Proposal to adjust ICR based on Channel Impairments

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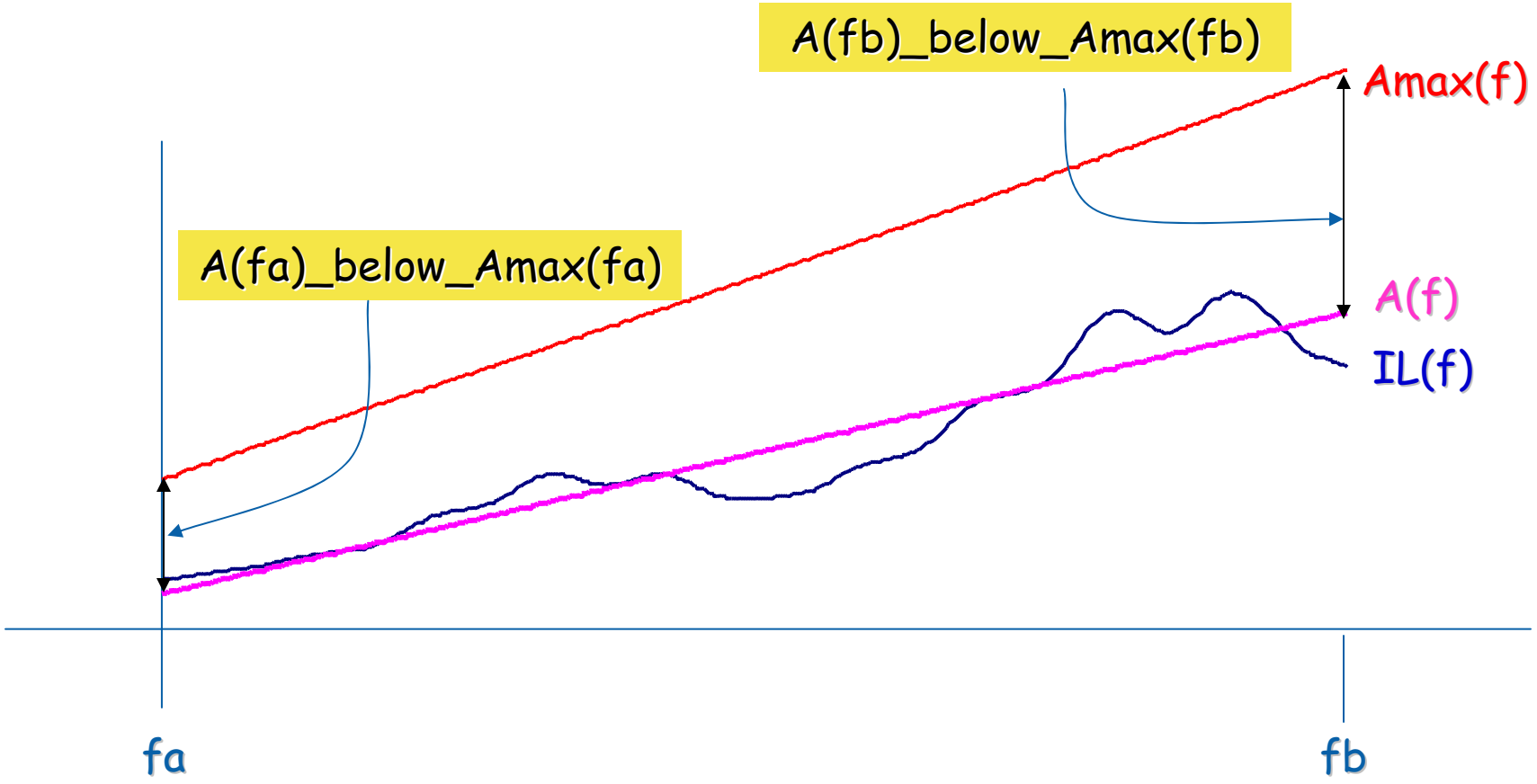
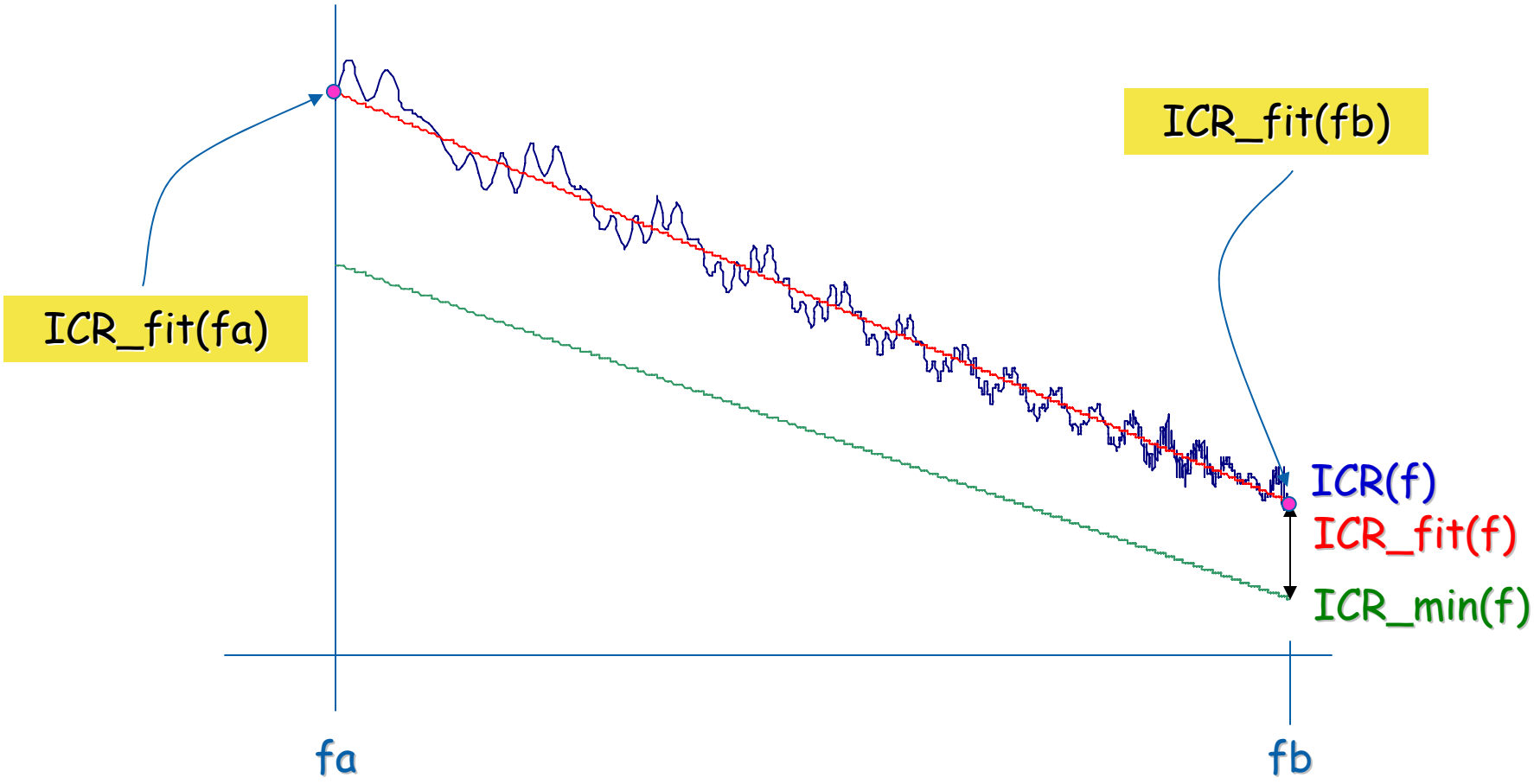
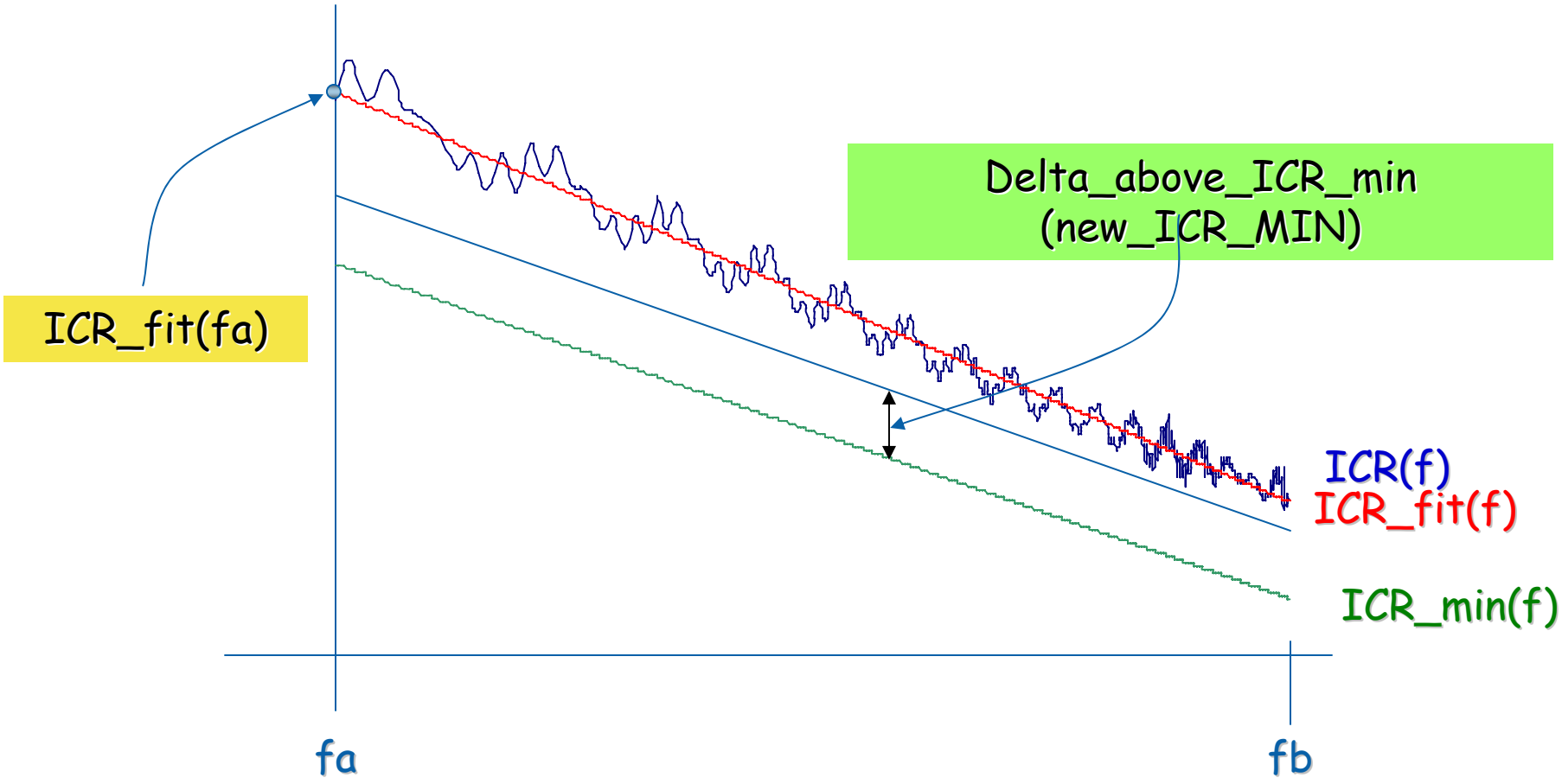
IL: Consider 2 derived parameters



ICR: Consider 2 derived parameters



ICR: Consider 1 derived parameter to adjust ICR_min



New parameter for ILD to account for return loss

$$\text{int(ILD\_sqd)} = \frac{\int_{fa}^{fb} ILD(f)^2 \, df}{1GHz}$$

Adjustment it ICR

Delta_above_ICR_min=

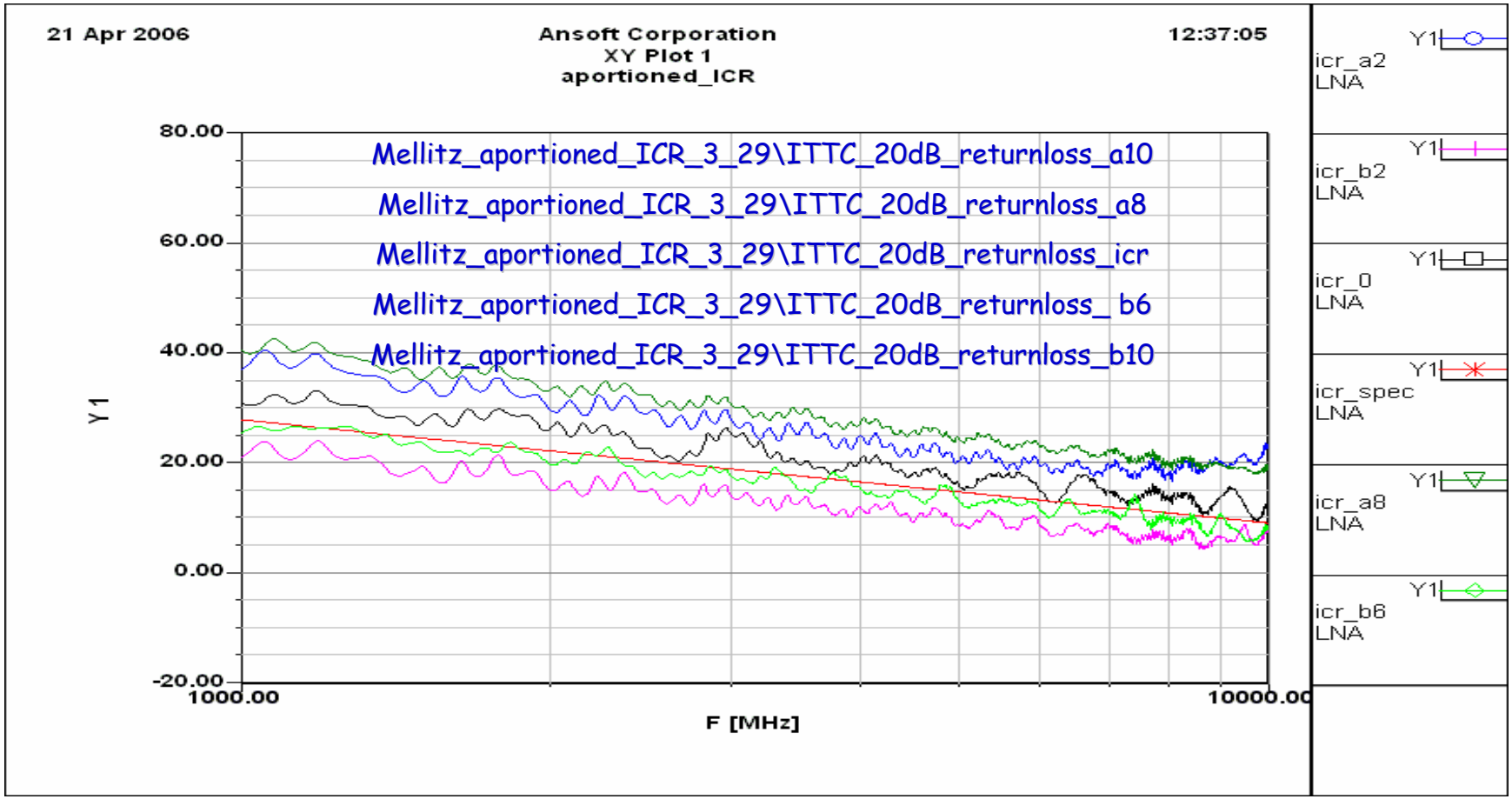
.734 + 0.046*int(ILD_sqd) - 1.9*A(fa)_below_Amax(fa) + 0.19*A(fb)_below_Amax(fb) - 0.0098*icr(fb) + (int(ILD_sqd) - 10.5)*((-A(fb)_below_Amax(fb) + 0.4) * 0.047) + (int(ILD_sqd) - 10.5)*((-icr(fb) + 32.1)*0.036) + (A(fa)_below_Amax(fa) +1.15) * ((icr(fb) - 32.1) * 0.39) + (A(fb)_below_Amax(fb) - 0.4) * ((-icr(fb) + 32.13)*0.048)

ICR_fit(f) > 14.8+Delta_above_ICR_min-18.7*log(f/5GHz)

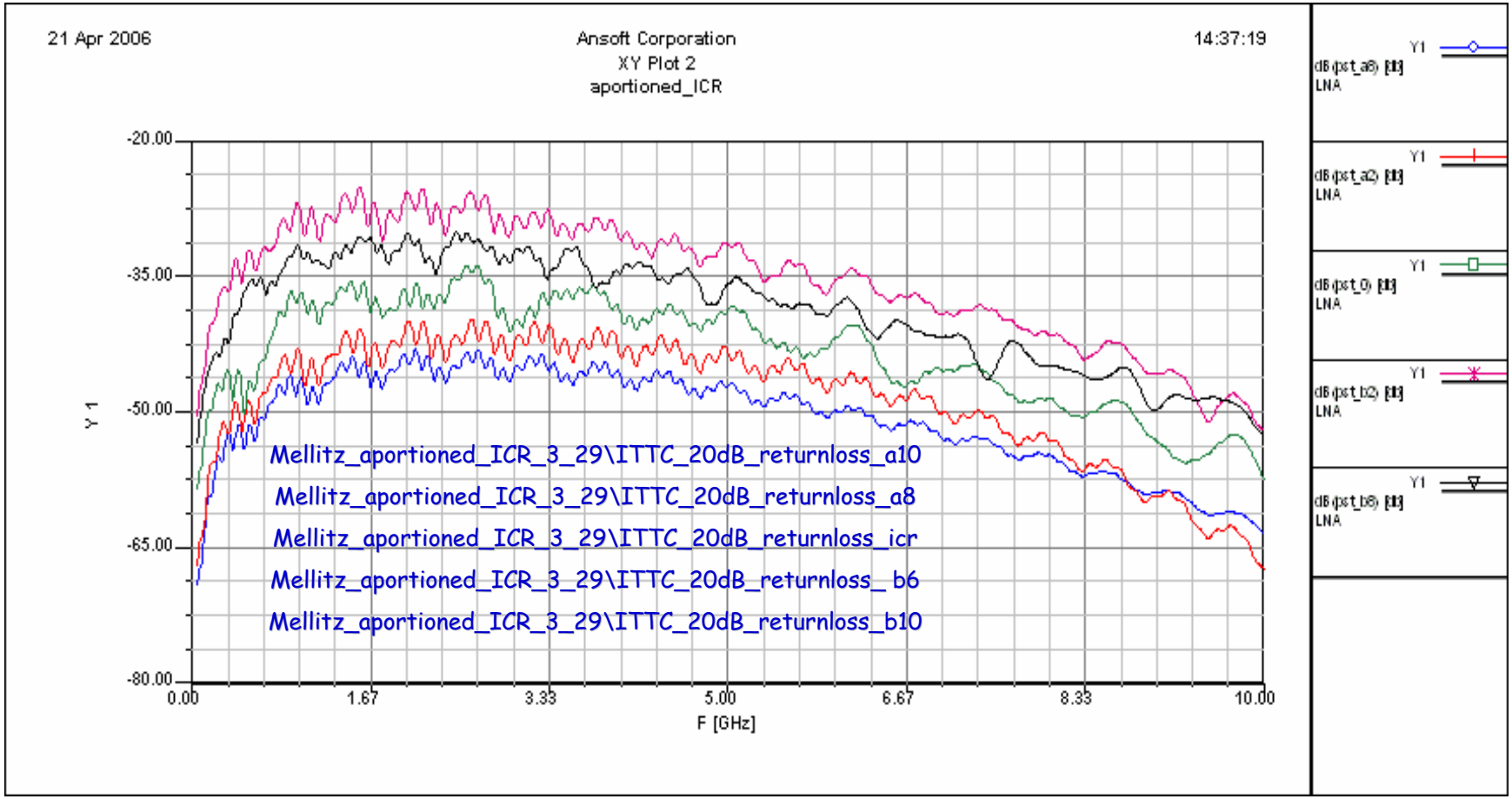
Pathological Channels Added –

- Proportioned ICR
- ILD max with and with out RL failure

Apportioned ICR plots



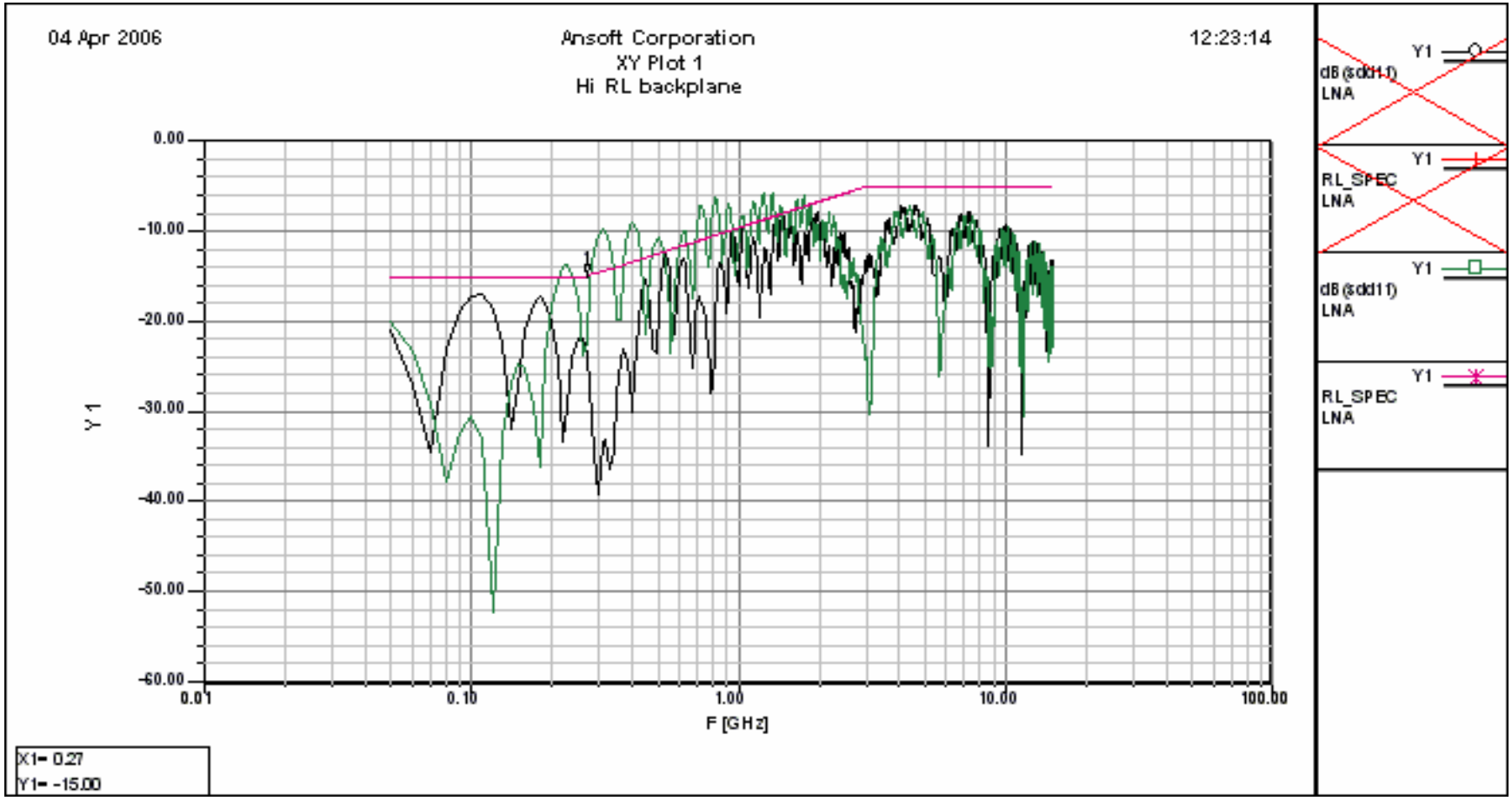
Single channel crosstalk



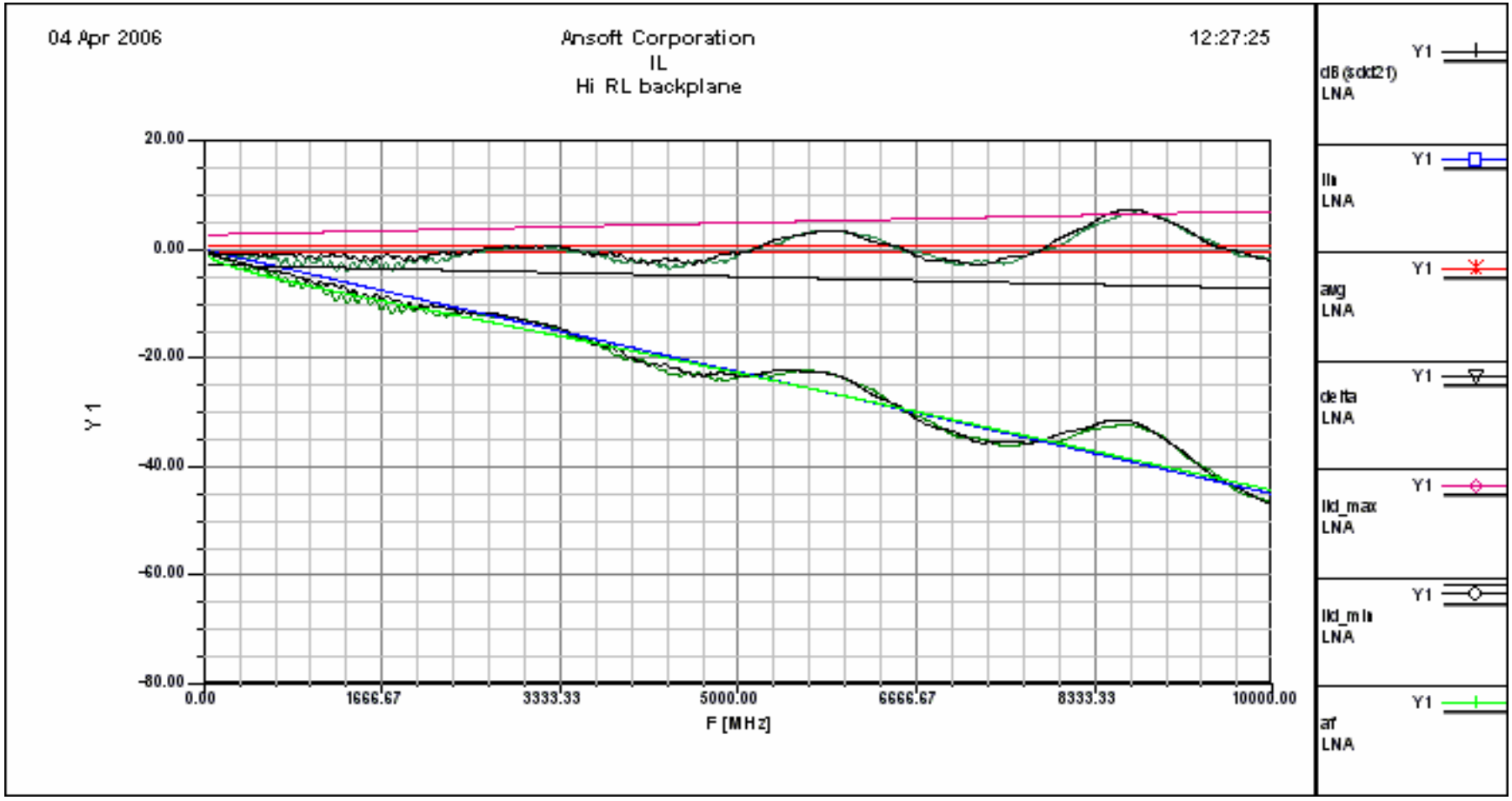
Two High ILD channel

- high_ILD_at_AFmax_Thru.s4p
  - Excessive low end RL
- high_ILD_at_AFmax_Thru_at_limit.s4p
  - RL at limit
- Both Channel have about the same ILD
- Both Channels are the ICR limit with high_ILD_at_ICR_crosstalk.s4p

RL differences



Small differences in ILD



Results

file1	FULVIO_EW, ps	ICR(fb), dB	new(icr(fb)), dB
Tyco\Case_#1\Case1 FM 13SI 20 T D13SI L10	0.44	13.98	15.23
Tyco\Case_#2\Case2 FM 13SI 20 T D13 L10	0.44	13.13	15.83
Tyco\Case_#3\Case3_FM_13SI_20_T_D6_L10	0.44	13.94	16.05
Tyco\Case_#4\Case4 FM 13SI 20 T D13 L6	0.44	13.78	16.43
Tyco\Case_#5\Case5 DS 13 10 T D13 L6	0.36	16.74	19.10
Tyco\Case_#6\Case6 DS 13 10 T D13 L6	0.32	16.48	18.25
Tyco\Case_#7\Case7 FM 13SI 1 T D13SI L6	0.56	16.84	18.96
Charles_experiment\m_82_ripple_90OK	0.20	8.44	12.82
Charles_experiment\m_60_ripple_98OK	0.19	16.01	7.80
Mellitz_aportioned_ICR_3_29\ITTC_20dB_returnloss_a10	0.64	19.61	19.88
Mellitz_aportioned_ICR_3_29\ITTC_20dB_returnloss_a8	0.60	22.53	21.06
Mellitz_aportioned_ICR_3_29\ITTC_20dB_returnloss_icr	0.52	13.59	14.58
Mellitz_aportioned_ICR_3_29\ITTC_20dB_returnloss_ b6	0.40	7.70	9.25
Mellitz_aportioned_ICR_3_29\ITTC_20dB_returnloss_b10	0.12	2.98	5.84
Mellitz_Hi_ILD_4_4\high_ILD_at_AFmax_Thru_at_limit	0.44	13.72	16.10
Mellitz_Hi_ILD_4_4\high_ILD_at_AFmax_Thru	0.32	13.09	13.75
peters_01_0605\peters_01_0605_B20_thru	0.40	13.58	15.89
peters_01_0605\peters_01_0605_B12_thru	0.40	14.67	15.88
peters_01_0605\peters_01_0605_B1_thru	0.52	15.76	17.95
peters_01_0605\peters_01_0605_M1_thru	0.44	21.88	20.36
peters_01_0605\peters_01_0605_T20_thru	0.12	3.70	7.62
peters_01_0605\peters_01_0605_T1_thru	0.20	9.65	11.28
peters_01_0605\peters_01_0605_T12_thru	0.16	6.88	7.86
peters_01_0605\peters_01_0605_M20_thru	0.40	18.53	17.61
molex\1m_OUTBOUND_TRU\OUT_sj4k4g4h4_SPARS	0.32	11.24	12.12
molex\1m_OUTBOUND_TRU\OUT_sj3k3g3h3_SPARS	0.32	11.29	11.53
molex\1m_OUTBOUND_TRU\OUT_sj2k2g2h2_SPARS	0.44	14.05	14.24
molex\1m_OUTBOUND_TRU\OUT_sj5k5g5h5_SPARS	0.44	13.95	14.13
molex\1m_INBOUND_TRU\IN_sj4k4g4h4_SPARS	0.16	8.15	11.50
molex\1m_INBOUND_TRU\IN_sj3k3g3h3_SPARS	0.28	7.91	9.75
molex\1m_INBOUND_TRU\IN_sj2k2g2h2_SPARS	0.40	10.89	11.99
molex\1m_INBOUND_TRU\IN_sj5k5g5h5_SPARS	0.40	10.96	11.74
	0.44	14	14

Next steps for May Interim

- Re-affirm EO simulation package assumptions in relation to s-parameter analysis.

- Review for KX and KX4.