Preliminary FM Antenna System Calculations

Model COG20P-12-240-2 Master FM Antenna
System Losses without Group Delay Compensation

	ANALOG				*DIGITAL*			
Call Letters:	KYIS-FM							
Frequency:	98.9	MHz						
ERP:	100.000	kW	20.000	dBk	1.000	kW	0.000	dBk
Polarization:	Circular				Circular			
Antenna Gain:	6.127		7.872	dB	6.127		7.872	dB
Element Input Power:	16.321	kW	12.128	dBk	0.163	kW	-7.872	dBk
Element Hybrid Losses:	-0.165	kW	20.000	dB	-0.002	kW	20.000	dB
Antenna Input Power:	16.486	kW	12.171	dBk	0.165	kW	12.171	dBk
Transmission Line Type - Vertical Run:	6-1/8-inch rigid line (dual runs)				3-inch air HELIAX (dual runs)			
Vertical Run Length:	1627.000	feet			1627.000	feet		
Vertical Run Attenuation:	0.048	dB/100-feet			0.140	dB/100-feet		
Transmission Line Type - Horizontal: Run:	6-1/8-inch rigid line (dual runs)				3-inch air HELIAX (dual runs)			
Horizontal: Run Length:	100.000	feet			100.000	feet		
Horizontal: Run Attenuation:	0.048	dB/100-feet			0.140	dB/100-feet		
Line Loss:	3.467	kW	0.829	dB	0.123	kW	2.418	dB
Line Efficiency:	82.624%				57.309%			
Power Output from Hybrid Splitter:	19.953	kW	13.000	dBk	0.288	kW	-5.411	dBk
Combiner System Losses:	-1.925	kW	0.400	dB	-0.054	kW	0.750	dB
Transmitter Power Output:	21.878	kW	13.400	dBk	0.342	kW	-4.661	dBk

Additional loss from optional group delay compensation module, increases combiner loss by 0.25 dB.