

MARK 5 MEMO #069

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To: Mark 5 Development Group

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Subject: Temperature coefficients for LMR-400 and LMR-240

Times microwave LMR-400 and LMR-240 were measured at 5 and 10 MHz over a range from 75 to 120 F using the Timing system TSC5115A phase comparator.

The following results were obtained:

Freq MHz	Cable	Temp Co ppm/K	Loss dB/100m	Effect of internal inductance	Expected ppm/K
10	LMR-400	-11±3	1.2	11	-13
10	LMR-240	0±3	2.3	21	-3
5	LMR-400	0.5±3	0.8	15	-9
5	LMR-240	17±6	1.7	32	8

I also show the expected temperature coefficient due to the change of internal inductance from the theory of memo #67 plus a correction of -24 ppm/K for the change in dielectric which is assumed to be a constant and not change with frequency. The LMR400 is the “ideal” cable for 5 MHz distribution while LMR240 is best for 10 MHz.