

HOW TO:

DETERMINE THE "SIGN" OF REACTANCE (X)

- POPULAR ANALYZERS LIKE THE MFJ-259B DON'T TELL YOU

- A COMMON METHOD: (FLAWED)

- INCREASE MEASUREMENT FREQUENCY SLIGHTLY...

{ - IF X INCREASES, X IS INDUCTIVE (+)
 { - IF X DECREASES, X IS CAPACITIVE (-)

NOT ALWAYS TRUE !!

- DOES NOT APPLY WHEN ANTENNA OR LOAD IS FED BY A TRANSMISSION LINE!

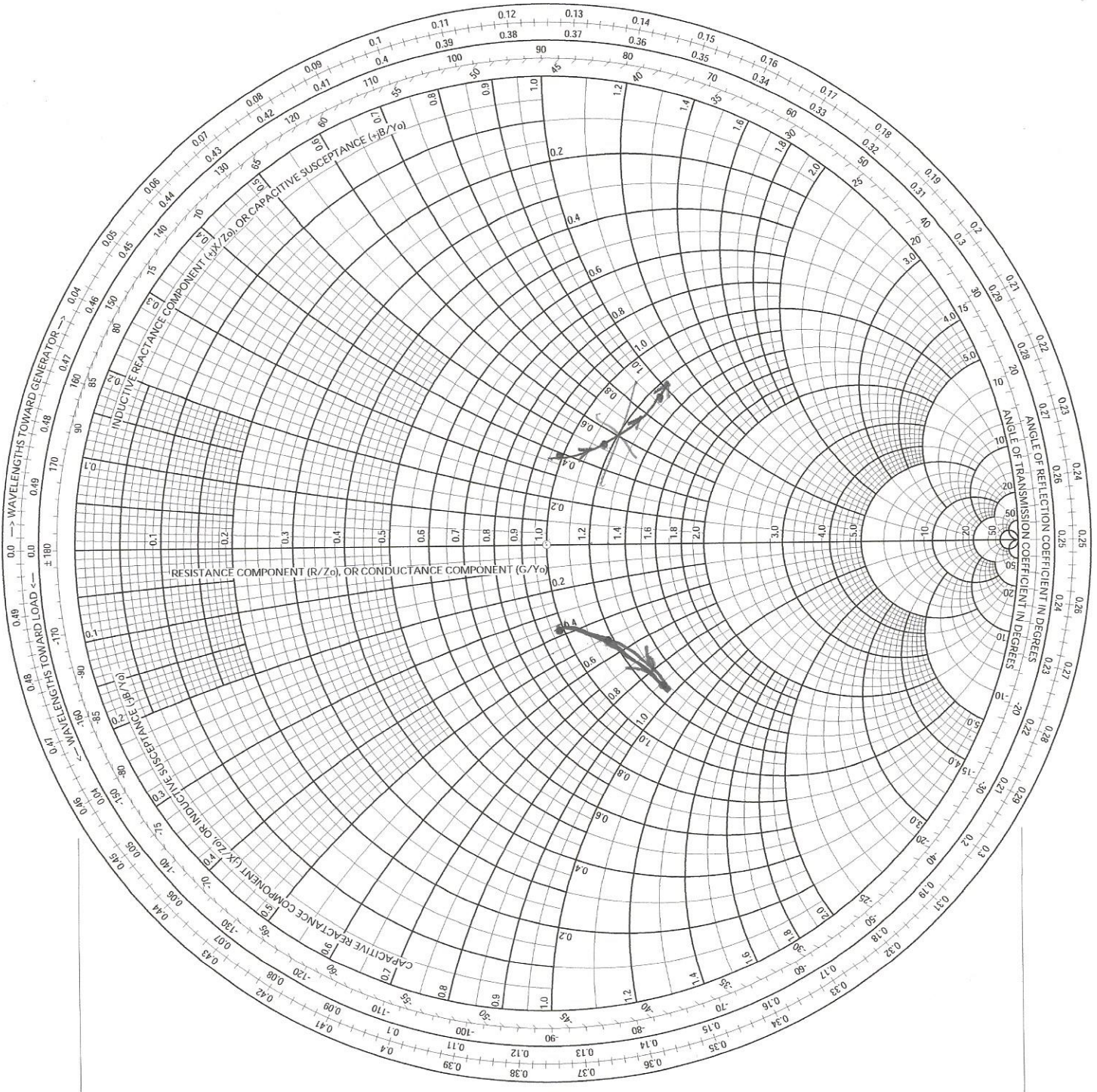
... SO, WHAT TO DO ???

SMITH CHART TO THE RESCUE!

- 1) MEASURE R & X AT 3 FREQUENCIES (INCREASING)
- 2) PLOT ON SMITH CHART TWICE, ONCE FOR EACH SIGN OF X
- 3) CONNECT EACH SET OF 3 POINTS WITH A CURVE (ARC)
- 4) THE "SIGN" THAT RESULTS IN AN ARC WHICH ROTATES CLOCKWISE AS FREQUENCY INCREASE IS CORRECT!

FREQUENCY	R	X	NORMALIZED	
			R'	X'
4.0 MHz	49	19	0.98	-0.38
4.2 MHz	59	26	1.18	-0.52
4.4 MHz	64	46	1.28	-0.92

Smith Chart



RADIALLY SCALED PARAMETERS

