thermal noise							
bw	1.000E+00	Hz	+				
			man of CC dom	·	* 10 1 doa(C)		
temp	292.3	DegK (fior lab te	emp of 66 deg	ji oi	19.1 degC)		
Boltzman k=	1.38E-23	joule/degK					
noise power	4.035E-21	watts					
	-1.739E+02	dBm					
Minicircuits ZX60-6013E-S		2 independent cl	hains of 5 of i	dent	tical amplifier	3	
gain	16.2	dB out to 1.x GH	lz; drops dowr	n to	12 dB at 6 G	Hz.	
noise figure	3.2	dB					
noise factor	2.1						
Tequiv	318.4	degK					
frequency high	6	GHz					
frequency low	0.02	GHz					
P1dB input power at 20 MHz	-2.8	dBm					
P1dB input power at 6 GHz	-6.3	dBm					
12V typical current	0.039	amps					
12V maximum current	0.05	amps					
		1					
amplifiers in an output chain	5						
chains	2						
total number of amplifiers	10						
total 12V current (typ)	0.39	amps					
total 12V current (typ)	0.5	amps	+				
total 12 v cullent (max)	0.5	απρο	+				
power supply			+				
Accopian A12TN-110							
120 VAC only	10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					
output volts	12	Vdc					
Output current	1	amps					
excess capacity	0.5	amps					
excess capacity per chain	0.25	amps					
amp1 noise factor F	2.1						
Net amp2 noise factor F	2.2						
Net amp3 noise factor F	2.2						
Net amp4 noise factor F	2.2						
Net amp5 noise factor F	2.2						
Tequiv	339.3	degK					
	NF = 0 dB	estimated NF					
bandwidth	1	1	Hz				
input level	-173.9	-173.3	dB/band				
·							
LMR-195 PVC 6ft cable into the sp	pectrum analyzer	0.5	dB loss at 50	00 N	1Hz		http://www.timesmicrowave.com/cgi-bin/calculate.pl
		0.6			1Hz from netv		
		0.0	0.2 1000 at 0				
	theory	theory	measured		measured		
	NF = 0 dB	estimated NF	left output		right output		
amp1 output	-157.7	-157.1	output		g oatpat		
amp2 output	-137.7	-140.9					
amp3 output	-141.5	-140.9	+				
amp4 output	-125.3	-124.7	+				
amp5 output	-109.1	-108.5					
loss due to internal cables	-92.9	0.5					from notwork analyzer of a similar coble
		-92.8	02.700		04.000		from network analyzer of a similar cable
net output level	-93.5	-92.8	-93.788		-94.888		
	1-1						
Hmmm: why are the levels of the							
check spectrum analyzer gain vert							
add in 0.3 dB for error at 50 Mhz to	est tone; then diffe	rence is about 1 t	o 2 dB				
maybe amplifier gain is not quite the							
if they were just a few fractions of	a dB less gain the	n have about an	exact match.				
close enough for now							

noise_box_spreadsneet_2013apr 2013mar10	UPGRADED L	Pand noice hav	\v/i+l	04/10/20		nin		T
20131110110	OFGRADED L	Danu noise box	VVILI	TEPF and mor	e ya	aii i		
thermal noise								
bw	1.000E+00	Hz	1	ma of CC door		10.1 dosC)		
temp Boltzman k=	292.3 1.38E-23	joule/degK	່ງ ເe	mp of 66 degF	OI.	19.1 degC)		
noise power	4.035E-21	watts						
	-1.739E+02	dBm						
Minicircuits ZX60-6013E-S		2 independen	t ch	nains of 5 of ide	entic	al amplifiers		
noin	10.0	dD out to 1 v			ho 1			
gain noise figure	16.2 3.2	dB out to 1.x t	GH.	z; drops down t	10 1	2 0B at 6 GHZ.		
noise factor	2.1	ав						
Tequiv	318.4	degK						
frequency high	6	GHz						
frequency low	0.02	GHz						
P1dB input power at 20 MHz P1dB input power at 6 GHz	-2.8 -6.3	dBm dBm						
12V typical current	0.039	amps						
12V maximum current	0.05	amps						
		•						
amplifiers in an output chain	5							
chains	2					-		
total number of amplifiers total 12V current (typ)	0.39	amps					-	
total 12V current (max)	0.5	amps						
	3.3							
power supply								
Accopian A12TN-110								
120 VAC only) (al -			_			
Output current	12	Vdc						
Output current excess capacity	0.5	amps amps						
excess capacity per chain	0.25	amps						
. , ,								
amp1 noise factor F	2.1							
Net amp2 noise factor F	2.2							
Net amp3 noise factor F	2.2							
Net amp4 noise factor F Net amp5 noise factor F	2.2							
Tequiv	339.3	degK						
10400								
	NF = 0 dB	estimated NF						
bandwidth	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1		Hz				
input level	-173.9	-173.3	-	dB/band				
LMR-195 PVC 6ft cable into the s	nectrum analyzer	0.5		dB loss at 500) MF	│ -		http://www.timesmicrowave.com/cgi-bin/calculate.p
		0.6				Hz from networ	k an	
	theory NF = 0 dB	theory estimated NF		measured left output		measured		
amp1 output	-157.7	-157.1		ieit output		right output		
amp2 output	-141.5	-140.9						
amp3 output	-125.3	-124.7						
amp4 output	-109.1	-108.5						
amp5 output	-92.9	-92.3						
loss due to internal cables	0.6 -93.6	0.6 -92.9		-93.788		-94.888		from network analyzer of a similar cable
net output level	-93.0	-92.9	1	-93.700		-94.000		
Hmmm : why are the levels of the	lab measuremen	t a few dB off ?						
check spectrum analyzer gain ver	tical scale calibrat	ion						
add in 0.3 dB for error at 50 Mhz	test tone; then diff	erence is about	1 to	2 dB				
months constitution	the true is a l	10 0 f = - 500 t =						
maybe amplifier gain is not quite if they were just a few fractions of				vact match				
ii they were just a lew fractions of	a ud less gain in	EII HAVE ADOUL 8	λ11 Θ	naci iiidleii.				
close enough for now								
2013mar09 revisions		+			\vdash	-		
ENTOINGING ICAIQINIS		+			\vdash	+		
		1						
first add VLF-800 low pass filters			1	MHz				
first add VLF-800 low pass filters F1dB		800						
first add VLF-800 low pass filters F1dB F3dB		1075	,	MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB			,					
first add VLF-800 low pass filters F1dB F3dB	ealed amps	1075	,	MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB Add these at the output of the 3 s	ealed amps	1075 1275		MHz MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB Add these at the output of the 3 s F3dB measured	ealed amps	1075 1275 700		MHz MHz MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB Add these at the output of the 3 s	ealed amps	1075 1275		MHz MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB Add these at the output of the 3 s F3dB measured F6dB measured F10dB measured F20dB measured	ealed amps	1075 1275 700 1000		MHz MHz MHz MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB Add these at the output of the 3 s F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured F30dB measured	ealed amps	1075 1275 700 1000 1100 1180 1240		MHz MHz MHz MHz MHz MHz MHz MHz MHz				
first add VLF-800 low pass filters F1dB F3dB F20dB Add these at the output of the 3 s F3dB measured F6dB measured F10dB measured F20dB measured	ealed amps	1075 1275 700 1000 1100 1180		MHz MHz MHz MHz MHz MHz		a little extra lo	ss d	lue to the additional filter in the path.

for 2Vpp ADC like on ADC16x25	50-8 card the full	sca	le gaussian CF	==6 input is rough	ly	-2	2	dBm
the final output amp should have	P1dBoutput at			,	ĺ	8	3	dBm
and must be powered off of the		_ ahle	which is ±12	VDC				
and must be powered on or the	D of 700 MI In an	abic	S WITHCIT IS + 12	v DC.	1	 	IA Ia	
would like to have the same F3d							tn	
NF isn't of much concern given t	hat this part will b	e th	ie 6th in the se	ries and after 80	or so	o dB gain.		
first pass with filter after the 3 se	aled amps and the	he e	extra amplifier	has too much crue	h			
out beyond 1 GHz.			, and damping		<u> </u>			
	f the - fire - h	A			- 1:-	ladi da la come de la constanti		from O
move the filter to just upstream of				y neip and maybe	SIIG	intly bumpler li	n Iov	v treq ?
try between amps 4 and 5: same	e as between amp	os 3	and 4.					
keep the VLF800 at the output of				amns 3 and 4)				
Reep the VEI 600 at the output of	Tine o sealed am	<u> </u>						
Selected Amp								
Cougar	AP1309C							
gain	12.5	:	dB out to 1 v (SHz; drops down	to 12	dB at 6 GHz		
•				Jiiz, arops down	U 12	ab at 6 0112.		
noise figure	2.5		dB					
noise factor	1.8							
Tequiv	227.5	5	degK					
frequency high	1.3	_	GHz					
frequency low	0.01		GHz					
P1dB input power at 10 MHz	8.25	<u> </u>	dBm		L	<u> </u>	L	
P1dB input power at 1300 MHz	9.43	3	dBm					
reverse isolation	19.5		dB					
							+	
12V typical current	0.1		amps					
12V maximum current	0.11	-	amps					
			-					
							1	
E4 dB ass				h 4: :			1.	+ 100 +- 150 MI
F1dB measured			300			ignoring 1dB (dip a	t 100 to 150 MHz
F3dB measured			700	MHz				
F6dB measured			1000					
F10dB measured			1100					
F20dB measured			1180	MHz				
F30dB measured			1700	MHz				
dBm/Hz measured at 500 MHz			-84.6			right hand out	nut	
abili/12 measured at 500 MHz								
			-84.1			left hand outp	ut	
estimated power in 100 MHz			-4.1					
total power			8.9	dBm		left hand outp	ut	
total porto.			0.0			rote riourus outp	T	
SMA Chunk Filter	model of PAP	ER'	s passband					
Measured total power			-0.33	dBm		left hand outp	ut	
			-81.8	dBm/Hz		i communication of the	1	
dBm/Uz massured at 152 MUz (midhand)			UDITI/TIZ				
dBm/Hz measured at 153 MHz (midband)		02.0					
	midband)							
dBm/Hz measured at 153 MHz (F1dB measured	midband)		107	201		MHz		lots of aliasing at Fsample of 200 MHz but this
F1dB measured	midband)		107					
F1dB measured F3dB measured	midband)		107 104	203.5		MHz		is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured	midband)		107 104 102.2	203.5 205.2		MHz MHz		
F1dB measured F3dB measured F6dB measured F10dB measured	midband)		107 104 102.2 101	203.5 205.2 207.5		MHz MHz MHz		is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured	midband)		107 104 102.2	203.5 205.2 207.5		MHz MHz		is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured	midband)		107 104 102.2 101 98	203.5 205.2 207.5 215		MHz MHz MHz MHz		is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured F10dB measured	midband)		107 104 102.2 101	203.5 205.2 207.5		MHz MHz MHz		is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured	midband)		107 104 102.2 101 98	203.5 205.2 207.5 215		MHz MHz MHz MHz		is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured	midband)		107 104 102.2 101 98	203.5 205.2 207.5 215		MHz MHz MHz MHz MHz		is the best simulation of the actual passband I could create from items in the lab
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured	midband)		107 104 102.2 101 98	203.5 205.2 207.5 215		MHz MHz MHz MHz MHz	put v	is the best simulation of the actual passband I could create from items in the lab
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements	midband)		107 104 102.2 101 98 86.3	203.5 205.2 207.5 215 237		MHz MHz MHz MHz MHz	put	is the best simulation of the actual passband
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power			107 104 102.2 101 98 86.3	203.5 205.2 207.5 215 237		MHz MHz MHz MHz MHz right hand out	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements			107 104 102.2 101 98 86.3	203.5 205.2 207.5 215 237		MHz MHz MHz MHz MHz	put v	is the best simulation of the actual passband I could create from items in the lab
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n			107 104 102.2 101 98 86.3	203.5 205.2 207.5 215 237		MHz MHz MHz MHz MHz right hand out	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power			107 104 102.2 101 98 86.3	203.5 205.2 207.5 215 237		MHz MHz MHz MHz MHz right hand out	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n			107 104 102.2 101 98 86.3 -0.56 -79.4	203.5 205.2 207.5 215 237 dBm dBm/Hz		MHz MHz MHz MHz MHz right hand out est of total MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1	203.5 205.2 207.5 215 237 dBm dBm/Hz		MHz MHz MHz MHz MHz right hand out est of total MHz MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95	203.5 205.2 207.5 215 237 dBm dBm/Hz		MHz MHz MHz MHz MHz right hand out est of total MHz MHz MHz MHz MHz MHz	putv	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1	203.5 205.2 207.5 215 237 dBm dBm/Hz		MHz MHz MHz MHz MHz right hand out est of total MHz MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F3dB measured F1dB measured F1dB measured			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8		MHz MHz MHz MHz MHz right hand out est of total MHz MHz MHz MHz MHz MHz MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (note) F1dB measured F3dB measured F1dB measured F6dB measured F10dB measured F10dB measured F20dB measured			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4		MHz MHz MHz MHz MHz right hand out est of total MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F3dB measured F1dB measured F1dB measured			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4		MHz MHz MHz MHz MHz right hand out est of total MHz MHz MHz MHz MHz MHz MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (note) F1dB measured F3dB measured F1dB measured F3dB measured F6dB measured F10dB measured F10dB measured F20dB measured			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4		MHz MHz MHz MHz MHz right hand out est of total MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (note) F1dB measured F3dB measured F1dB measured F6dB measured F10dB measured F10dB measured F20dB measured			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4		MHz MHz MHz MHz MHz right hand out est of total MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (note) F1dB measured F3dB measured F1dB measured F6dB measured F10dB measured F10dB measured F20dB measured			107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4		MHz MHz MHz MHz MHz right hand out est of total MHz	put	is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (note) F1dB measured F3dB measured F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F30dB measured	nidband)	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4		MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F10dB measured F20dB measured F30dB measured		DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133		MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F20dB measured F30dB measured F30dB measured	model for LEC	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133		MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20 a 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F10dB measured F20dB measured F30dB measured	model for LEC	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133		MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F20dB measured F30dB measured F30dB measured	model for LEC	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133		MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20 a 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured F3dB measured F3dB measured F1dB measured F3dB measured F3dB measured F10dB measured F10dB measured F10dB measured F20dB measured F30dB measured F30dB measured	model for LEC	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133 dBm dBm/Hz		MHz MHz MHz MHz MHz MHz right hand out est of total MHz MHz MHz MHz MHz MHz MHz Hz MHz MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20 a 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F30dB measured F10dB measured	model for LEC	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4 passband -1.42 -79.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133 dBm dBm/Hz 68.8		MHz MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20 a 6ft LMR-195 PVC
F1dB measured F3dB measured F6dB measured F10dB measured F20dB measured F30dB measured SLP90 measurements Measured total power dBm/Hz measured at 50 MHz (n F1dB measured F3dB measured F10dB measured F10dB measured F10dB measured F10dB measured F20dB measured F30dB measured F30dB measured F30dB measured F30dB measured F30dB measured F30dB measured	model for LEC	DA's	107 104 102.2 101 98 86.3 -0.56 -79.4 7.8 6.1 4.95 4.1 3.13 2.4 passband -1.42 -79.4	203.5 205.2 207.5 215 237 dBm dBm/Hz 91 98.8 103.5 107.8 117.4 133 dBm dBm/Hz 68.8 71.3		MHz MHz MHz MHz MHz MHz right hand out est of total MHz		is the best simulation of the actual passband I could create from items in the lab via 6ft LMR-195 PVC -0.20 a 6ft LMR-195 PVC
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