-7.7	-7.1	-6.8	-6.3	-6.1	-5.6	92.2	90.3
"20dB_HghZ--20dB_HighZ_thru"'	-11.8	-12.6	-14.0	-14.7	-16.3	-16.6	-15.7	-11.6	-12.3	-13.7	-14.4	-15.8	-16.1	-15.2	109.3	109.1
"20dB_HghZ_Nom_HighZ--20dB_HighZ_Nom_HighZ_thru"'	-12.8	-13.7	-15.2	-16.1	-18.0	-18.3	-17.2	-12.5	-13.4	-14.9	-15.7	-17.5	-17.8	-16.6	105.1	104.9
"8F--Ch8_30_8F_t"'	-8.3	-8.7	-9.5	-9.8	-10.4	-10.4	-9.8	-10.0	-10.6	-11.6	-12.0	-12.8	-12.8	-11.9	96.7	99.3
"TEC_STRADAWhisper40in_Meg6_Channel_IEEE802_3_cd_Cu_07282016--TEC_Whisper40in_THRU_G14G15_07202016"'	-10.5	-11.2	-12.3	-12.9	-14.0	-14.1	-13.3	-10.1	-10.7	-11.8	-12.3	-13.2	-13.3	-12.5	98.3	97.4
"mellitz_01_021716_30dB_6_channels--PAM4_2conn_MP_v2_100ohm_30dB_Nom_thru"'	-12.1	-12.6	-12.3	-11.8	-10.7	-10.4	-9.4	-5.6	-6.0	-6.5	-6.8	-6.9	-6.8	-6.3	101.8	101.4
"mellitz_01_021716_30dB_6_channels--PAM4_2conn_MP_v2_100ohm_30dB_HzLzHz_thru"'	-12.5	-12.9	-12.6	-12.1	-11.0	-10.7	-9.7	-4.8	-5.1	-5.6	-5.8	-6.4	-6.5	-6.5	97.6	100.5
"mellitz_01_021716_30dB_6_channels--PAM4_2conn_MP_v2_100ohm_30dB_LzHzLz_thru"'	-10.3	-10.8	-10.6	-10.3	-9.3	-9.1	-8.2	-6.0	-6.3	-6.5	-6.4	-5.9	-5.8	-5.3	105.5	102.0
"mellitz_01_021716_30dB_6_channels--PAM4_2conn_MP_v2_85ohm_30dB_Nom_thru"'	-14.1	-14.7	-14.3	-13.7	-12.3	-11.9	-10.8	-9.1	-9.4	-9.1	-8.7	-8.0	-7.8	-7.1	88.9	89.7
"mellitz_01_021716_30dB_6_channels--PAM4_2conn_MP_v2_85ohm_30dB_LzHzLz_thru"'	-12.2	-12.4	-11.9	-11.5	-10.5	-10.2	-9.2	-8.4	-8.0	-7.4	-7.1	-6.5	-6.3	-5.8	92.2	90.3
"mellitz_01_021716_30dB_6_channels--PAM4_2conn_MP_v2_85ohm_30dB_HzLzHz_thru"'	-11.7	-12.2	-12.0	-11.6	-10.6	-10.3	-9.4	-5.8	-6.2	-6.7	-6.8	-6.8	-6.7	-6.2	85.3	88.9
"30dB_HghZ_Nom_HighZ--30dB_HighZ_Nom_HighZ_thru"'	-13.1	-14.0	-15.7	-16.5	-18.6	-19.1	-17.5	-13.0	-14.0	-15.6	-16.4	-18.4	-18.8	-17.2	104.3	104.2
"30dB_HighZ--30dB_HighZ_thru"'	-12.0	-12.8	-14.2	-14.9	-16.5	-16.9	-15.7	-12.0	-12.7	-14.0	-14.7	-16.3	-16.7	-15.5	110.3	110.2

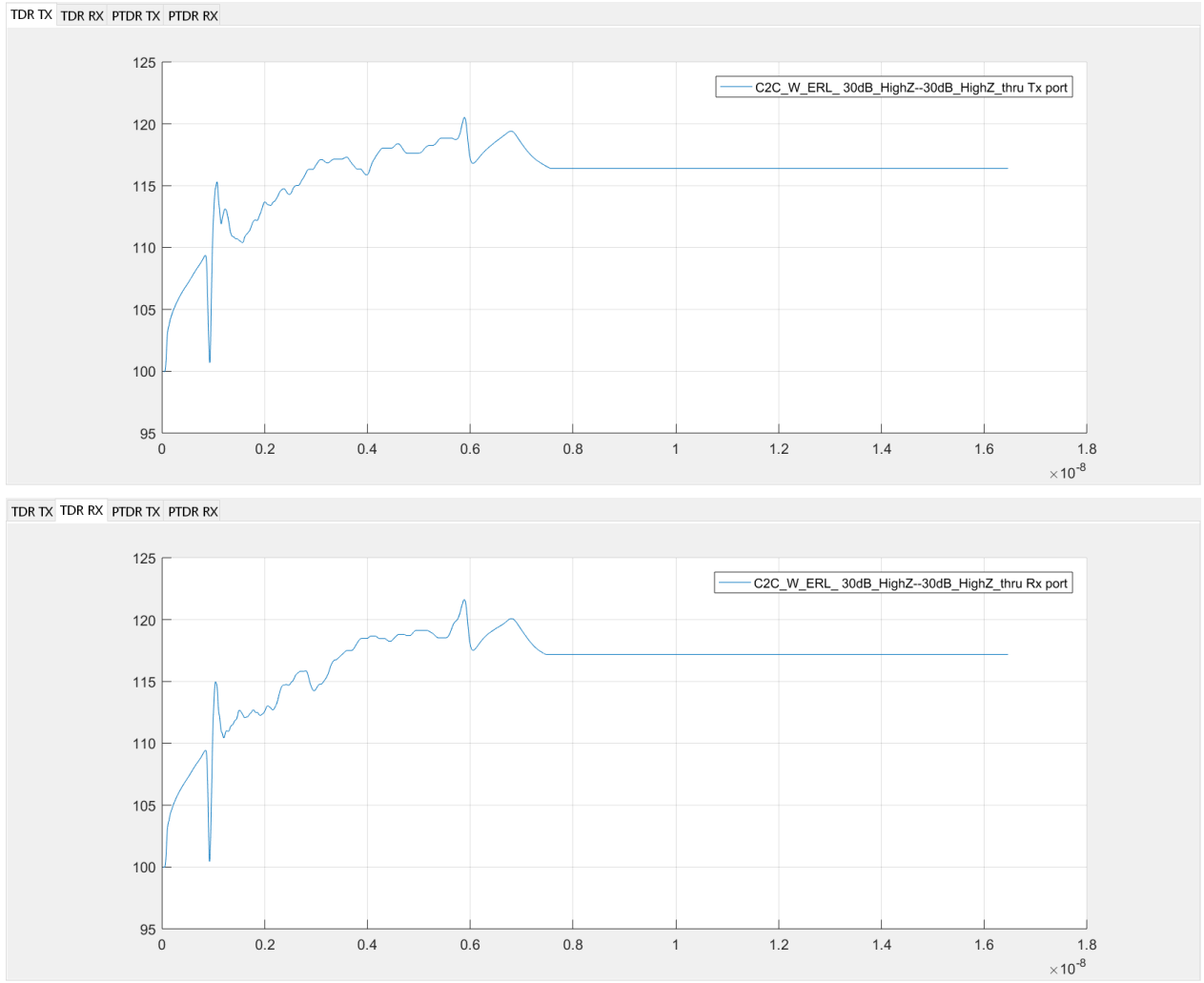
8F--Ch1_10_8F_t Impedance



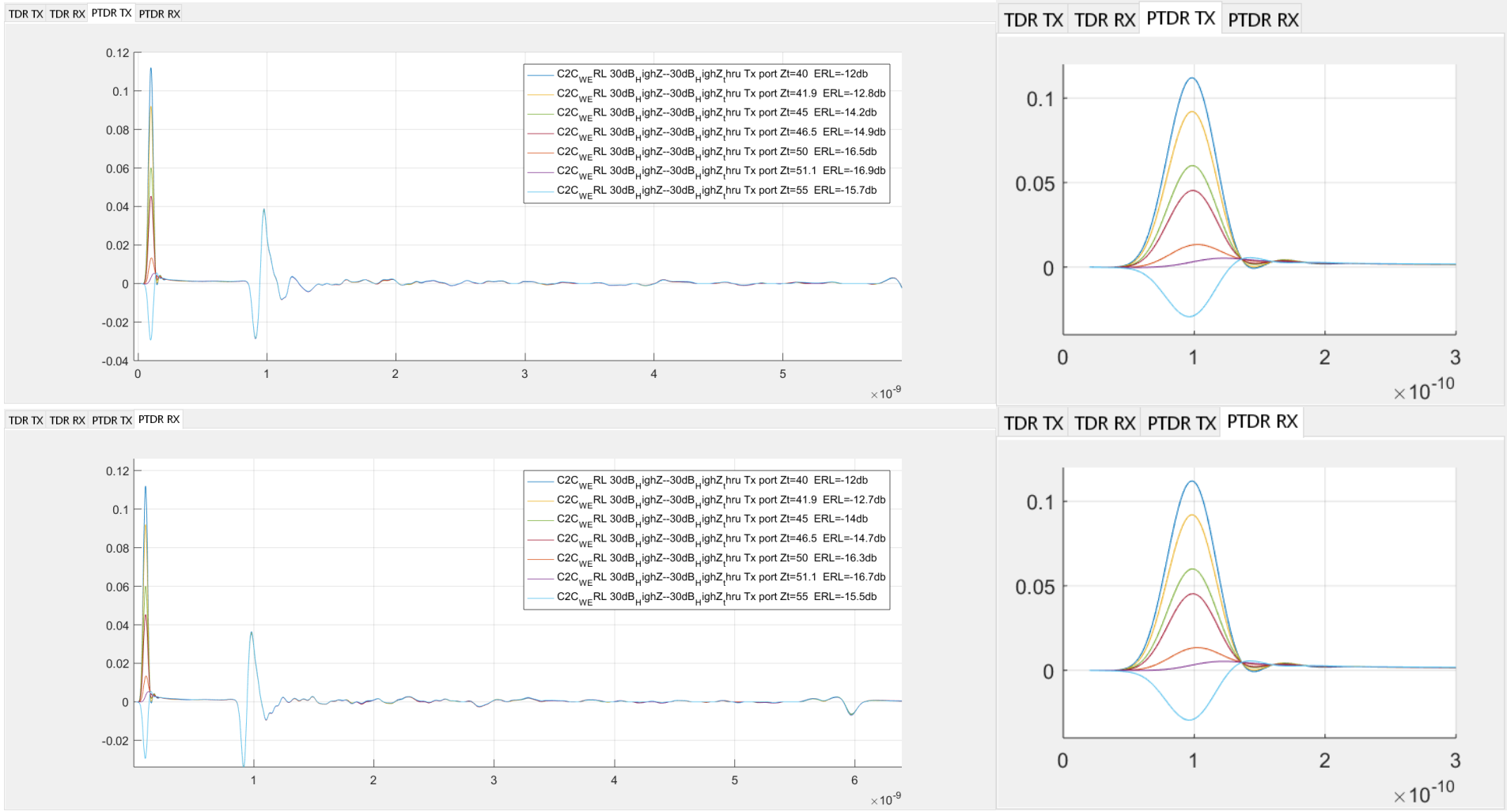
8F--Ch1_10_8F_t Tx/Rx PTDR



30dB_HighZ--30dB_HighZ_thru Tx/Rx Impedance



30dB_HighZ--30dB_HighZ_thru Tx/Rx ERL



Observations

- Most of the ERL variation is a the port
- There seem to be regions of PTDR response
- ERL of COM packages not done yet
- Figure files available (~150MB)

Discussion

- ❑ PDTD Regions
- ❑ Next Steps