



General information on Ferrite NiZn and MnZn cores

Be aware of the fact that μ_i for all cores are the parameters for frequencies < 1 MHz!

Use the Owen Duffy information to calculate and find the data you need

on the curves you find below for μ' and μ'' .

Data for Fair-rite cores ref. owenduffy.net

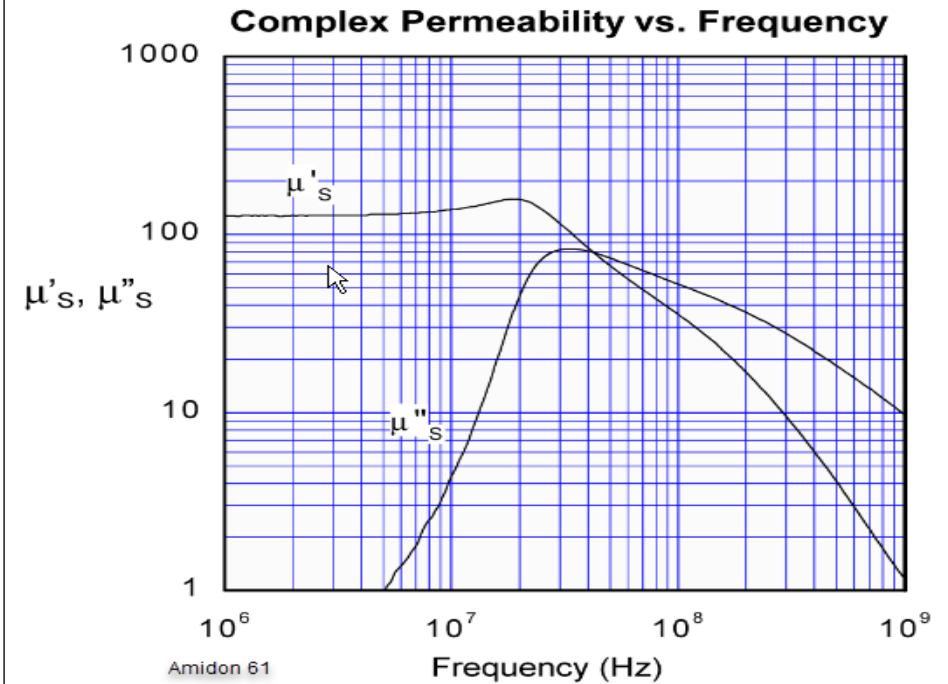
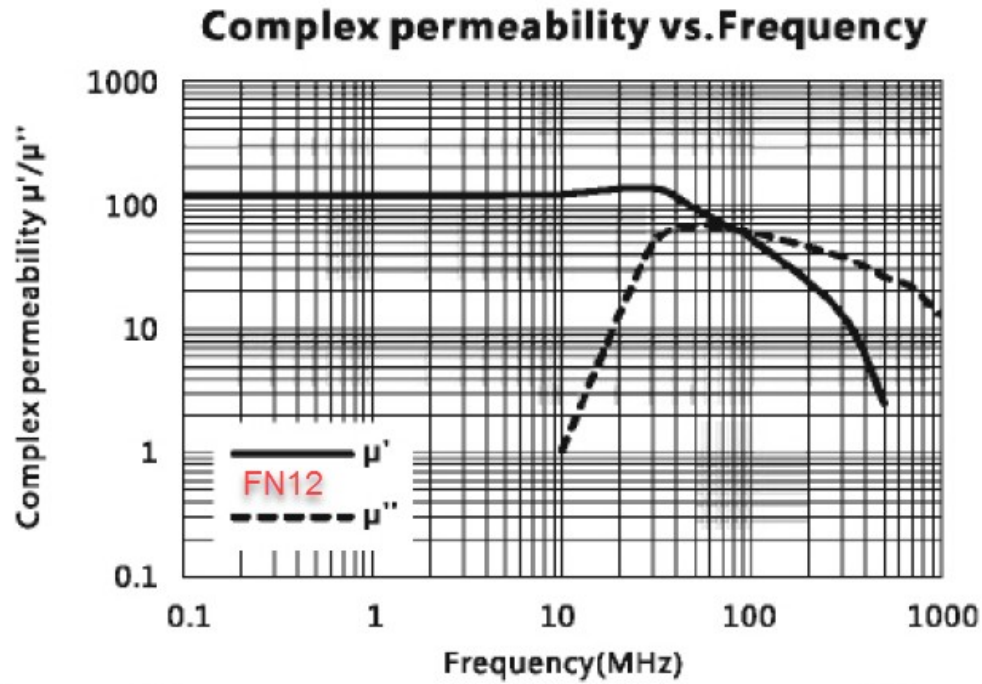
Freq (MHz)	31		43		52		61		67		73		F14	
	$\mu_i=1500$		$\mu_i=800$		$\mu_i=250$		$\mu_i=125$		$\mu_i=40$		$\mu_i=2500$		$\mu_i=220$	
	μ'	μ''	μ'	μ''	μ'	μ''	μ'	μ''	μ'	μ''	μ'	μ''	μ'	μ''
1.8	1167.2	702.1	609.8	149.3	272.3	4.0	120.3	0.3	40.6	0.1	1540.4	1315.4	219	2
3.6	657.7	677.9	470.2	224.0	278.7	7.8	120.6	0.6	40.3	0.1	839.9	1057.1	235	4
7.1	359.1	476.1	332.0	228.0	305.2	73.8	123.4	1.2	40.2	0.1	457.4	803.3	265	36
10.1	275.3	385.3	259.7	220.4	258.2	138.7	127.4	2.1	40.3	0.1	296.7	685.7	257	89
14.2	223.4	323.8	201.2	204.3	186.8	151.2	136.8	6.2	40.5	0.1	157.9	562.0	222	111
18.1	187.9	284.9	159.9	189.3	150.8	138.8	150.8	20.1	40.8	0.1	86.2	458.8	189	117
21.2	165.2	262.4	135.3	179.4	132.2	126.8	153.7	41.5	40.9	0.1	49.4	396.2	172	121
24.9	144.6	241.0	113.7	168.7	118.0	116.8	140.7	64.9	41.2	0.1	25.0	336.2	157	124
28.5	129.2	224.5	97.5	158.4	107.2	109.4	124.5	76.6	41.4	0.1	8.8	289.8	146	126

Similar data for Amidon

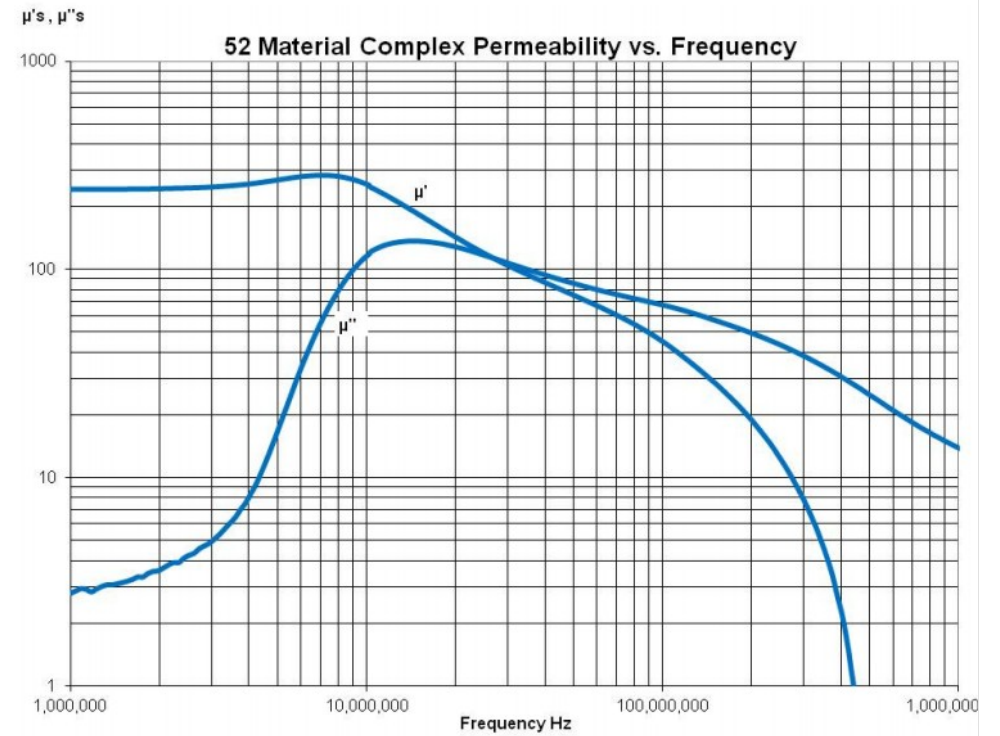
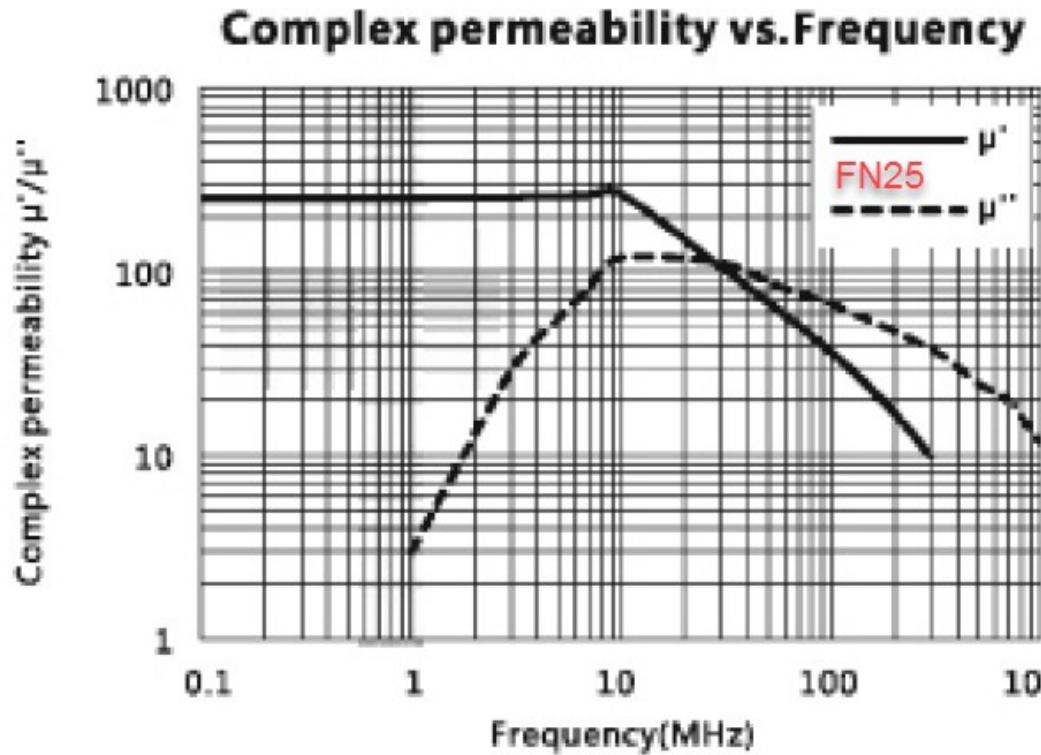
Cross reference

	Initial		Initial
Amidon	Permeability	PneumaBeam	Permeability
61	125	FN12	120
52	250	FN25	250
51	350	FN40	400
43	800	FN80	800
31	1500	FN200 NiZn	2000
77 MnZn	2000	FP4 MnZn	2200

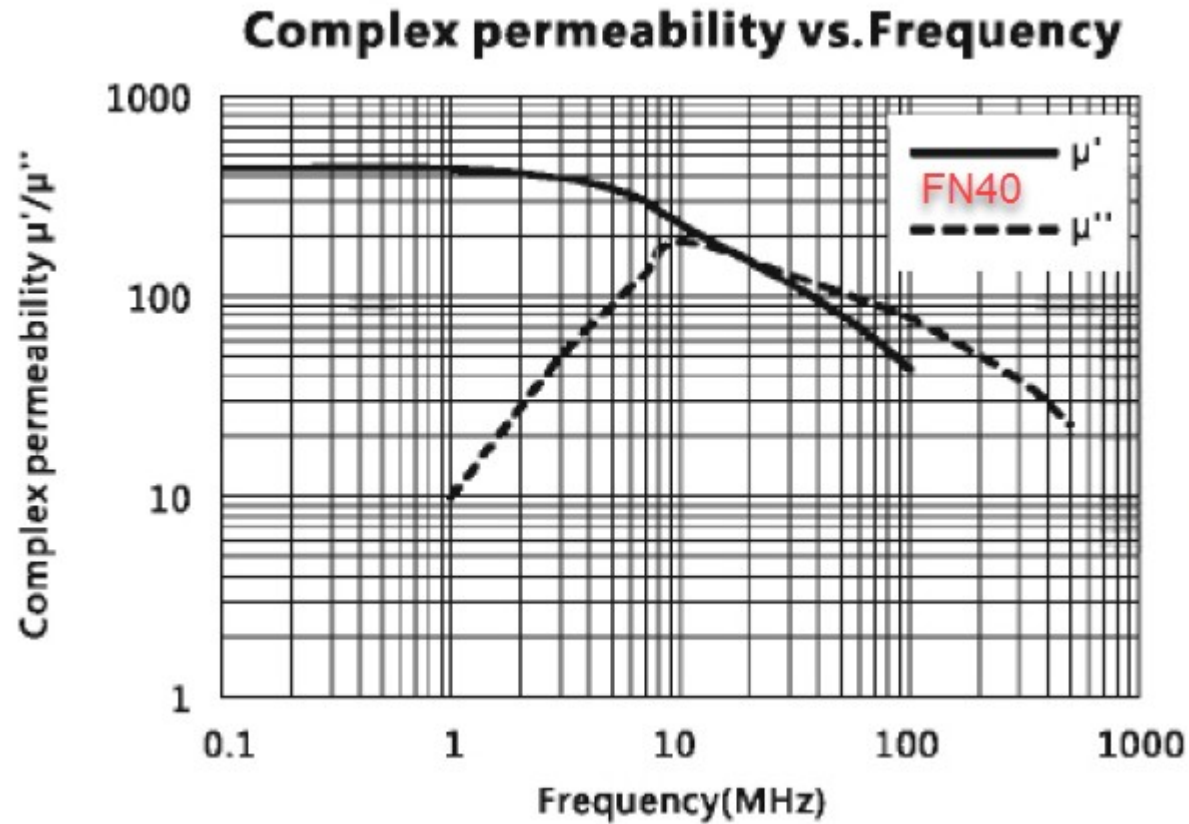
PneumaBeam					AMIDON					
mm3	OD	ID	HT	gram	mm3	OD	ID	HT	FT	gram
6126	31	19	13	29	2827	29	19	7,5	114	13
9547	36	19	13	46	5202	29	19	13,8	114A	25
9036	36	23	15	43	4829	31,75	19,05	9,53	125	23
11058	38	19	13	53	7109	35,56	22,86	12,2	140	34
11310	38	22	15	54	8741	35,56	22,86	15	140A	42
16745	51	31	13	80	5439	38,1	19	6,35	150	26
33866	60	38	20	162	10878	38,1	19	12,7	150A	52
44565	60,5	36	24	213	17367	49	31,75	15,875	193	83
49578	63	38	25	236	20739	49	31,8	19	193A	99
31667	68	44	15	151	15670	50	30,48	12,7	200	75
39575	74	40	13	189	24509	61	35,55	12,7	240	117
51162	87	54	14	244	39026	73,66	38,9	12,7	290	186
56549	80	40	15	270						
61261	80	50	20	292						



Material	FN12	
μ_i	unit	$120 \pm 20\%$
B_s	mT	430(4.0KA/m)
T_c	$^{\circ}\text{C}$	> 300
$\alpha \mu_r$	$\times 10^{-6}/^{\circ}\text{C}$	65
$\tan \delta / \mu_i$	$\times 10^{-6}$ MHz	$\leq 65(0.1\text{MHz})$
ρ	$\Omega \cdot \text{m}$	10^6
d	g/cm^3	5.2

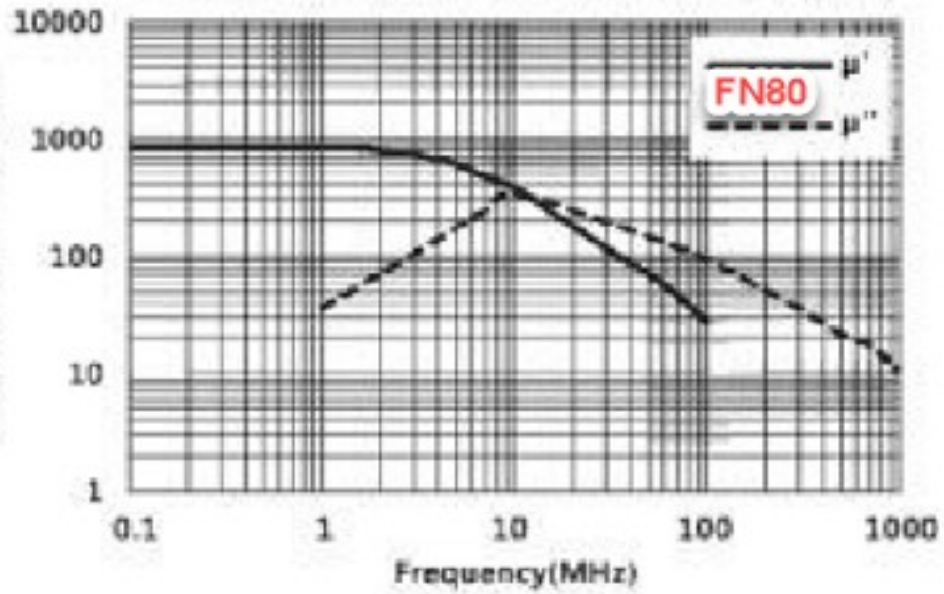


Material		FN25
μ _i	unit	250 ± 20%
B _s	mT	475(4.0KA/m)
T _c	°C	> 300
α μ _r	× 10 ⁻⁶ /°C	24
tan δ / μ _i	× 10 ⁻⁶ MHz	≤ 40(0.1MHz)
ρ	Ω · m	10 ⁶
d	g/cm ³	5.2

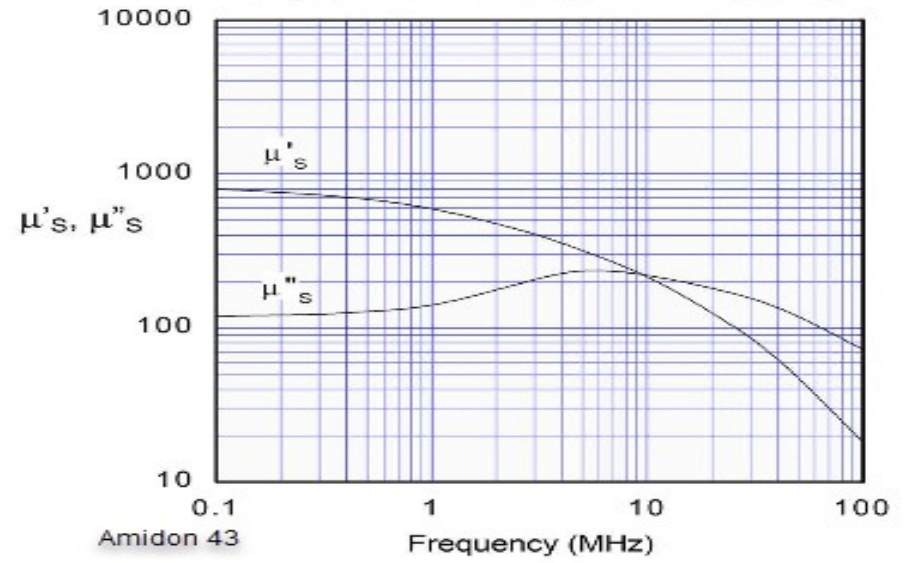


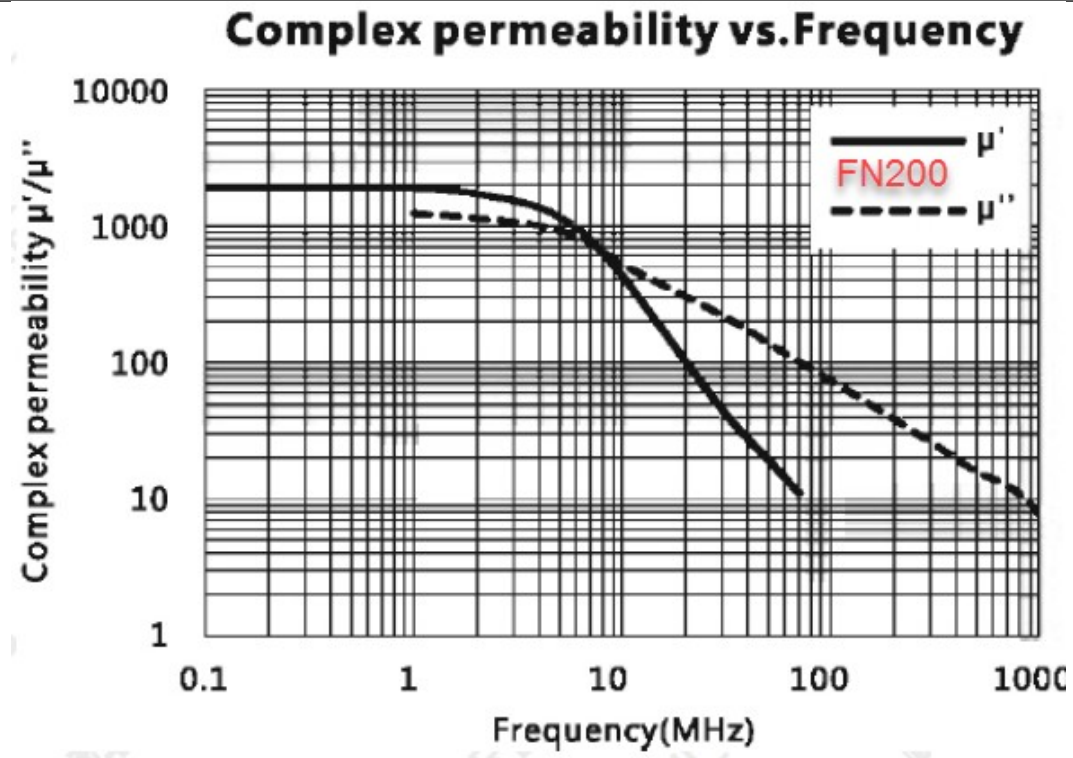
Material		FN40
μ_i	unit	$400 \pm 20\%$
Bs	mT	410(4.0KA/m)
Tc	°C	> 250
$\alpha \mu_r$	$\times 10^{-6}/^{\circ}\text{C}$	25
$\tan \delta / \mu_i$	$\times 10^{-6}$ MHz	$\leq 25(0.1\text{MHz})$
ρ	$\Omega \cdot \text{m}$	10^6
d	g/cm^3	5.1

Complex permeability vs. Frequency



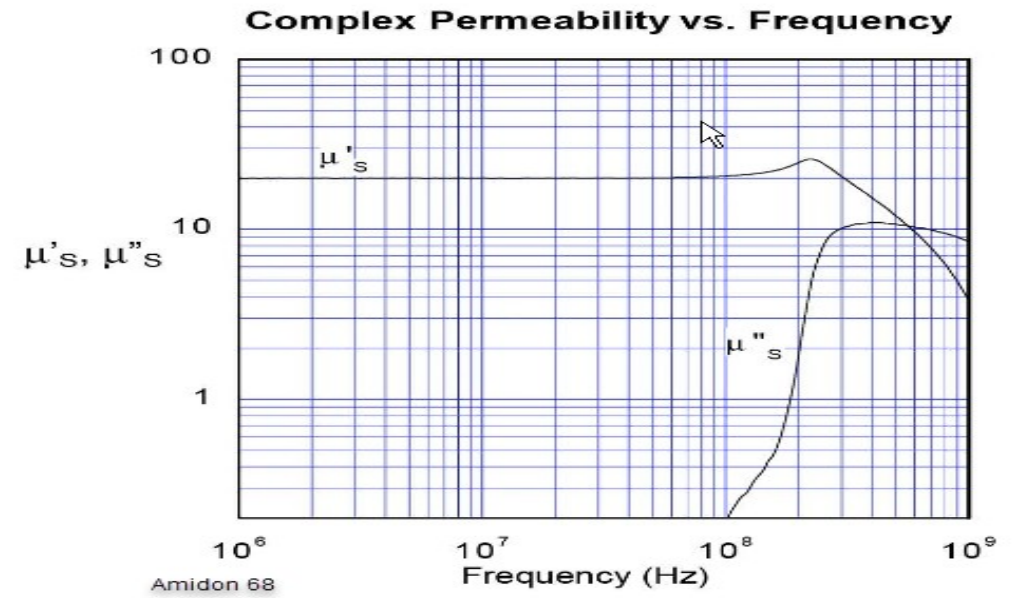
Complex Permeability vs. Frequency

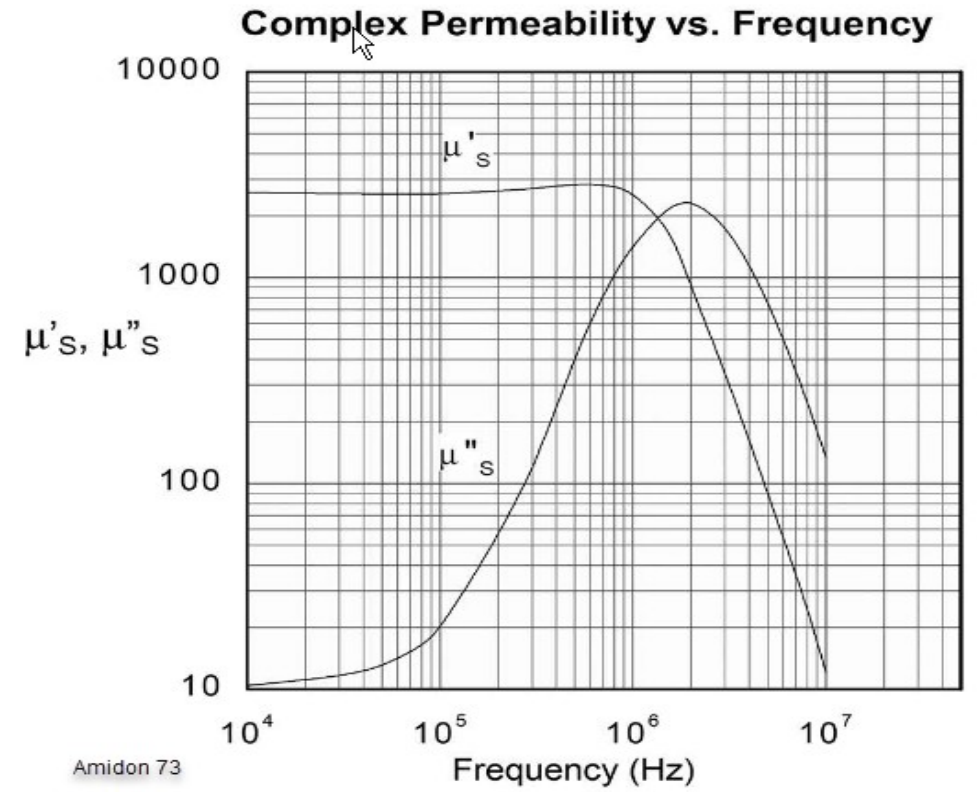
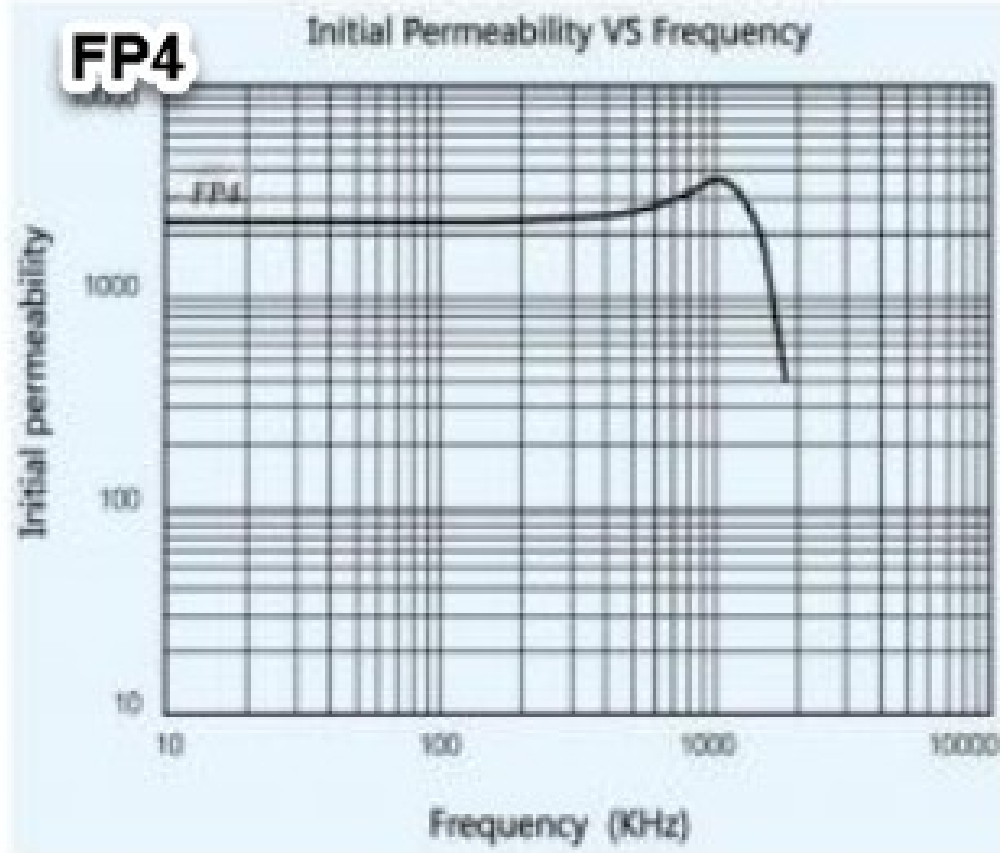




Material		FN200
μ_i	unit	$2000 \pm 20\%$
B_s	mT	290(4.0KA/m)
T_c	$^{\circ}\text{C}$	> 100
$\alpha \mu_r$	$\times 10^{-6}/^{\circ}\text{C}$	2
$\tan \delta / \mu_i$	$\times 10^{-6}$ MHz	$\leq 10(0.011\text{MHz})$
ρ	$\Omega \cdot \text{m}$	10^6
d	g/cm^3	5.2

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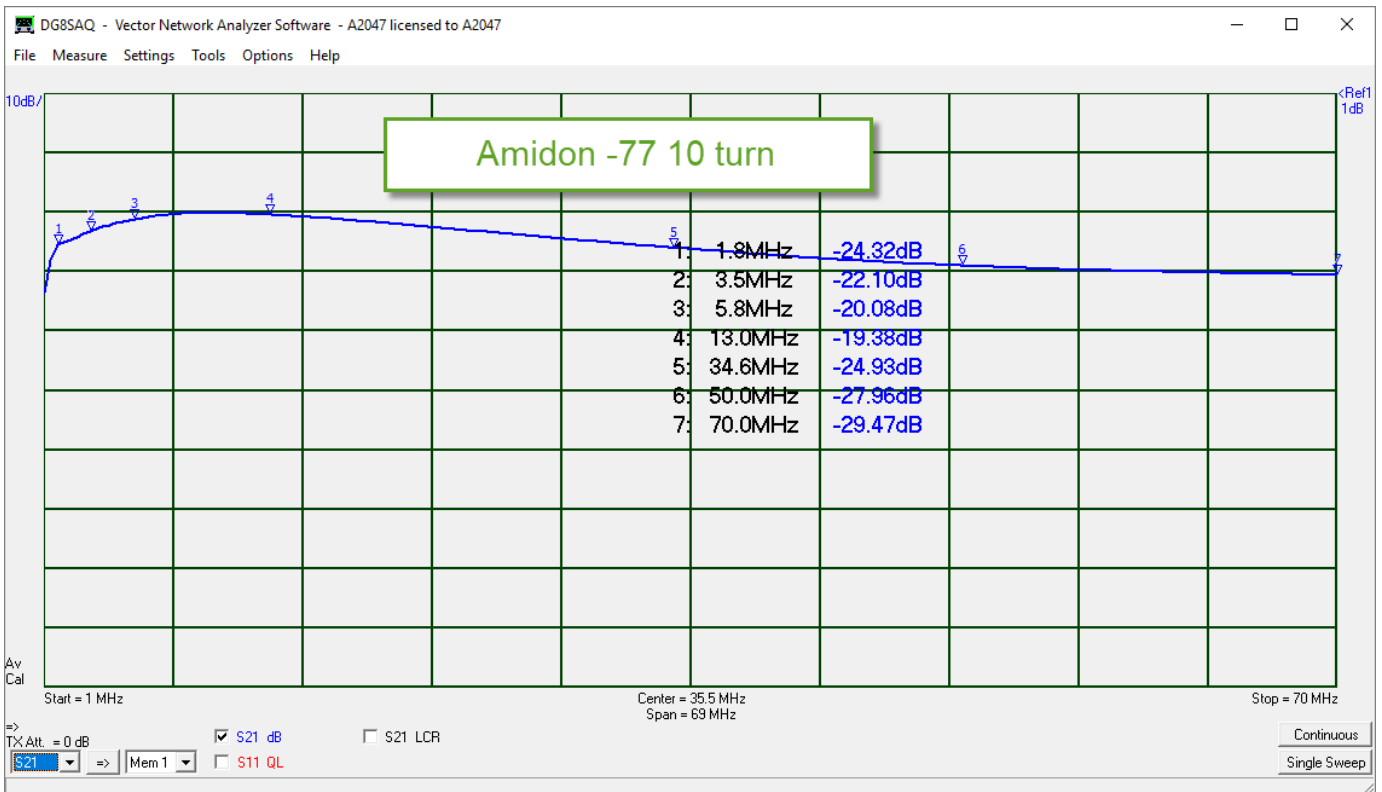
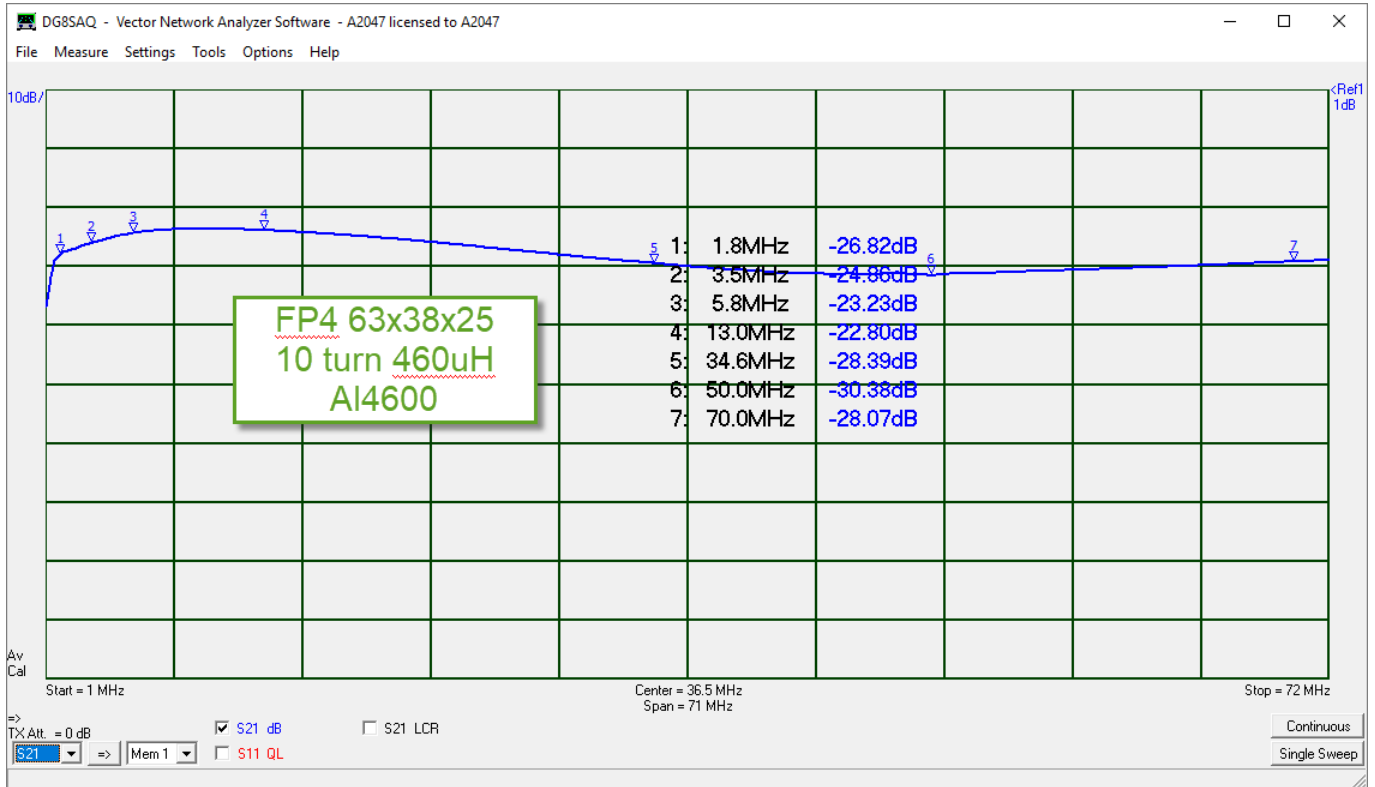


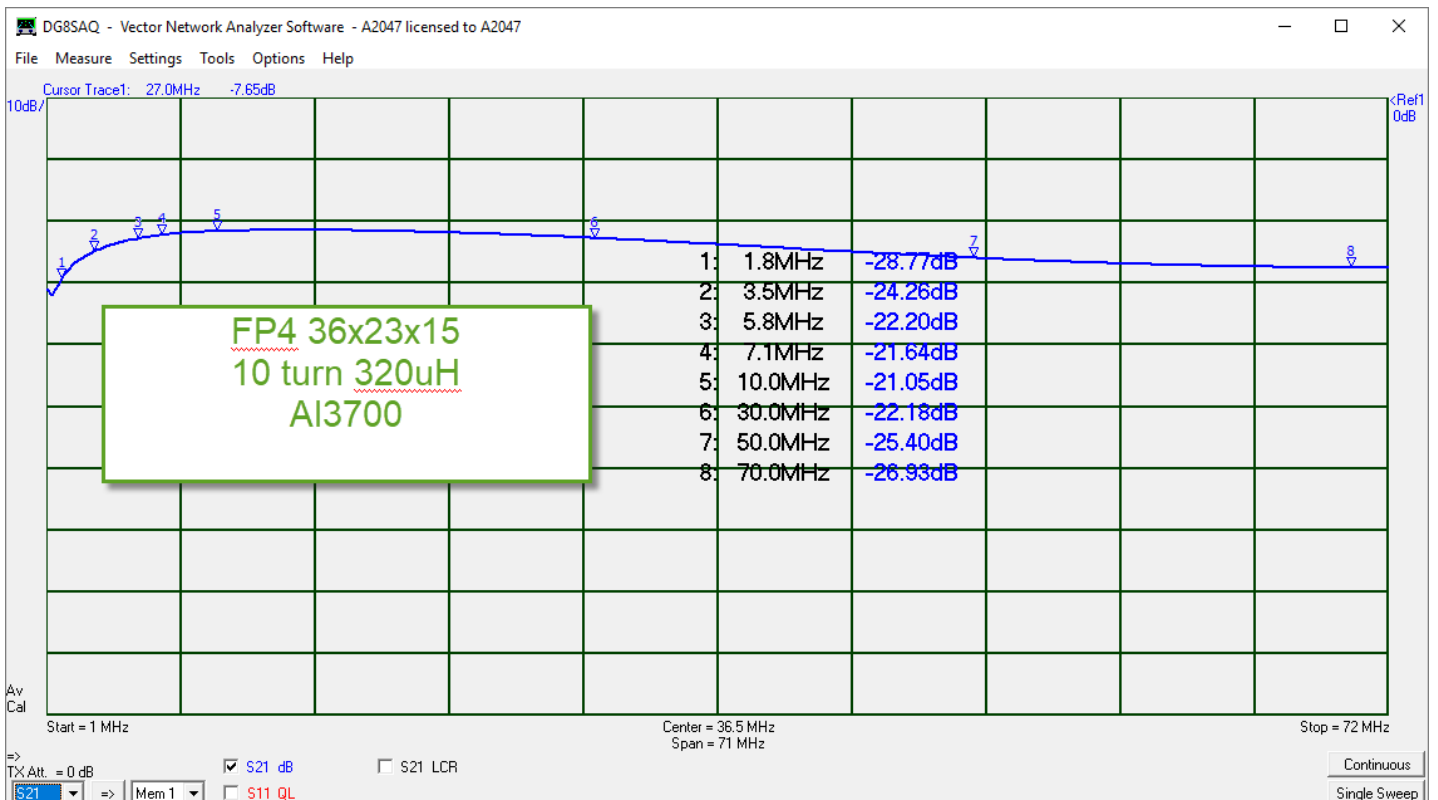
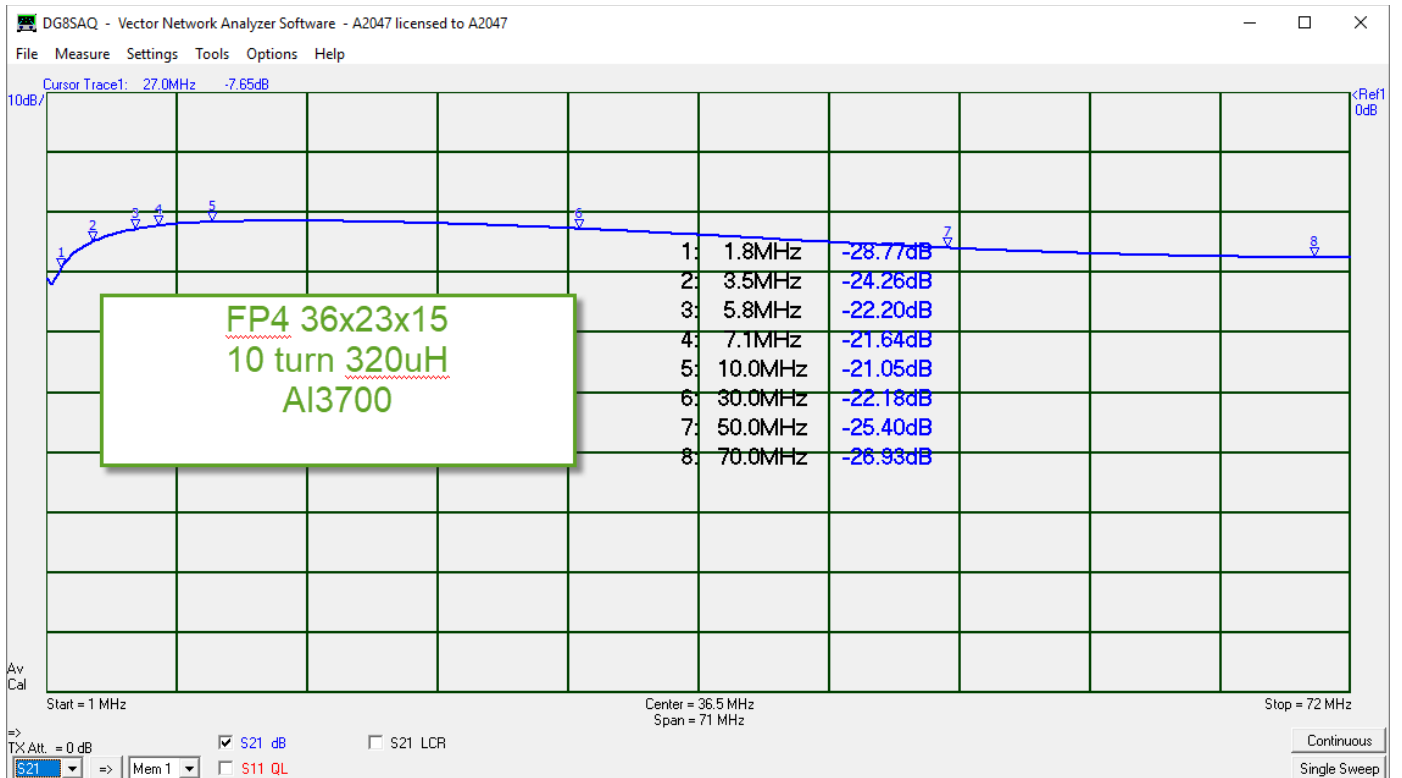


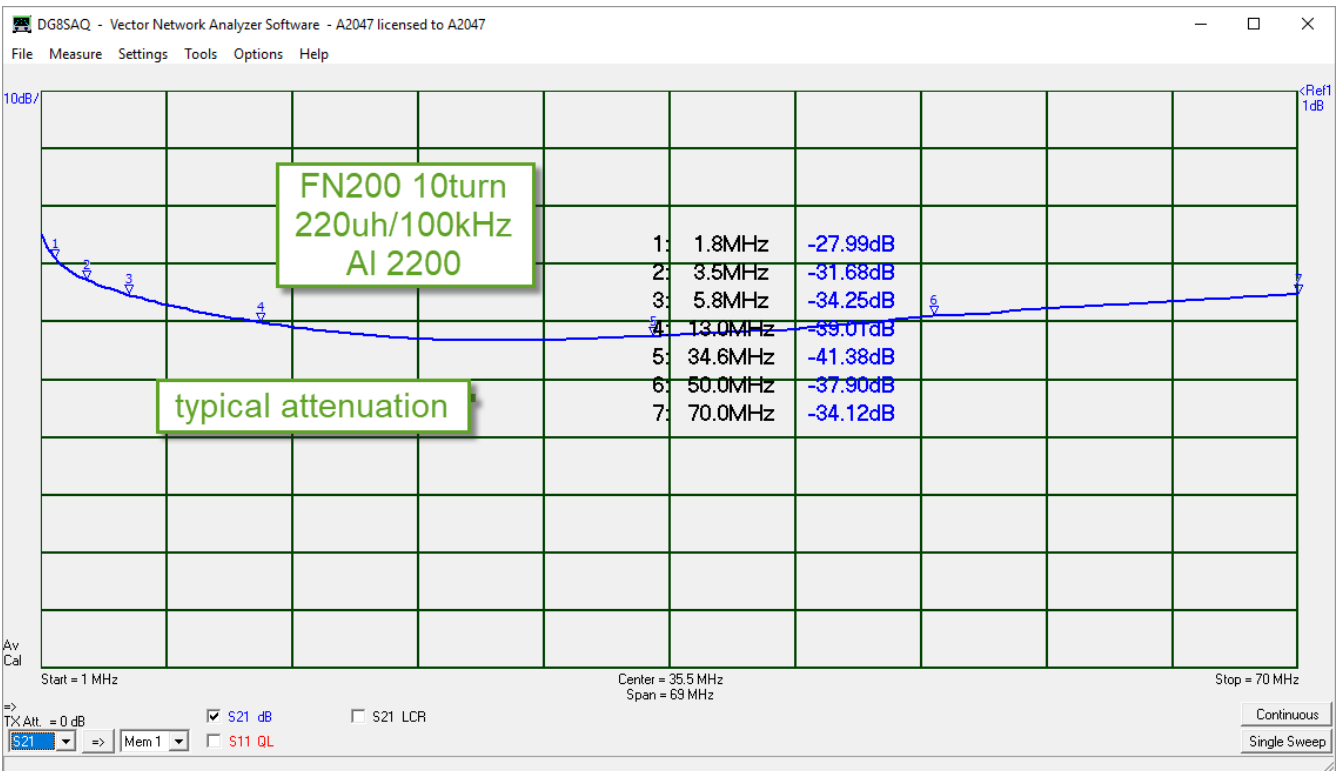
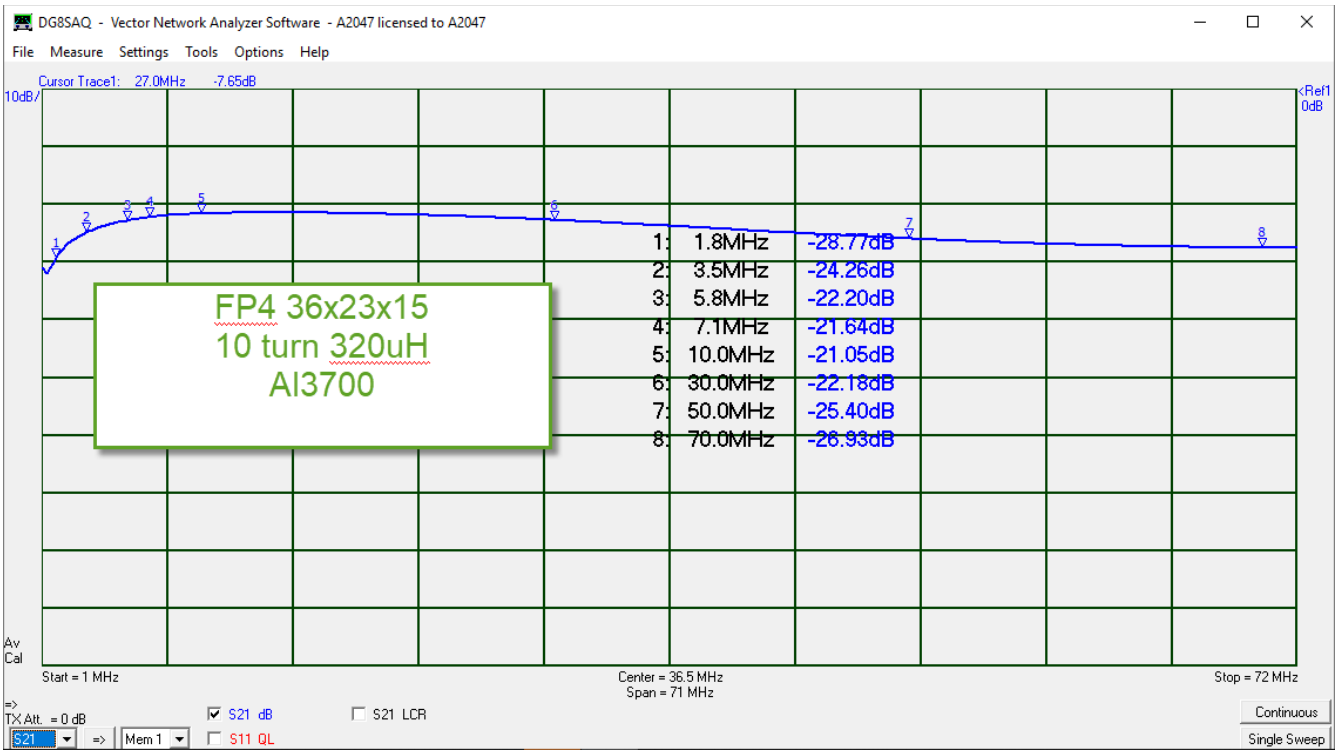
Test data with 10 & 1 turns on the cores:

Similar material to Amidon 77

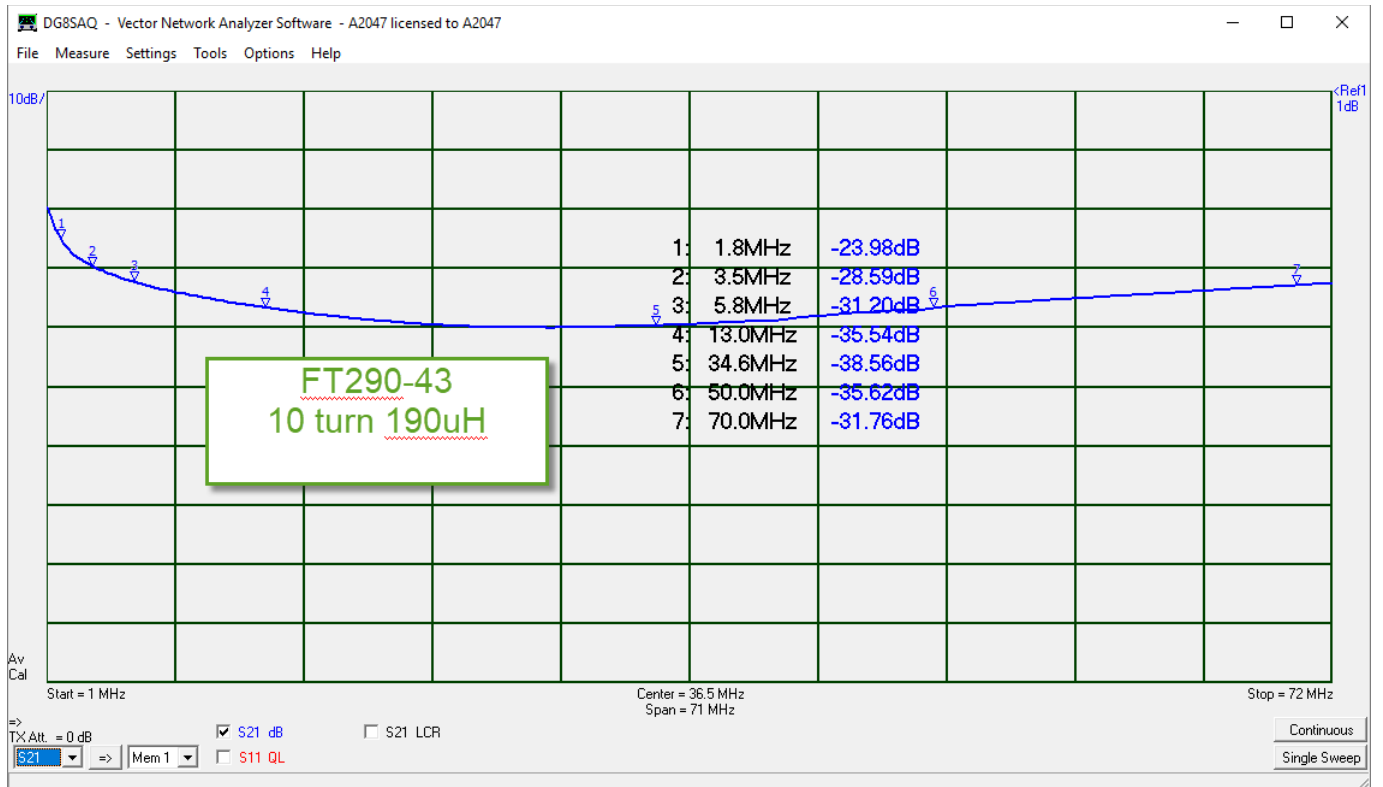
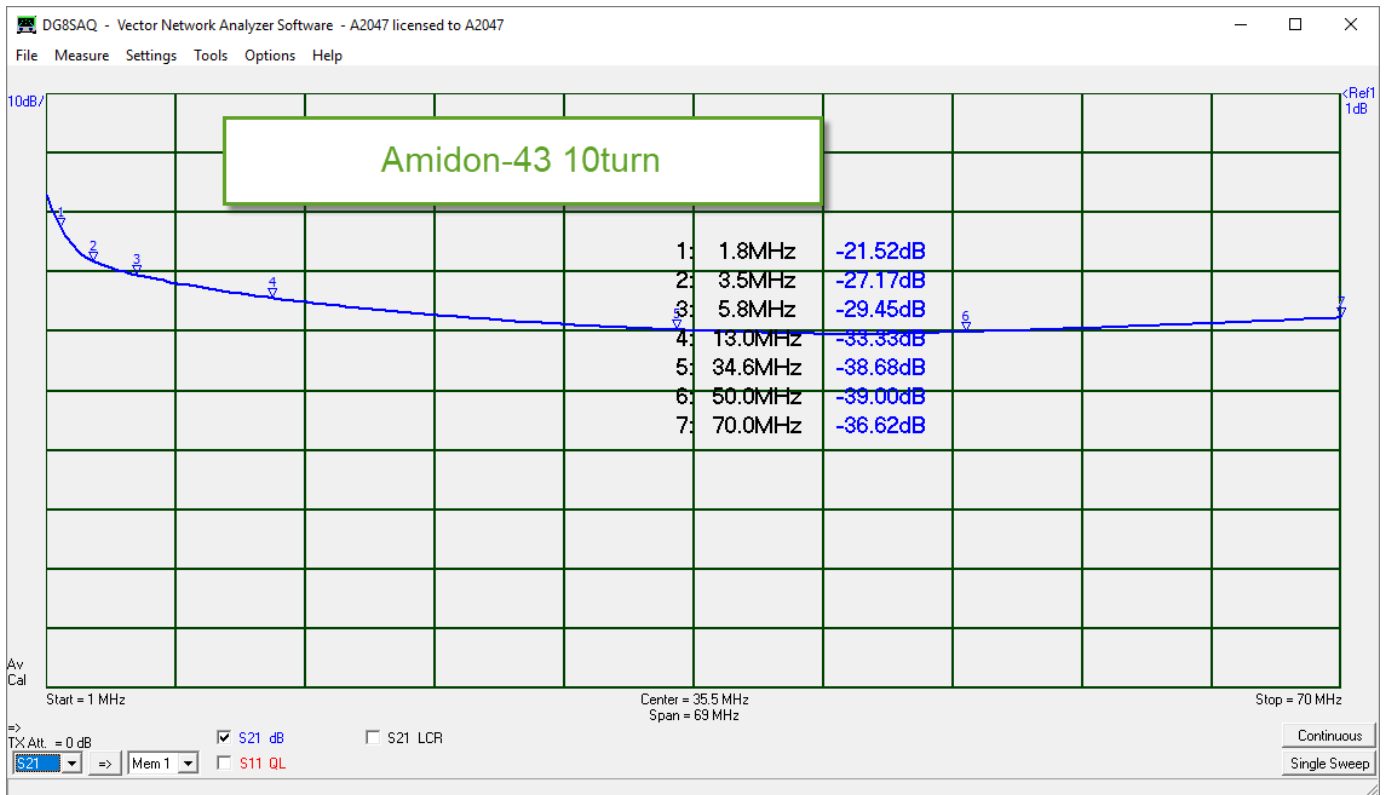
This core replaces 2 Amidon size 240

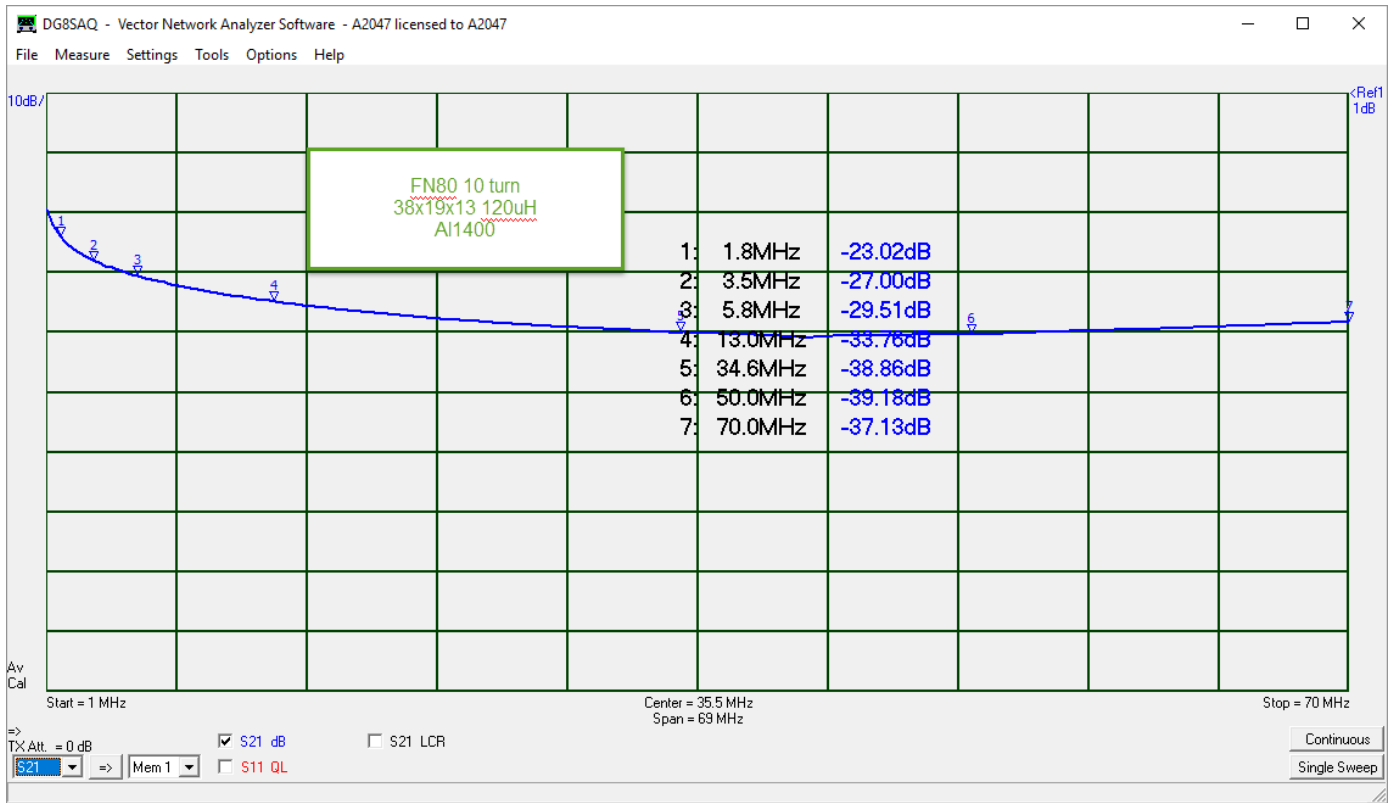
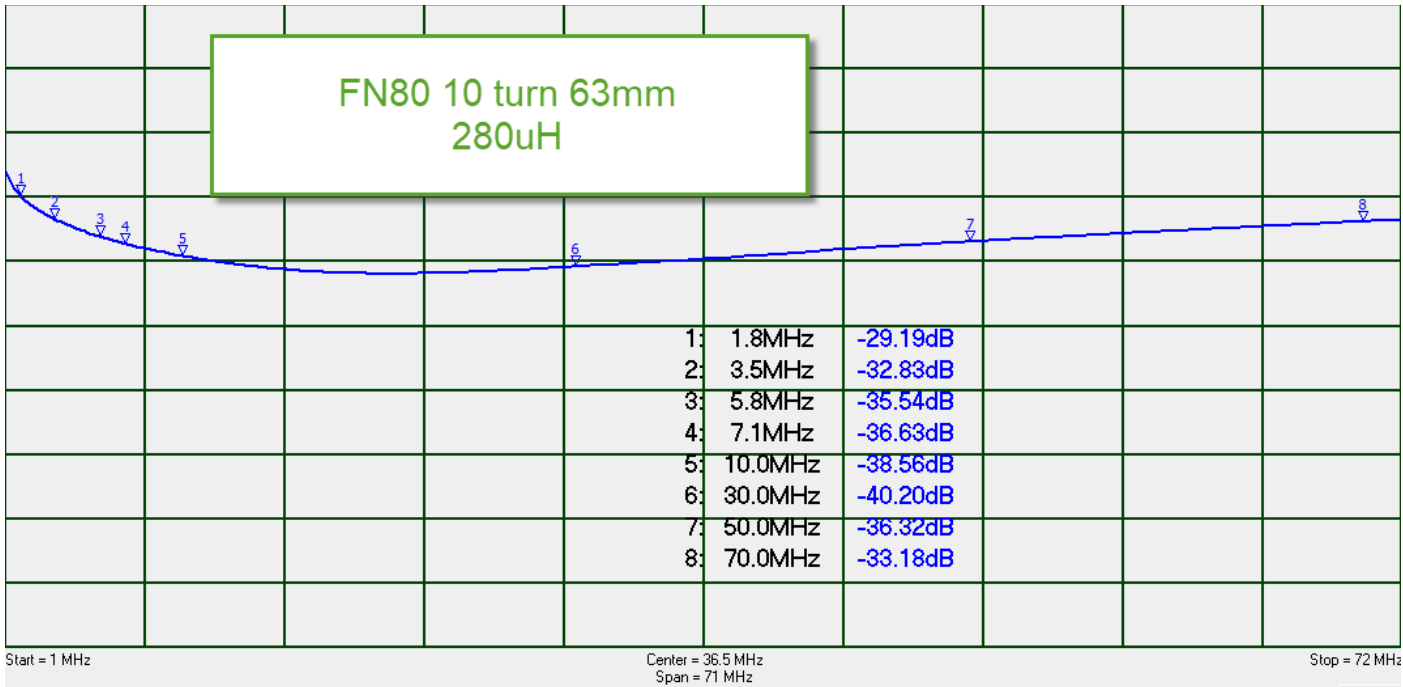


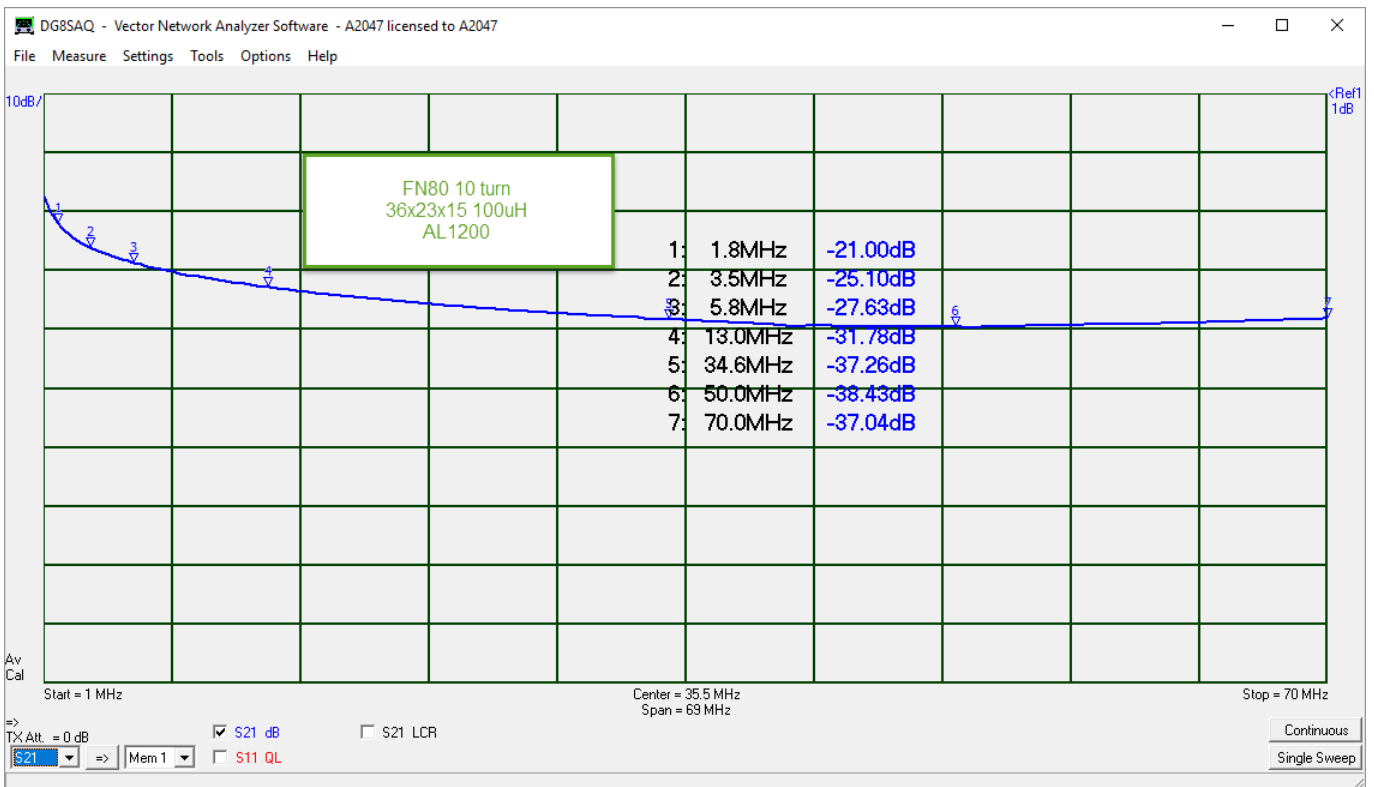
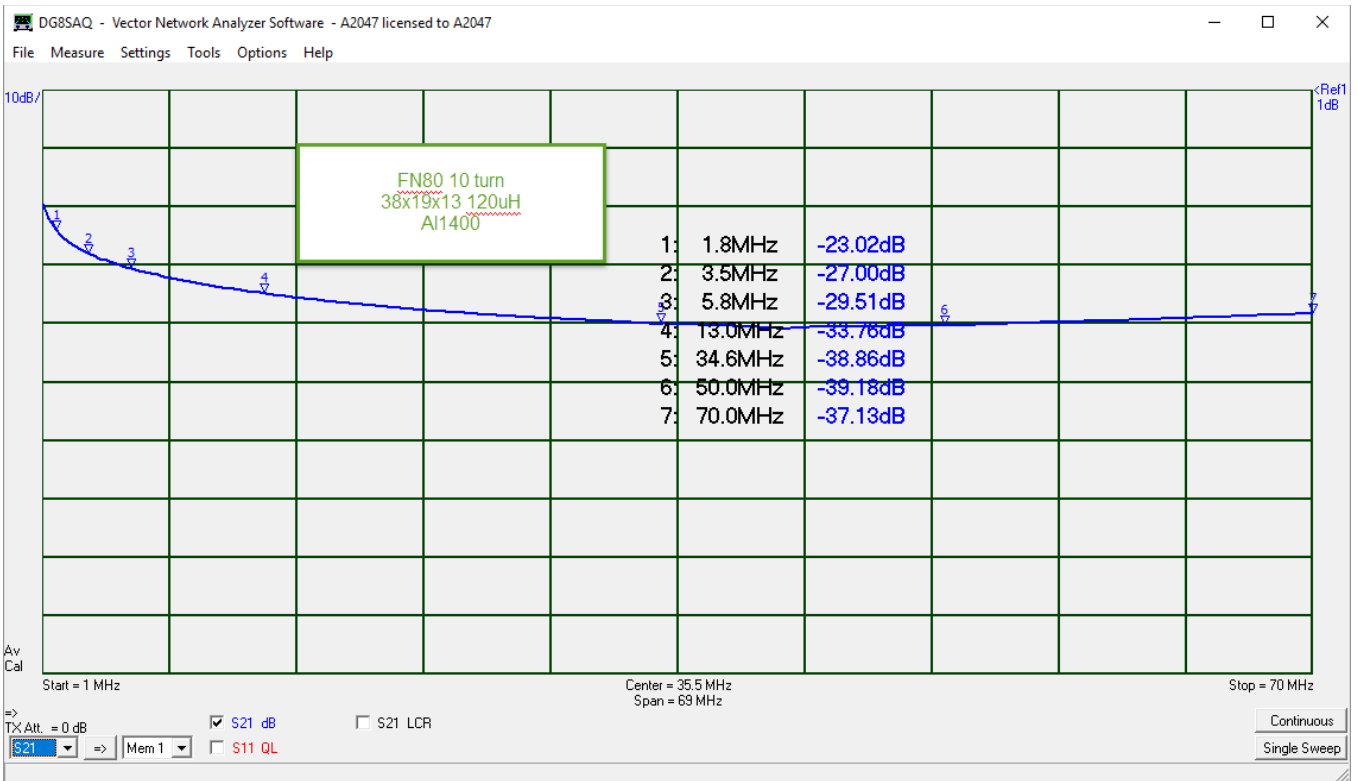


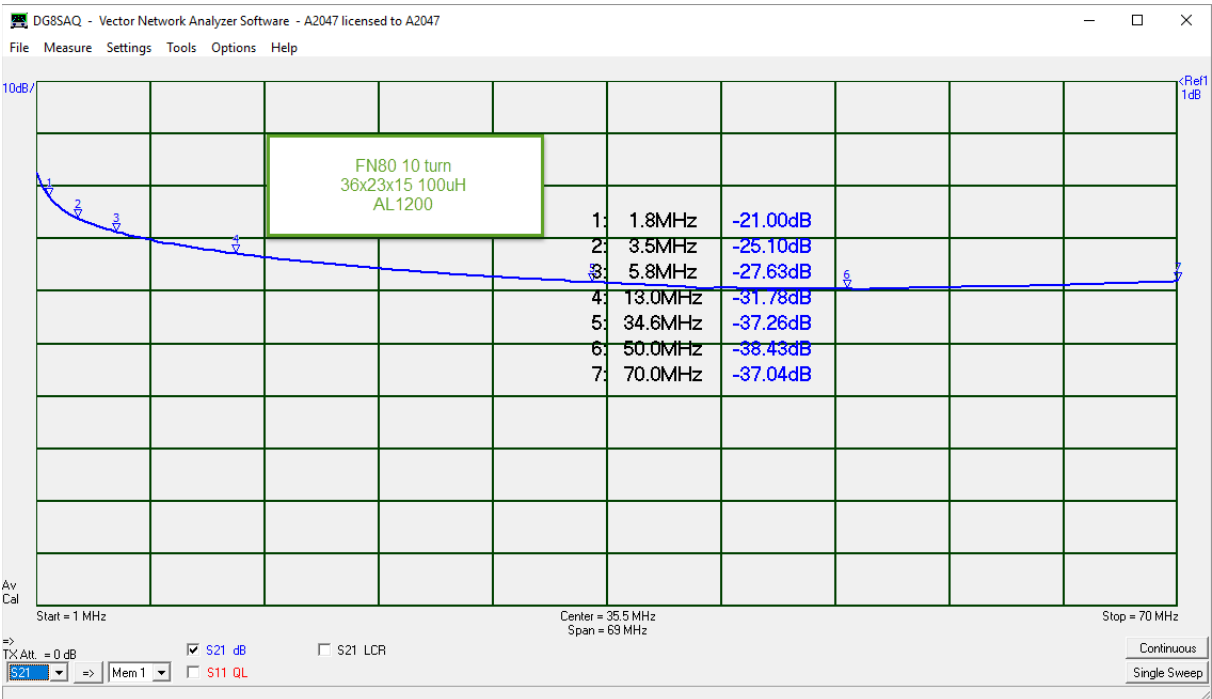
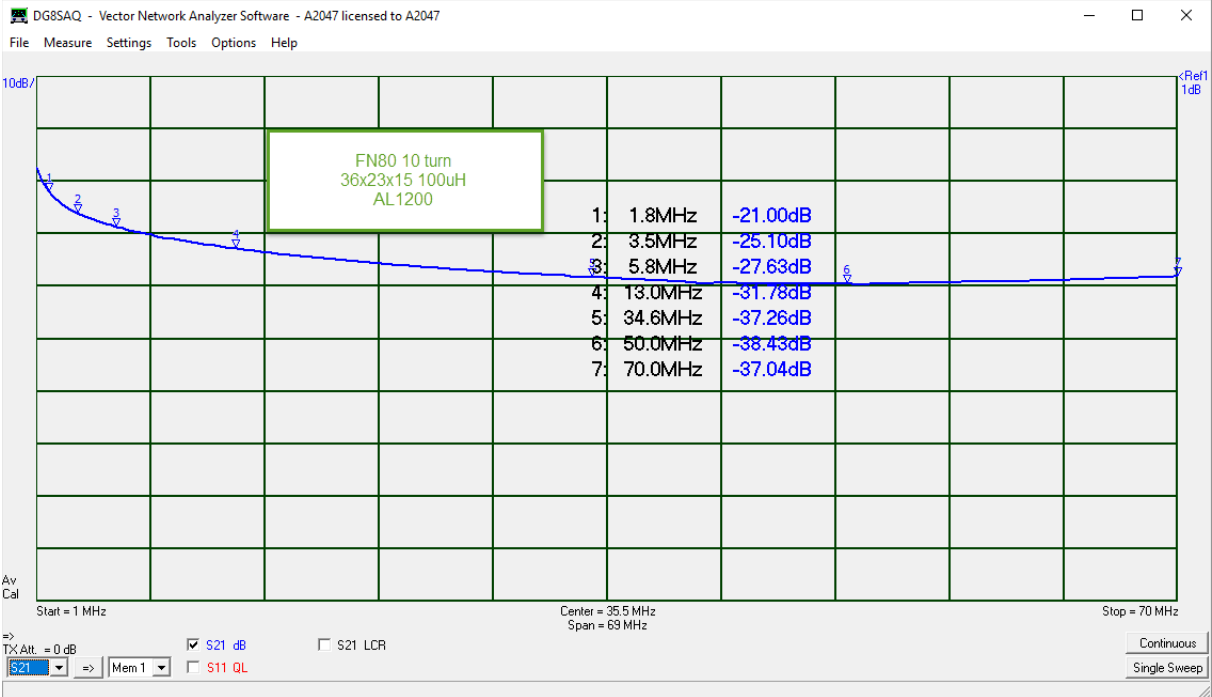


Amidon240

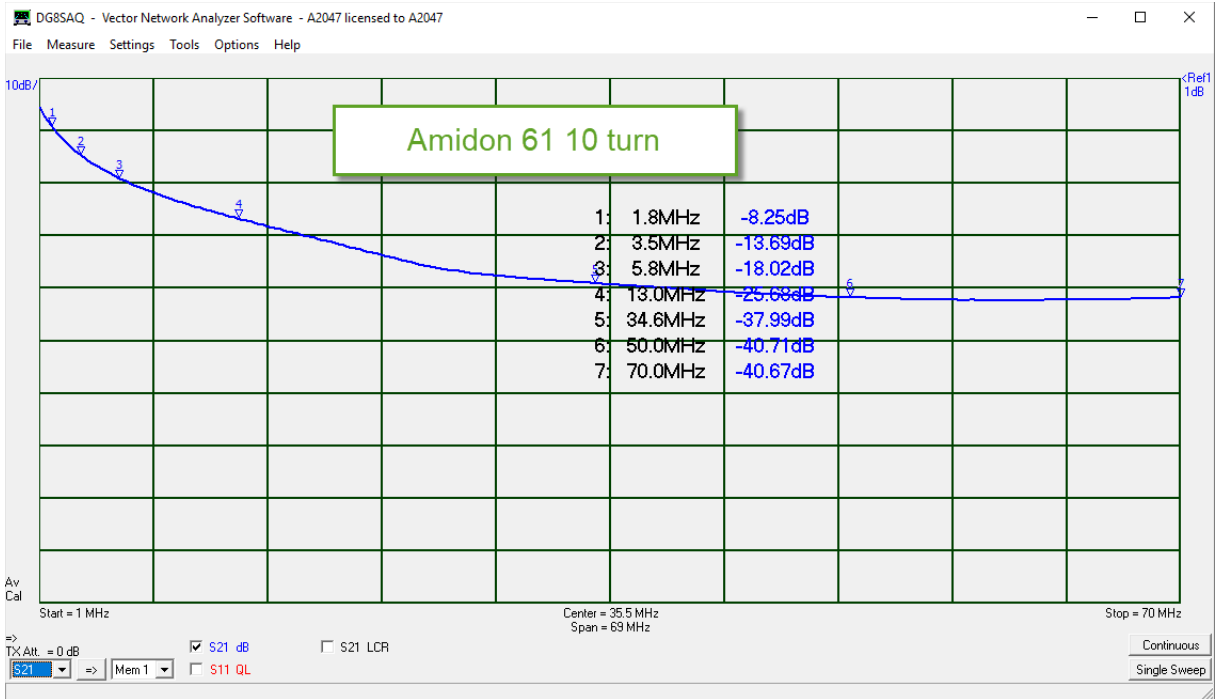




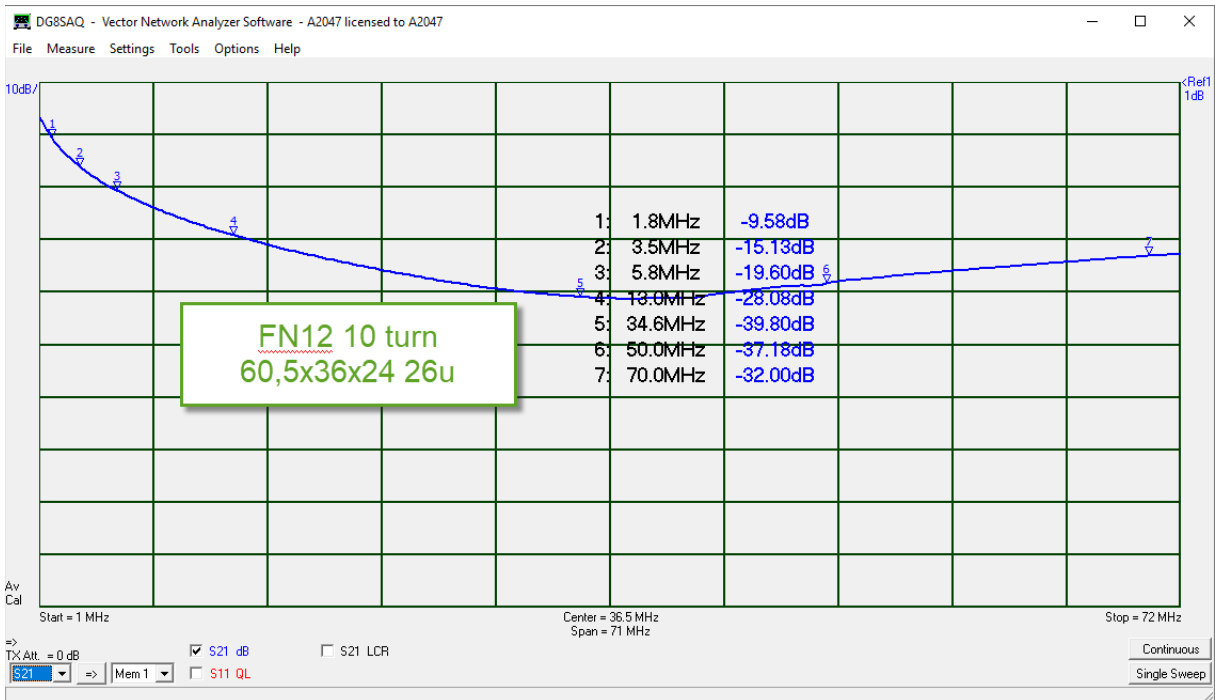




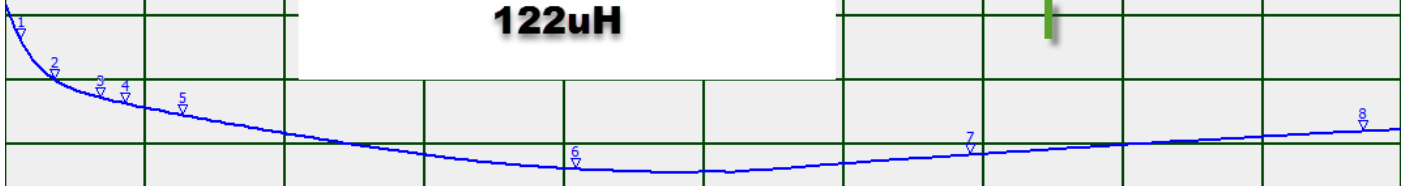
Amidon240



Replaces 2 Amidon240 - 61



**FN40 10 turn 63mm
122uH**



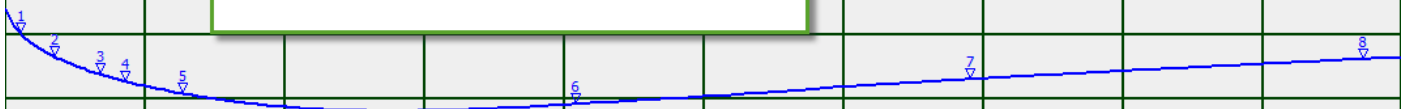
1:	1.8MHz	-23.16dB
2:	3.5MHz	-29.36dB
3:	5.8MHz	-32.13dB
4:	7.1MHz	-33.05dB
5:	10.0MHz	-34.86dB
6:	30.0MHz	-43.27dB
7:	50.0MHz	-41.03dB
8:	70.0MHz	-37.37dB

Start = 1 MHz

Center = 36.5 MHz
Span = 71 MHz

Stop = 72 MHz

**FN80 10 turn 63mm
280uH**

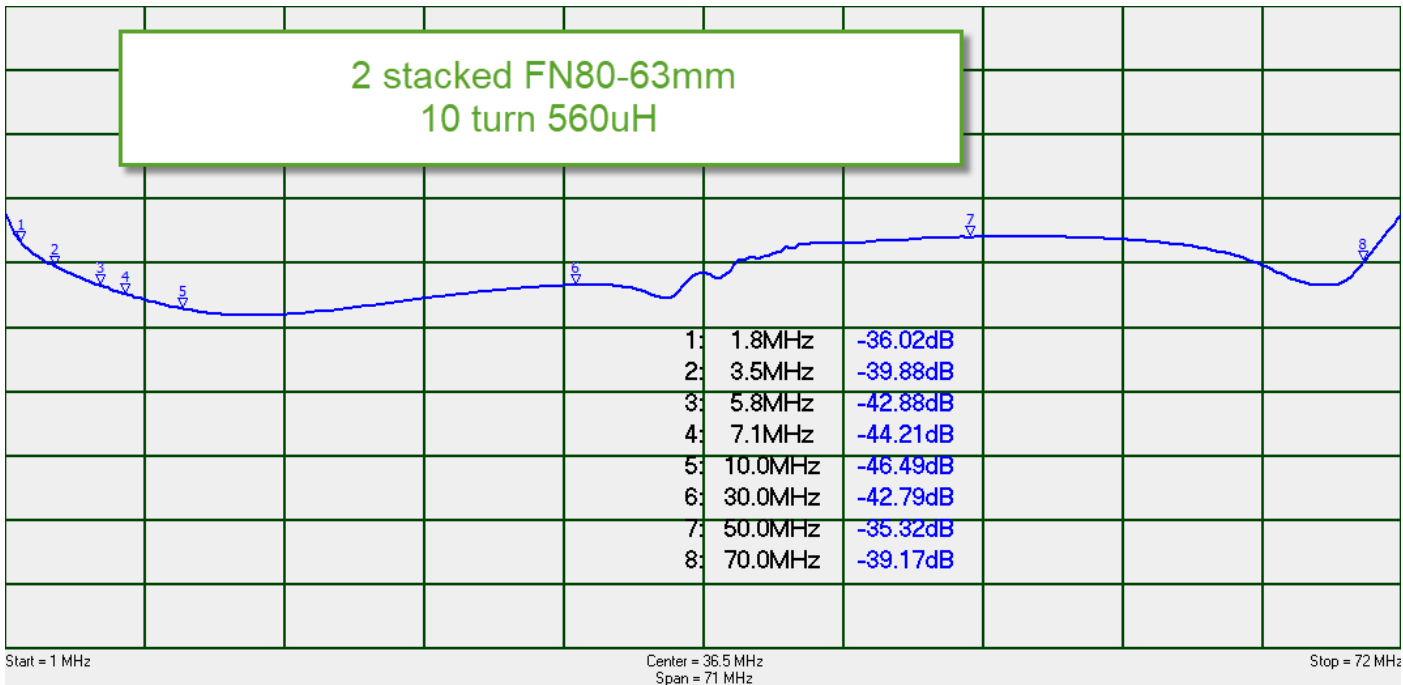
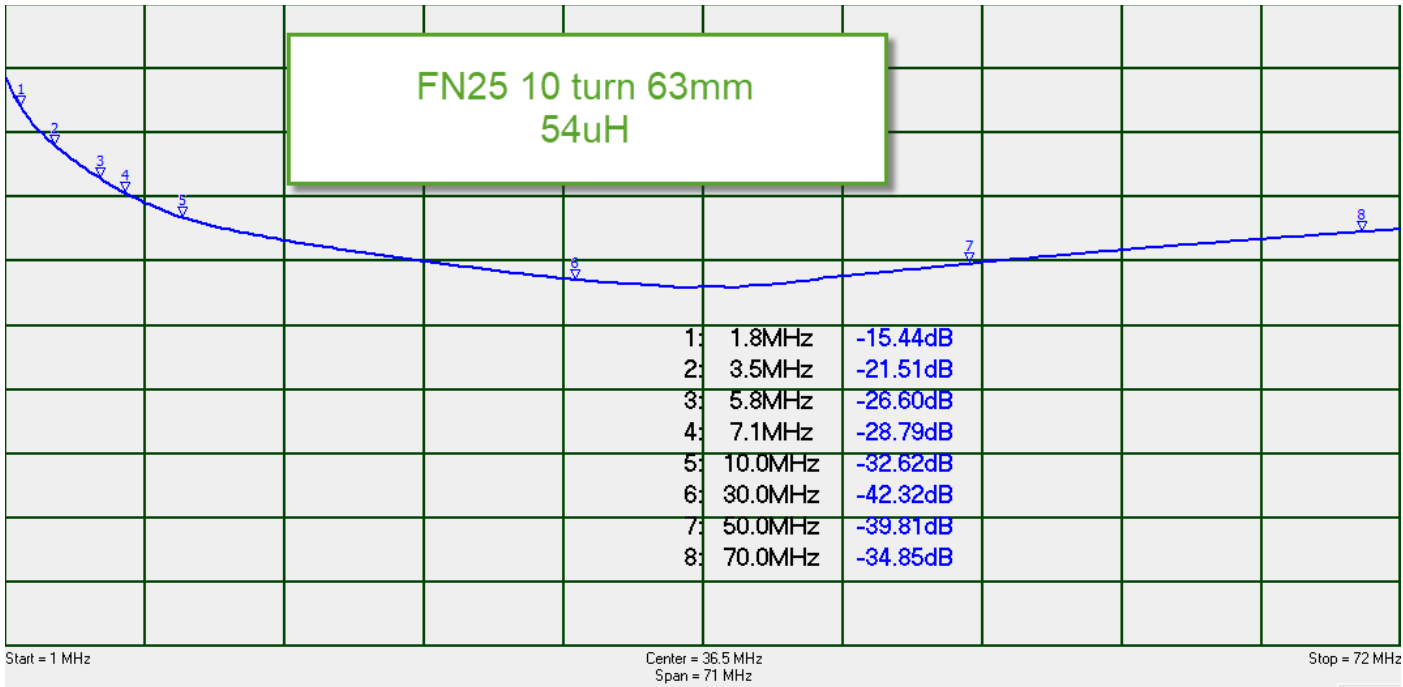


1:	1.8MHz	-29.19dB
2:	3.5MHz	-32.83dB
3:	5.8MHz	-35.54dB
4:	7.1MHz	-36.63dB
5:	10.0MHz	-38.56dB
6:	30.0MHz	-40.20dB
7:	50.0MHz	-36.32dB
8:	70.0MHz	-33.18dB

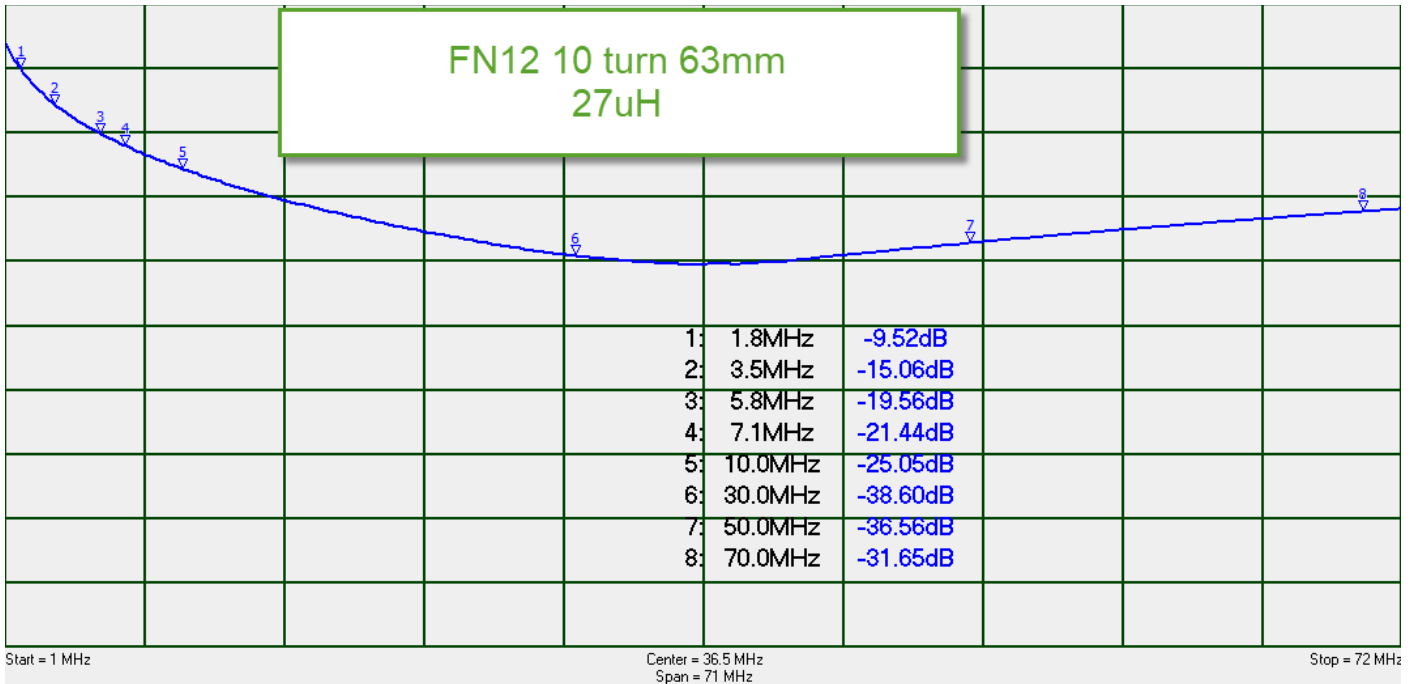
Start = 1 MHz

Center = 36.5 MHz
Span = 71 MHz

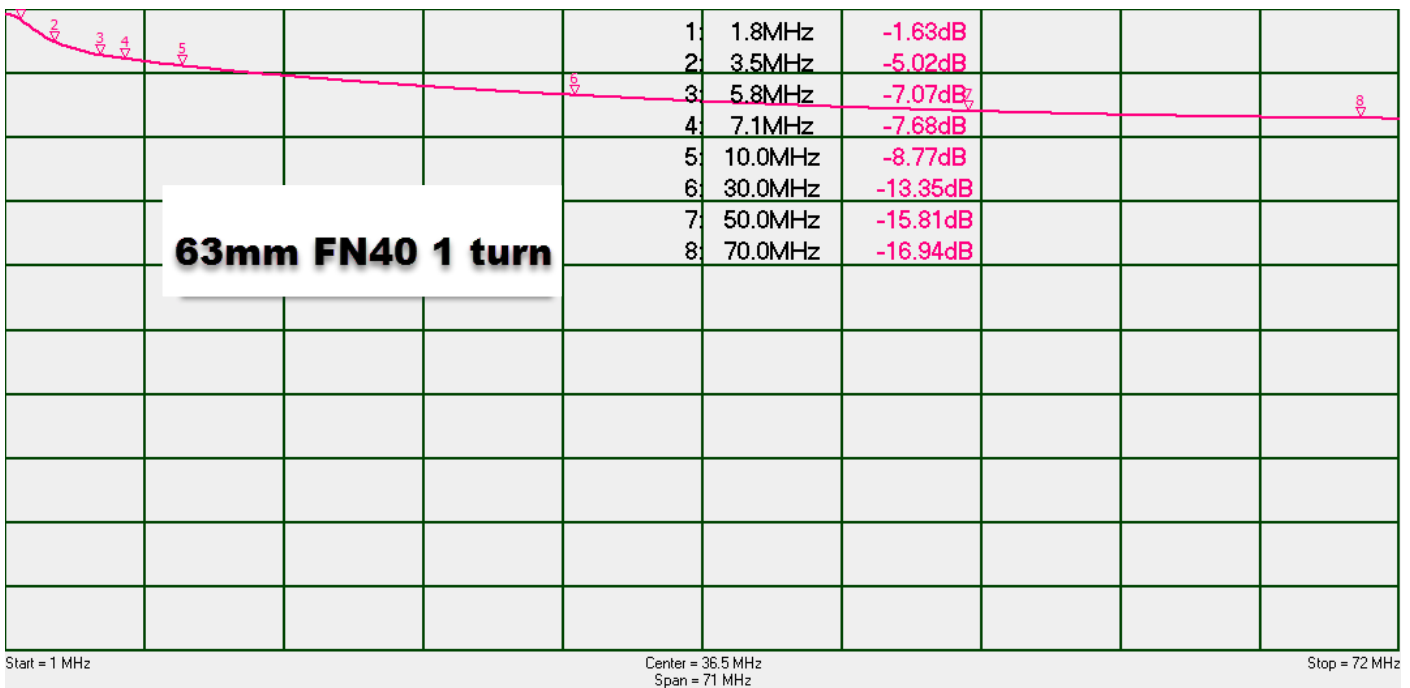
Stop = 72 MHz

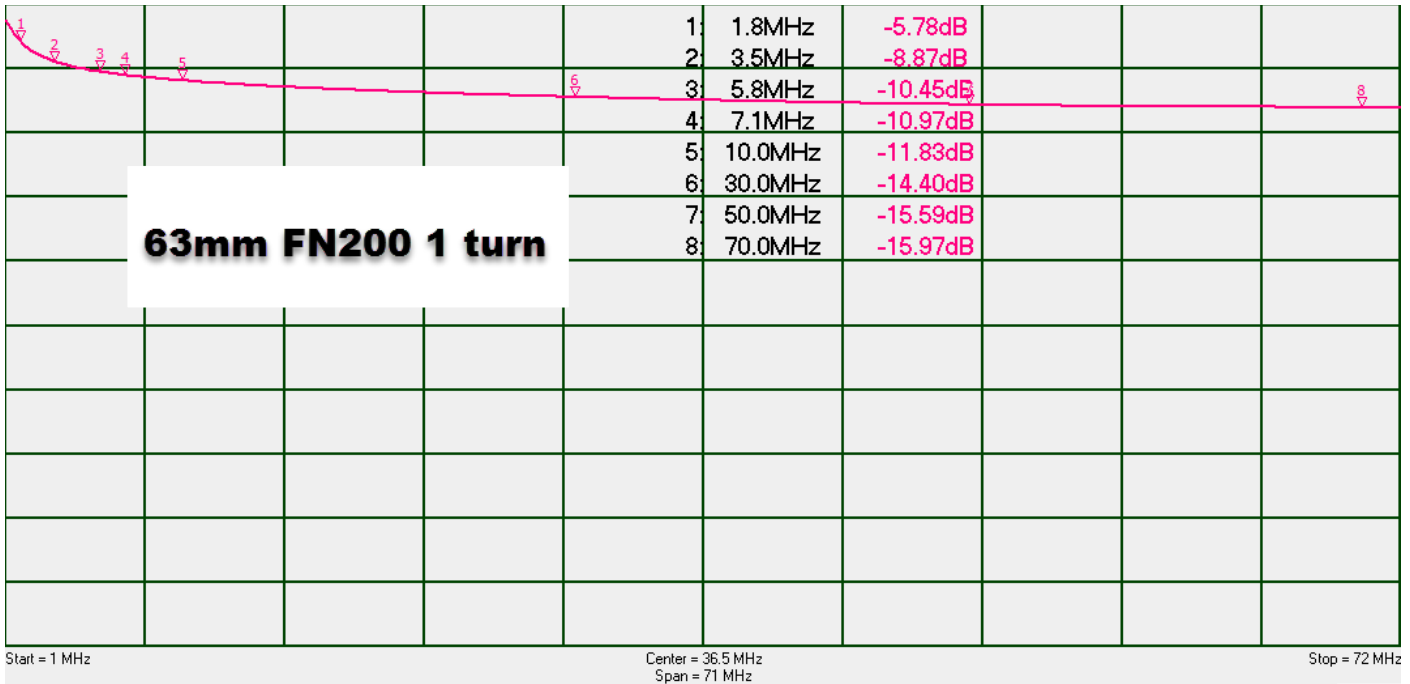


FN12 10 turn 63mm
27uH

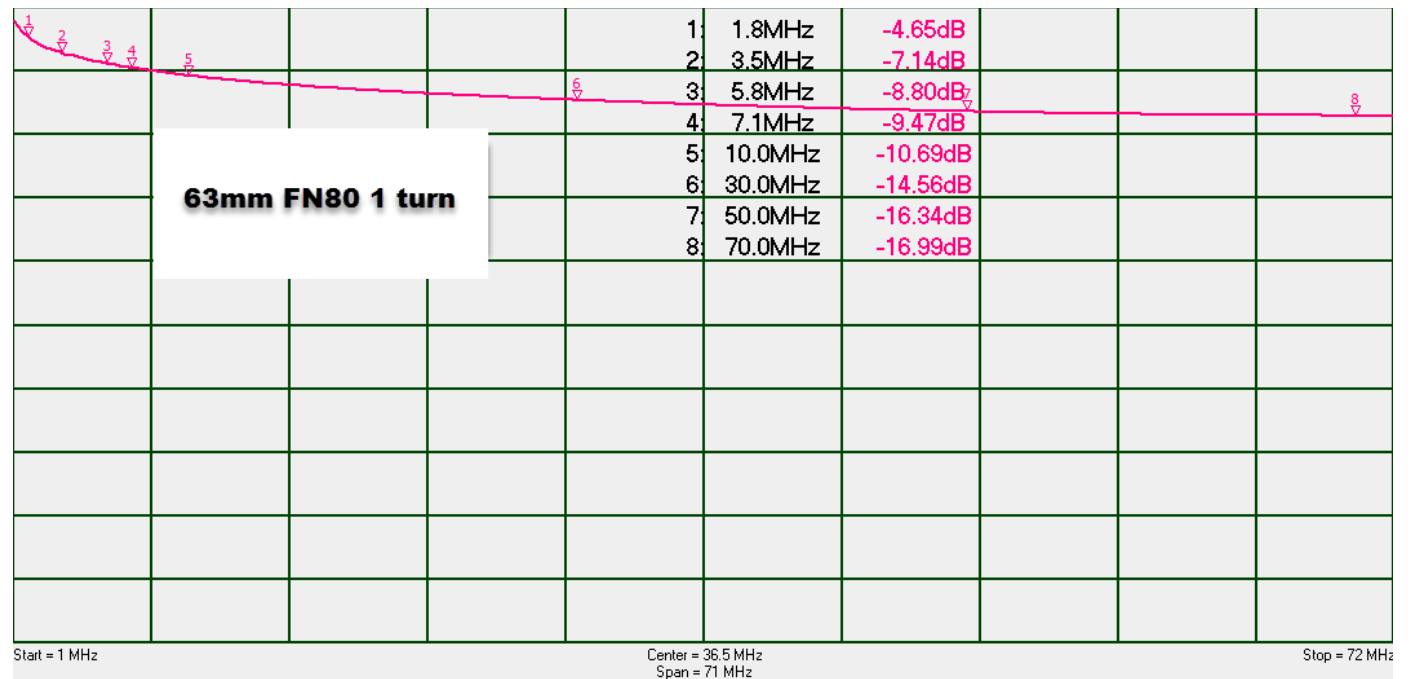


63mm FN40 1 turn

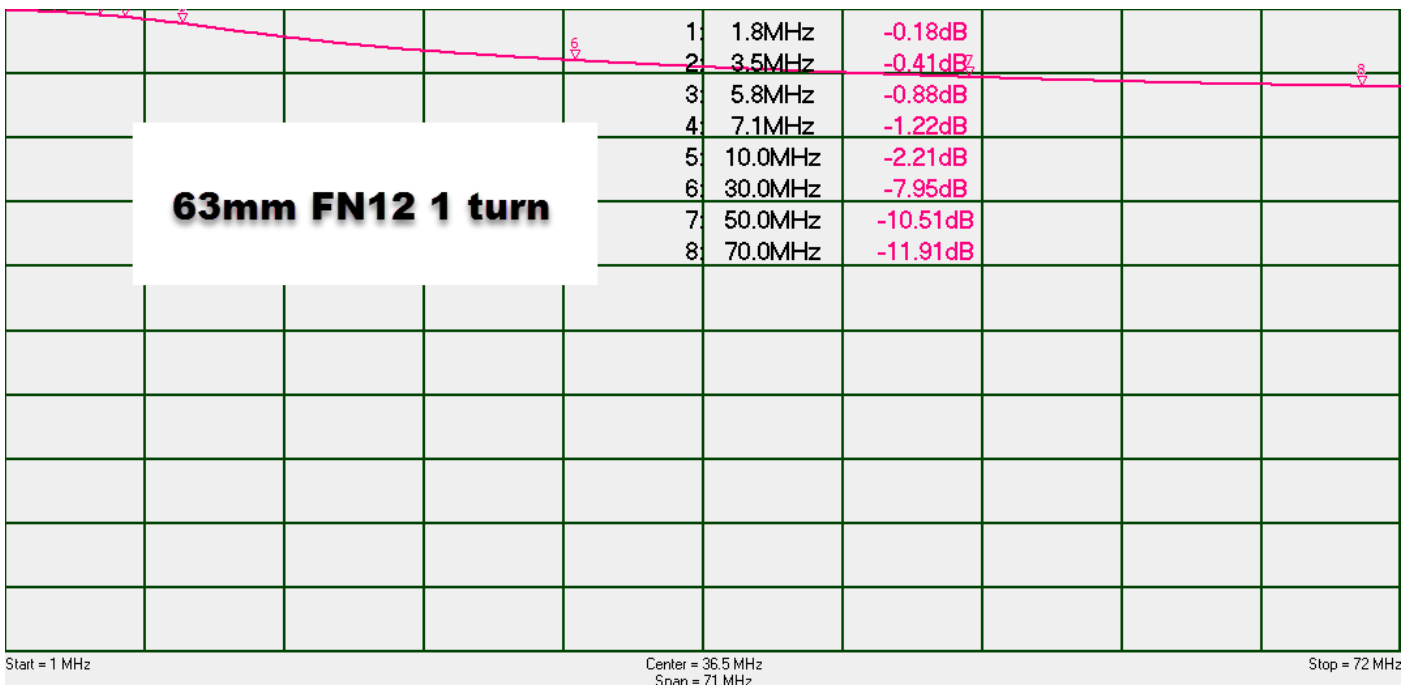
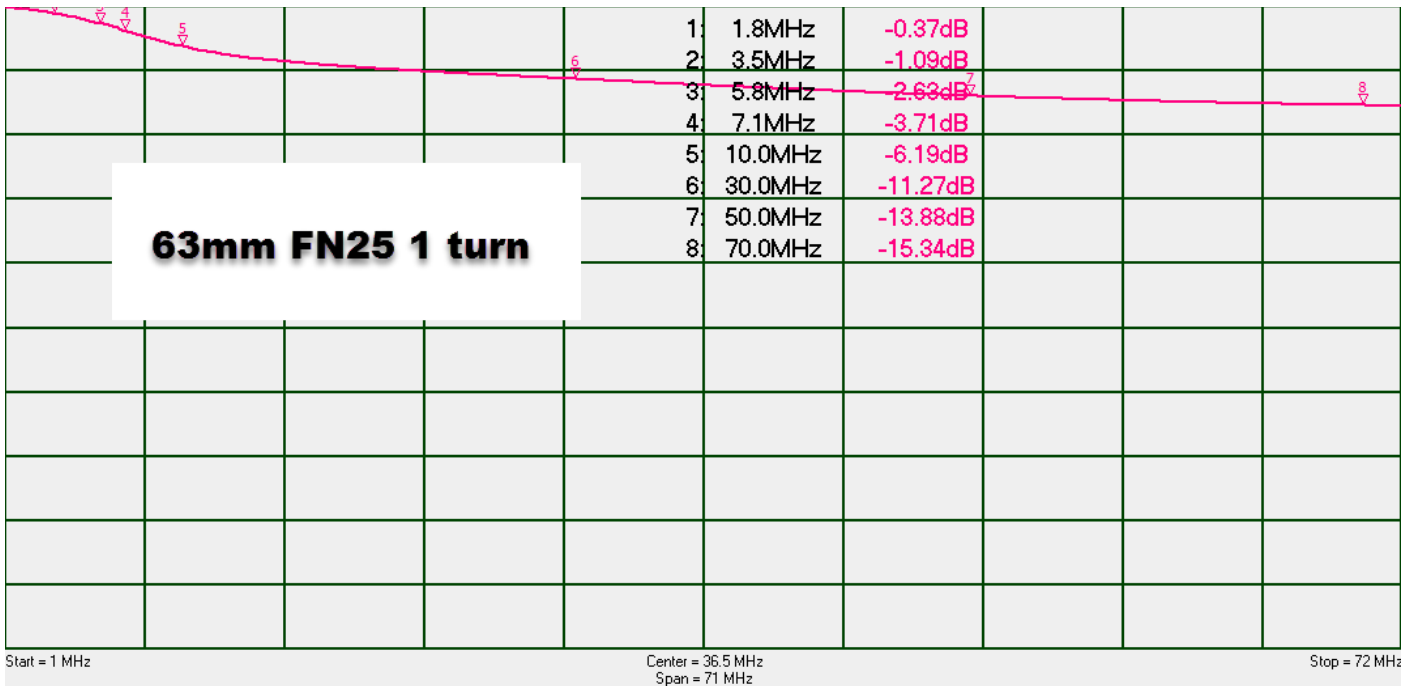


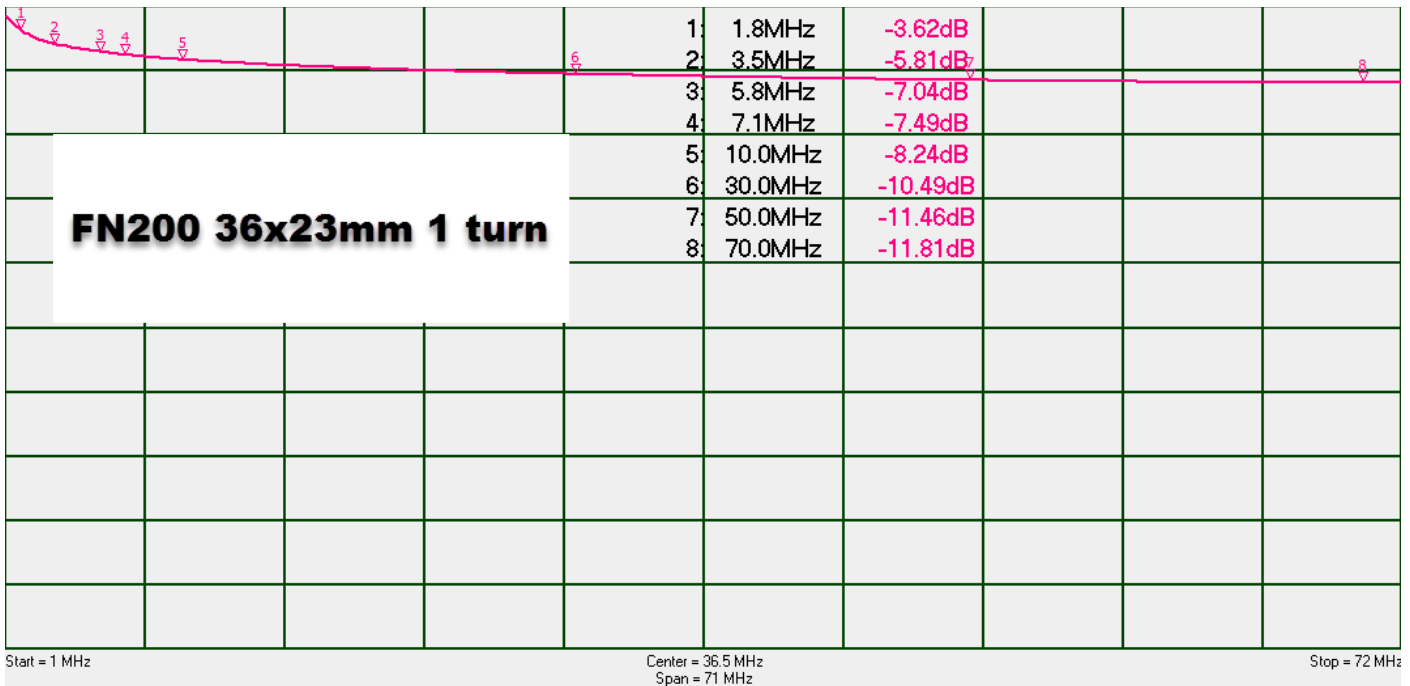


63mm FN200 1 turn

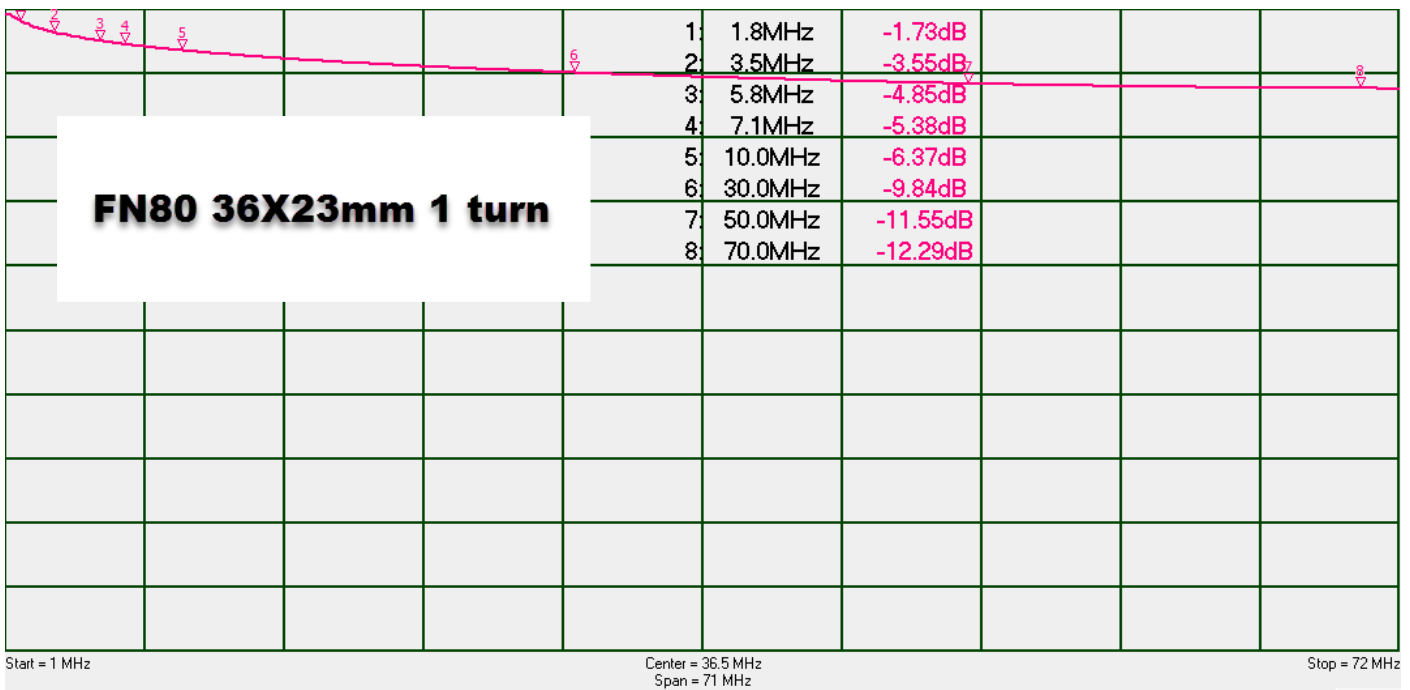


63mm FN80 1 turn

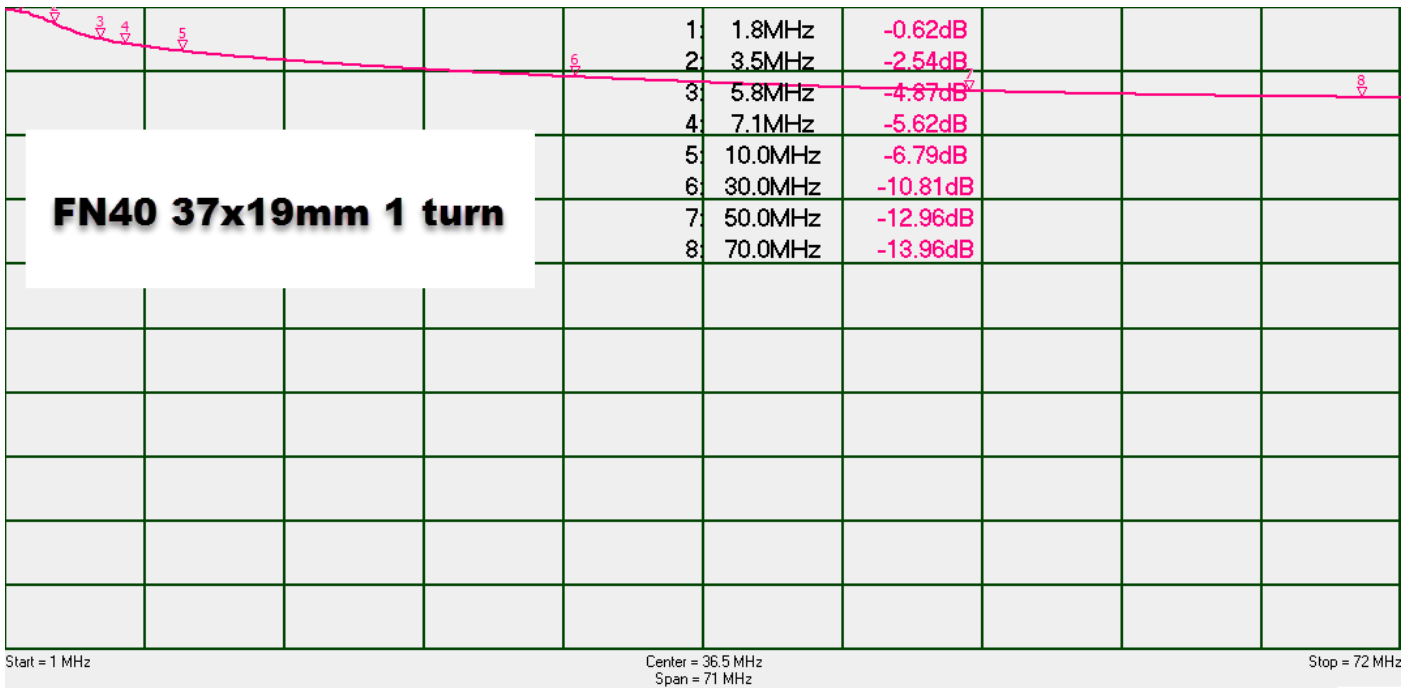
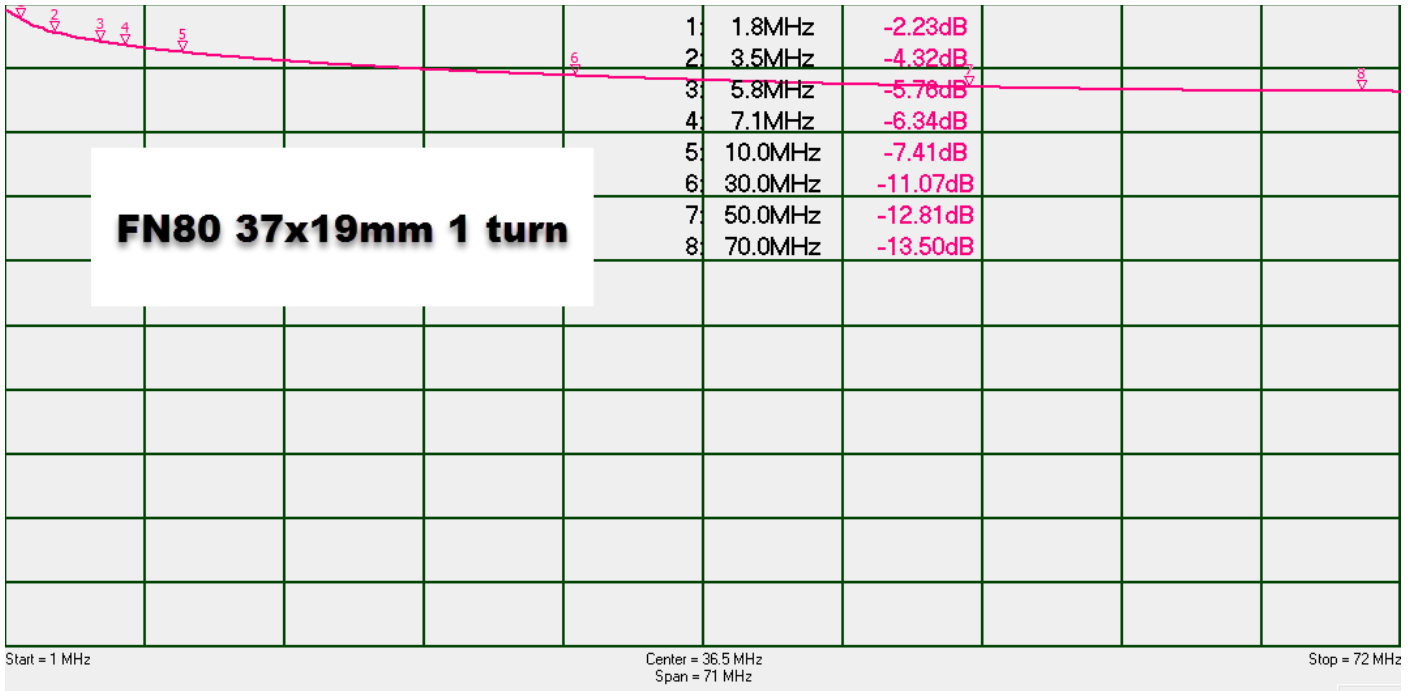


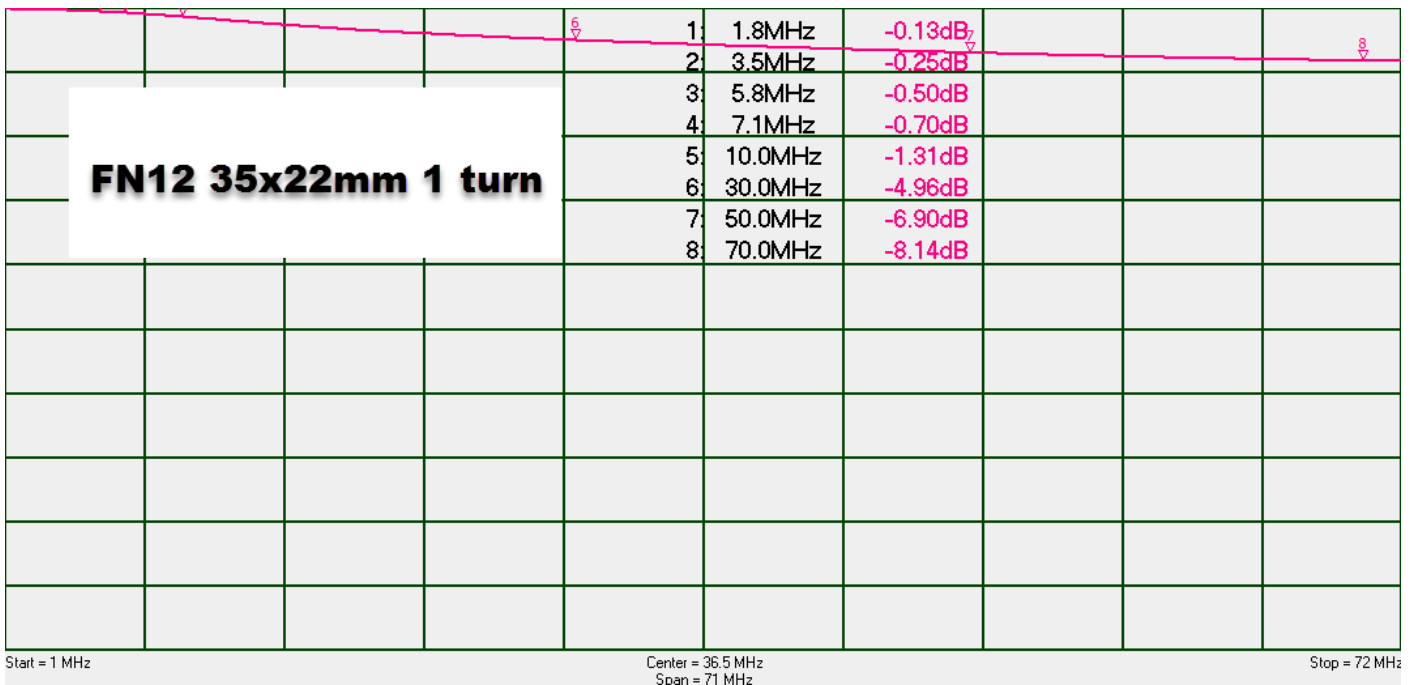
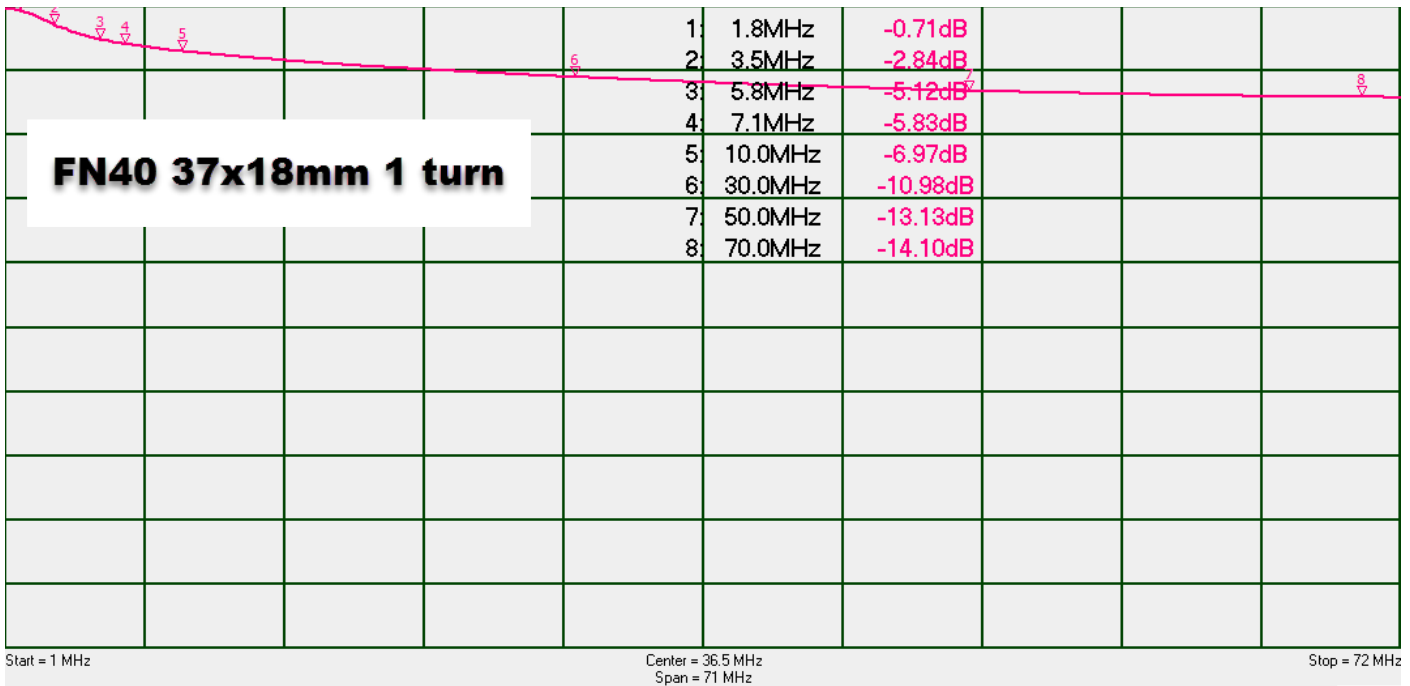


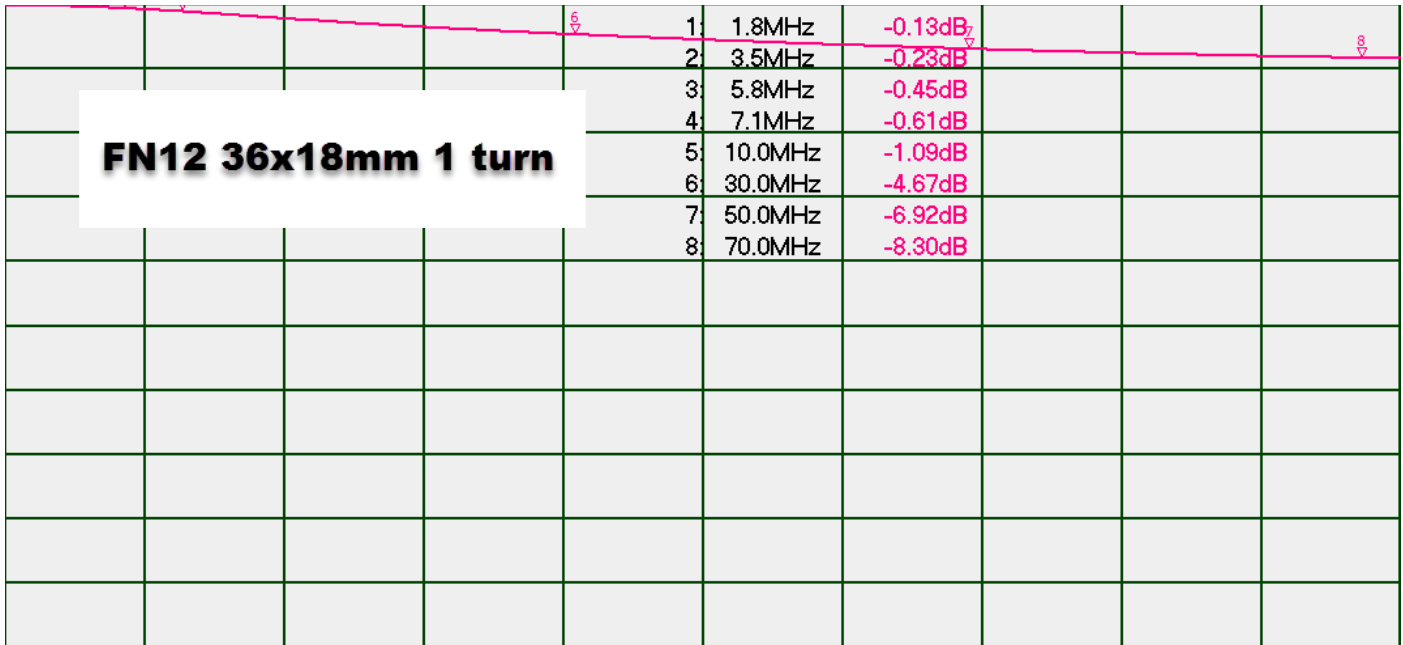
FN200 36x23mm 1 turn



FN80 36X23mm 1 turn







Start = 1 MHz

Center = 36.5 MHz
Span = 71 MHz

Stop = 72 MHz

OTHER TESTS:

