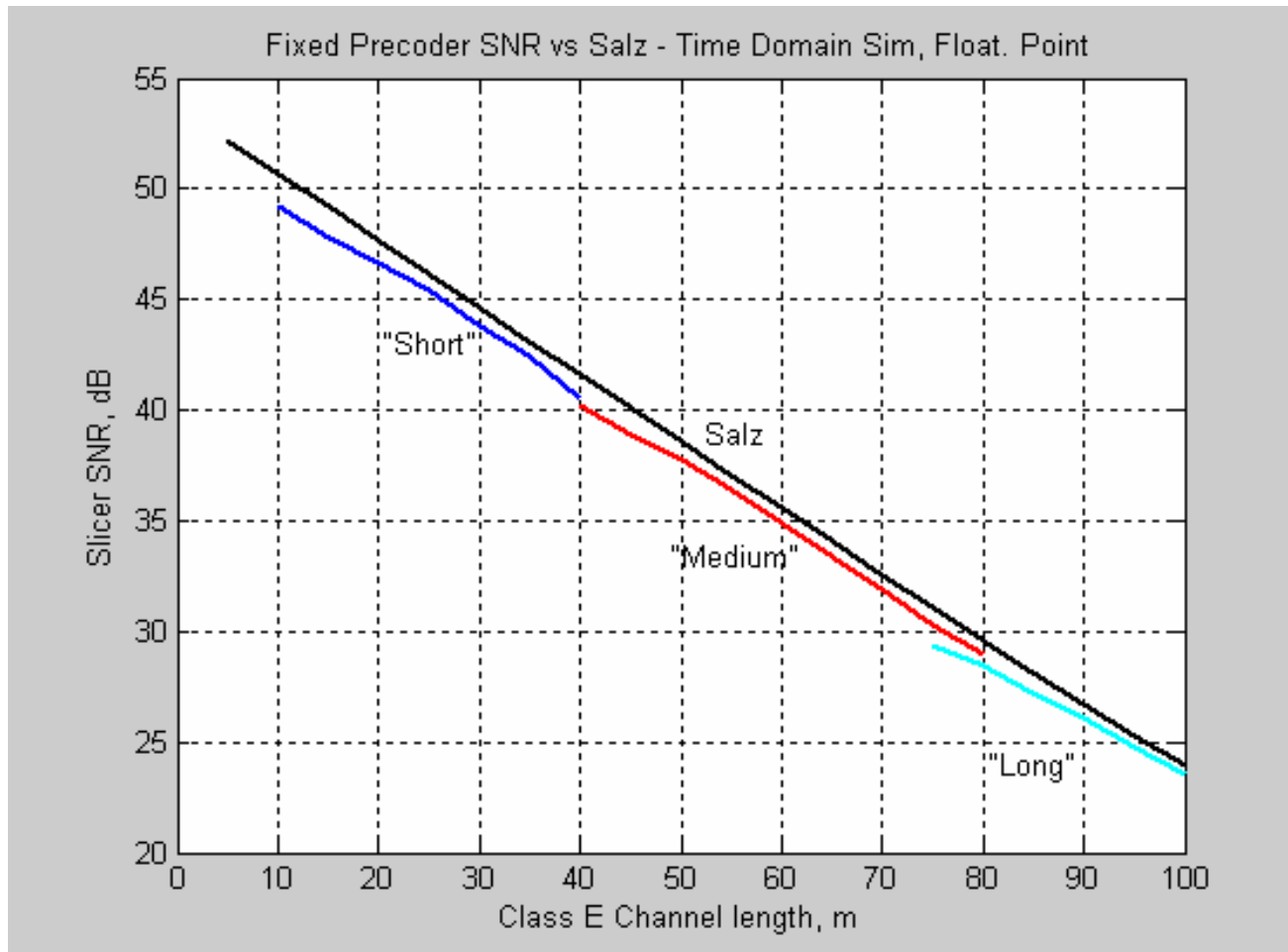

Fixed Set Transfer Functions for 10GBASE-T Tomlinson-Harashima Precoder

KeyEye Communications

A. Vareljian

12/10/2004

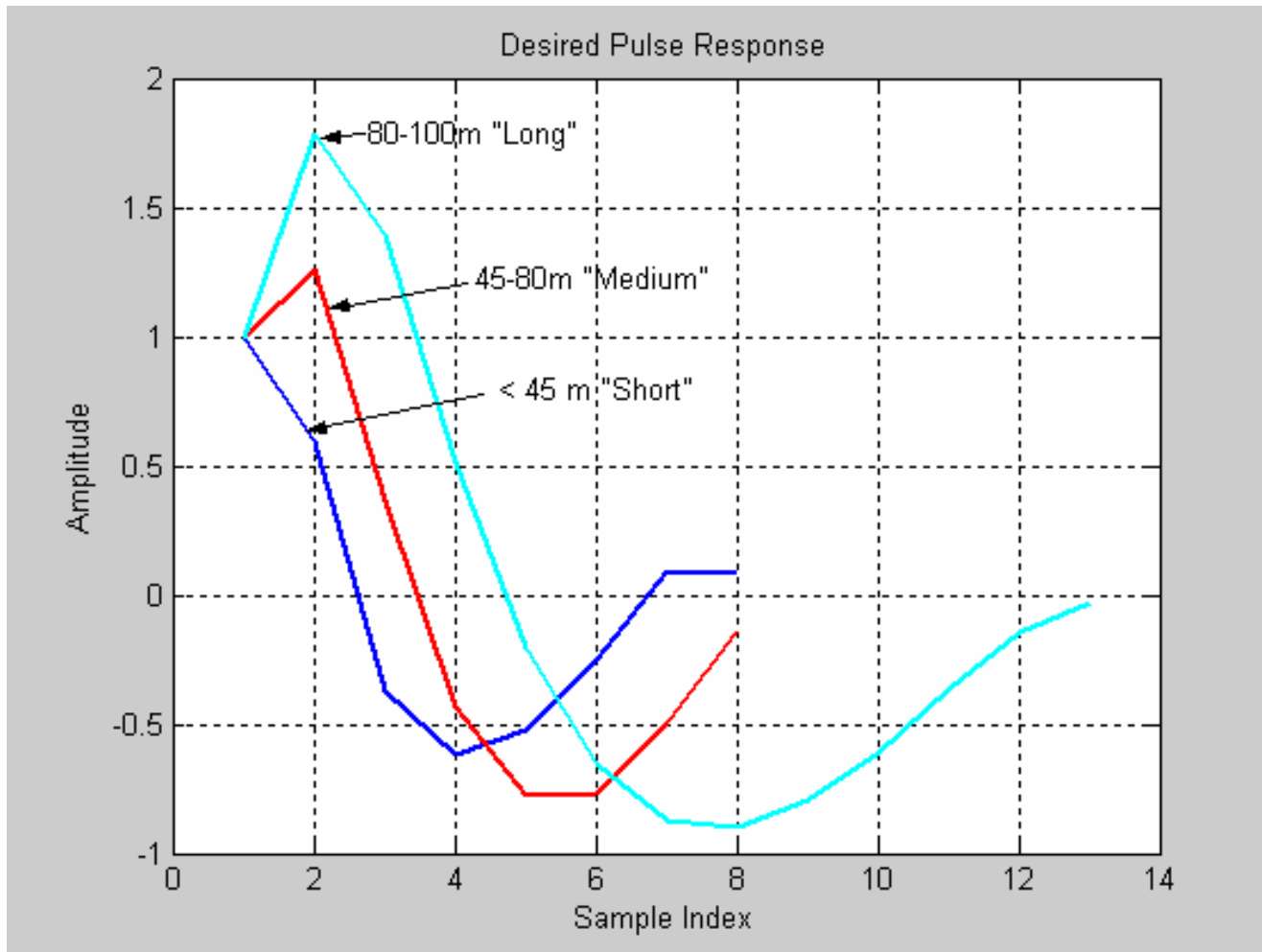
Fixed Set SNR Performance vs. Salz Opt. Time Domain Analysis, FFE 24-Tap or Less



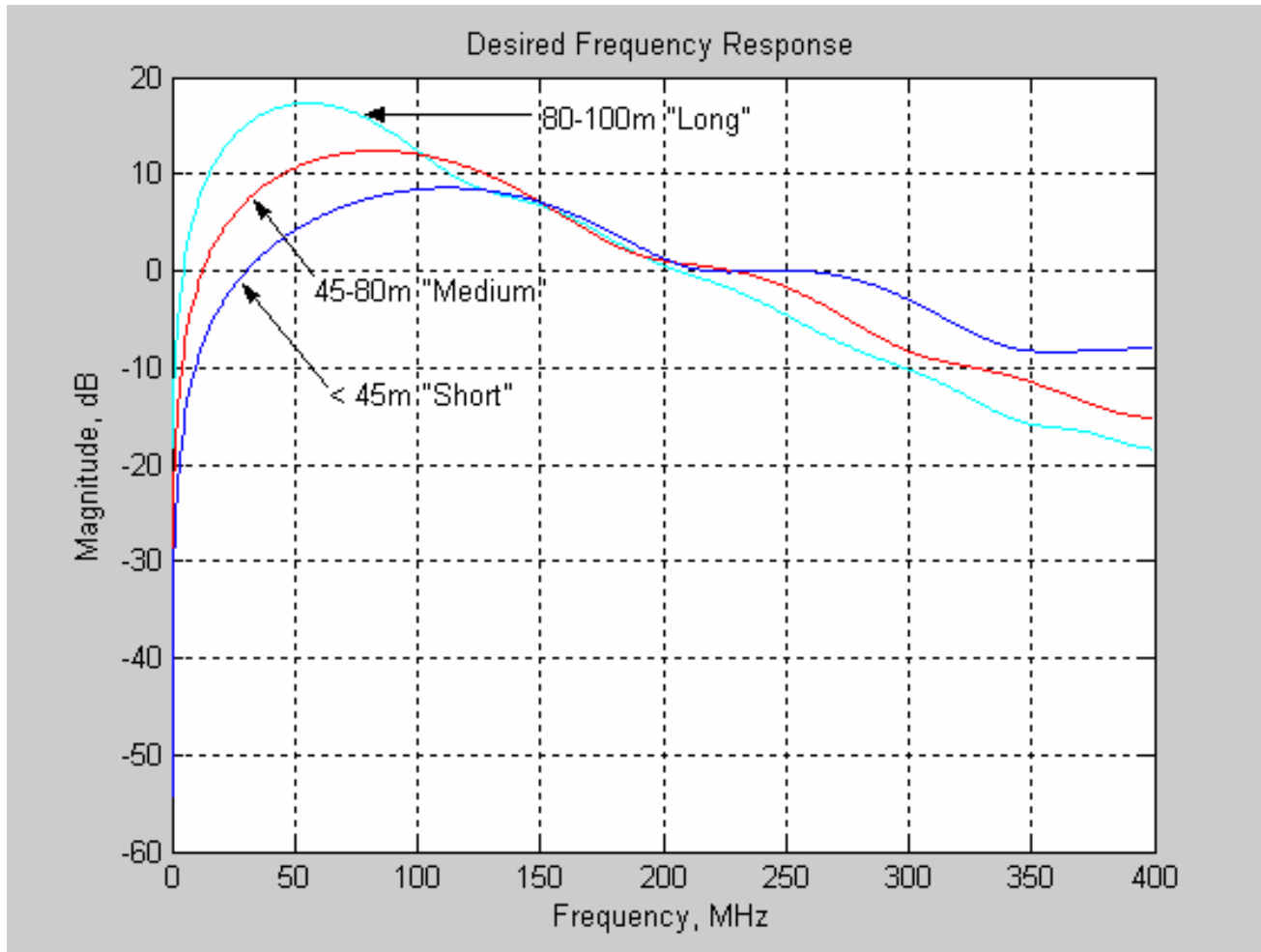
Time Domain Simulation Setup as per “vareljian_1_1104.pdf”, p. 4, $P_{TX} \sim 3.7$ dBm

Similar Performance is Attained with 2nd Order Tx LPF @ 200 MHz as per “ungerboeck_1_1104.pdf” p. 15

Constrained Opt. H(D) Pulse Response



Constrained Opt. H(D) Frequency Response



H(D) - 1 Fixed 3-Set Coefficients

“LONG” (80-100m)		“MEDIUM” (45-80m)		“SHORT” (< 45 m)	
FLOAT	7-BIT	FLOAT	7-BIT	FLOAT	7-BIT
1.7882	1.78125	1.262	1.25	0.59037	0.59375
1.3886	1.375	0.36757	0.375	-0.36938	-0.375
0.51683	0.53125	-0.4370	-0.4375	-0.61887	-0.625
-0.20361	-0.21875	-0.777	-0.78125	-0.52253	-0.53125
-0.65657	-0.65625	-0.76492	-0.75	-0.24784	-0.25
-0.87095	-0.875	-0.49457	-0.5	0.091094	0.09375
-0.90013	-0.90625	-0.13909	-0.125	0.079077	0.09375
-0.79667	-0.78125				
-0.60553	-0.59375				
-0.365	-0.375				
-0.14265	-0.15625				
-0.031834	-0.03125				

Column Coefficients in Top-Down Order Correspond to Ascending Delay FIR Form, (Denominator = 1)