

# EME 2012 NF Measurements

17-18 August 2012

Churchill College, Cambridge

Ops: HB9BBD & G3XDY

Call	Band	Preamp detail	NF	Gain	Test Gear	Comments
GI1CET	144	WA2ODO	0.25	28.68	HP8970A/HP346A G4SWX	
GI1CET	144	WA2ODO + .25wl RG223	0.31	28.82	HP8970A/HP346A G4SWX	
GI1CET	144	WA2ODO + .125wl RG223	0.2	29.19	HP8970A/HP346A G4SWX	
GI1CET	144	WA2ODO + .375wl RG224	0.42	28.37	HP8970A/HP346A G4SWX	
G4YTL	144	Rfham G4YTL-2	0.15	23.07	HP8970A/HP346A G4DDK	
G4YTL	144	Unbranded G4YTL	0.16	25.72	HP8970A/HP346A G4DDK	
ON4KHG	144	ATF33143	3.22	19.5	HP8970A/HP346A G4DDK	Unstable
GM4JJJ	144	VE3KH FLC053	0.21	21.02	HP8970A/HP346A G4DDK	
SM5BSZ	144	ATF33143 neg impedance	0.25	33.4	HP8970A/HP346A G4SWX	
SM5BSZ	144	ATF33143 neg imp + .25wl	0.46	32.5	HP8970A/HP346A G4SWX	
SM5BSZ	144	ATF33143 neg impedance	0.02	33.33	HP8970A/HP346A G4DDK	
SM5BSZ	144	ATF33143 neg imp + .25wl	0.27	32.49	HP8970A/HP346A G4DDK	
SM5BSZ	144	ATF33143 neg imp + .125wl	0.09	33.3	HP8970A/HP346A G4DDK	
SM5BSZ	144	ATF33143 neg imp + .375wl	0.26	32.4	HP8970A/HP346A G4DDK	
SM5BSZ	144	MGF1425	0.13	30.61	HP8970A/HP346A G4DDK	
SM5BSZ	144	MGF1425+0.25WL RG213	0.28	30.48	HP8970A/HP346A G4DDK	
SM5BSZ	144	FHX05FA/LG	0.13	32.77	HP8970A/HP346A G4DDK	
SM5BSZ	144	FHX05FA/LG + 0.25wl RG223	0.28	32.59	HP8970A/HP346A G4DDK	
SM5BSZ	144	Wideband	0.52	23.69	HP8970A/HP346A G4DDK	
SM5BSZ	144	Wideband + 0.25WL RG223	0.57	23.77	HP8970A/HP346A G4DDK	
SM5BSZ	144	MGF1425 Old	0.43	30.4	HP8970A/HP346A G4DDK	
SM5BSZ	144	MGF1425 Old + 0.25WL RG225	0.51	30.3	HP8970A/HP346A G4DDK	
SM5BSZ	144	2 x ATF33143	0.2	28.03	HP8970A/HP346A G4DDK	
SM5BSZ	144	2 x ATF33143+0.25wl	0.29	28.16	HP8970A/HP346A G4DDK	
SM5BSZ	144	2 x ATF33143+0.125wl	0.14	28.87	HP8970A/HP346A G4DDK	
SM5BSZ	144	2 x ATF33143+0.375wl	0.39	27.71	HP8970A/HP346A G4DDK	
HB9DRI	144	MGF1801	0.22	17.99	HP8970A/HP346A G4DDK	
HB9DRI	144	MGF1801 with 0.25wl RG213 in front	0.33		HP8970A/HP346A G4DDK	
G3LTF	144	MGF1302	0.32	21.64	HP8970A/HP346A G4DDK	
SM5BSZ	144	Cable 0.25WL RG213	0.03	0.03	HP8970A/HP346A G4DDK	
SM5BSZ	144	Cable 0.25WL RG213	0.03	0.04	HP8970A/HP346A G4SWX	
SM5BSZ	144	ATF33143	0.07	27.54	HP8970A/HP346A G4DDK	

# EME 2012 NF Measurements

17-18 August 2012

Churchill College, Cambridge

Ops: HB9BBD & G3XDY

Call	Band	Preamp detail	NF	Gain	Test Gear	Comments
SM5BSZ	144	ATF33143+0.25WL RG223	0.25	27.16	HP8970A/HP346A G4DDK	
SM5BSZ	144	ATF33143+0.125WL RG223	0.14	27.4	HP8970A/HP346A G4DDK	
SM5BSZ	144	ATF33143+0.375WL RG224	0.25	27.17	HP8970A/HP346A G4DDK	
SM5BSZ	144	Neutralised MGF1801	0.12	27.06	HP8970A/HP346A G4DDK	
SM5BSZ	144	Neutralised MGF1801 + 0.25WL RG223	0.28	26.53	HP8970A/HP346A G4DDK	
SM5BSZ	144	Neutralised MGF1801 + 0.125WL RG223	0.2	26.83	HP8970A/HP346A G4DDK	
SM5BSZ	144	Neutralised MGF1801 + 0.375WL RG223	0.28	26.62	HP8970A/HP346A G4DDK	
G0MRF	144	Preamp and Bias Tee	1.62	11.52	HP8970A/HP346A G4DDK	
SM5BSZ	144	3dB pad + 0.25wl RG213	3.22	-3.11	HP8970A/HP346A G4DDK	
SM5BSZ	144	LC circuit	-0.04	0.06	HP8970A/HP346A G4DDK	
CT1HZE	432	WA2ODO	0.21	20.23	HP8970A/HP346A G4SWX	
GM4JJJ	432	MGF1302	0.48	13.99	HP8970A/HP346A G4SWX	
DL9KR	432	Short Box #1	0.56	40.3	Agilent N8975A/N4000A	
DL9KR	432	Long Box with 7/16 F-F and M-NF adapters	0.43	52.2	Agilent N8975A/N4000A	
DL9KR	432	Long Box with 7/16 to N adapter	0.41	52.2	Agilent N8975A/N4000A	
G4DZU	432	G4DDK	0.56	28.1	Agilent N8975A/N4000A	
DJ3FI	432	Cavity preamp	0.66	17.1	Agilent N8975A/N4000A	0.33 on 8970A/346A
G4RGK	432	G4DDK	0.65	28.2	Agilent N8975A/N4000A	
G4RGK	432	Cavity preamp	0.72	18.1	Agilent N8975A/N4000A	
SM3JQU	1.3		0.87	27.2	Agilent N8975A/N4000A	
DJ8FR	1.3	DDK#1	0.23	36.9	Agilent N8975A/N4000A	
DJ8FR	1.3	DDK#2	0.33	38.7	Agilent N8975A/N4000A	
WA8RJF	1.3	AD6IW LS01	0.46	21.9	Agilent N8975A/N4000A	
WA8RJF	1.3	AD6IW VU03	0.68	14.1	Agilent N8975A/N4000A	
WA8RJF	1.3	AD6IW	0.37	43.5	Agilent N8975A/N4000A	
WB2BYP	1.3	AGO-2-23 ATF36077	0.38	26.9	HP8970A/HP346A	
CT1HZE	1.3	WA2ODO	0.37	19	Agilent N8975A/N4000A	
G3LTF	1.3	G4DDK with UT141/adapter	0.228	40.1	Agilent N8975A/N4000A	
JA4BLC	1.3	G4DDK	0.28	33.7	Agilent N8975A/N4000A	
F6AJW	1.3	G4DDK	0.56	36.4	Agilent N8975A/N4000A	
HB9BBD	1.3	2-105	0.14	40.6	Agilent N8975A/N4000A	
HB9BBD	1.3	2-071 for KL7M inc adapter	0.19	42.7	Agilent N8975A/N4000A	

## EME 2012 NF Measurements

17-18 August 2012

Churchill College, Cambridge

Ops: HB9BBD & G3XDY

Call	Band	Preamp detail	NF	Gain	Test Gear	Comments
HB9BBD	1.3	2-035	0.13	42.2	Agilent N8975A/N4000A	
G4CCH	1.3	G4DDK #1 Inc adapter Ref	0.33	39.2	Agilent N8975A/N4000A	
G4CCH	1.3	G4DDK #2 Inc adapter	0.26	39.3	Agilent N8975A/N4000A	
G4CCH	1.3	HB9BBD	0.18	40.4	Agilent N8975A/N4000A	After tuning
DL7UDA	1.3	G4DDK	0.28	35.8	Agilent N8975A/N4000A	
G4DZU	1.3	G4DDK Mk 1	0.32	36.6	Agilent N8975A/N4000A	
G4DZU	1.3	G4DDK Mk 2	0.26	36.4	Agilent N8975A/N4000A	
DJ8FR	1.3	G4DDK SMA Input	0.33	38.6	Agilent N8975A/N4000A	
DJ8FR	1.3	G4DDK N input	0.23	36.9	Agilent N8975A/N4000A	
DJ3QD	1.3	G4DDK UT141 Input/adapter	1.1	30	Agilent N8975A/N4000A	
G4DZU	1.3	WD5AGO	0.4	31.8	Agilent N8975A/N4000A	
G4DZU	1.3	DJ9BV	0.48	15.8	Agilent N8975A/N4000A	
WA8RJF	1.4	AD6IW Optimised for 1.3GHz	0.38	17	Agilent N8975A/N4000A	
HB9BBD	1.4	2-209	0.11	41.1	Agilent N8975A/N4000A	
SM3JQU	2.3	Preamp+MMIC	0.37	36	Agilent N8975A/N4000A	
G3LTF	2.3	G4DDK design UT141 input/adapter	0.31	25.4	Agilent N8975A/N4000A	
JA4BLC	2.3	G4DDK #2	0.27	27	Agilent N8975A/N4000A	
JA4BLC	2.3	G4DDK #3	0.27	28	Agilent N8975A/N4000A	
F6AJW	2.3	G4DDK (same as 23cm)	0.41	25.6	Agilent N8975A/N4000A	
G4CCH	2.3	G4DDK	0.31	28.1	Agilent N8975A/N4000A	
WW2R	2.3	G4DDK	0.35	28.2	HP8970A/HP346A	
G4DZU	2.3	G4DDK Mk 1	0.43	25.4	Agilent N8975A/N4000A	
WA8RJF	2.3	AD6IW LS01	0.67	15.5	Agilent N8975A/N4000A	
WA8RJF	2.3	AD6IW VU03	1	8.9	Agilent N8975A/N4000A	
G3LTF	3.4	W5LUA ATF36077	0.74	13.3	Agilent N8975A/N4000A	
G4CCH	3.4	G4DDK	0.58	25.5	Agilent N8975A/N4000A	
WW2R	3.4	G4DDK	0.59	23.3	Agilent N8975A/N4000A	
VK4CDI	3.4	G4DDK VLNA 1712	0.49	27.48	HP8970A/HP346A	
G3WDG	3.4	G3WDG	0.44	17.42	HP8970A/HP346A	
G4DDK	3.4	G4DDK VLNA 1732	0.44	26.81	HP8970A/HP346A	
G3LTF	5.7	W5LUA ATF36077	0.75	9.5	Agilent N8975A/N4000A	
PA7JB	5.7	NE329 W5LUA/DEMI	0.87	12.6	Agilent N8975A/N4000A	

## EME 2012 NF Measurements

17-18 August 2012

Churchill College, Cambridge

Ops: HB9BBD & G3XDY

Call	Band	Preamp detail	NF	Gain	Test Gear	Comments
WW2R	5.7	DB6NT 571A	0.74	11.5	Agilent N8975A/N4000A	
WW2R	5.7	DEMI	0.88	8.8	Agilent N8975A/N4000A	
SM3JQU	10	DB6NT	0.82	20.4	Agilent N8975A/N4000A	
SM3JQU	10	LNB	3.3	6.9	Agilent N8975A/N4000A	
WA8RJF	10	AD6IW 3511-3	1.02	9.1	Agilent N8975A/N4000A	
WA8RJF	10	AD6IW 3511-2	1.9	2.7	Agilent N8975A/N4000A	Unstable
OZ1FF	10	DB6NT single stage	1.1	8.7	Agilent N8975A/N4000A	
OZ1FF	10	DB6NT 2 stage	0.82	22.6	Agilent N8975A/N4000A	
F6AJW	10	DB6NT? WR75 input	0.94	20.6	Agilent N8975A/N4000A	Measured with WR90 source WG
HB9BBD	10	#1	1.7	7	Agilent N8975A/N4000A	
PA7JB	10	Modified 3 stage LNB WG Input	1.07	30.5	Agilent N8975A/N4000A	
K2UYH	10	DB6NT 2 stage	0.94	21.1	Agilent N8975A/N4000A	
DK6JL	10	10GHz Amplifier #23	1.2	10.75	Agilent N8975A/N4000A	
DK6JL	10	10GHz Amplifier #24	1.01	10.7	Agilent N8975A/N4000A	
OZ1FF	24	DB6NT WG input 243 RX2	NA	25.5	Agilent N8975A/N4000A	
DL7YC	24	DB6NT WG input 243 RX2	NA	26	Agilent N8975A/N4000A	
PA7JB	24	Homebrew	NA	18.9	Agilent N8975A/N4000A	
G4SWX	100-2800	HP346A	2800-18000		30.6deg C	
G4BAO	100-2800	MSC Noise head and attenr	2800-18000		29.4deg C/30.0	
G4BAO	100-2800	HP345B + 10dB pad	2800-18000		28.3deg C/30.3	
G4DZU	100-2800	AILTECH + pad	2800-18000		28.6deg C/29.8	
4X1DG	100-2800	Homebrew	NA		29.3deg C	
F2TU	100-2800	AILTECH	2800-18000		29.3deg C/29.8	
F2TU	100-2800	AILTECH + PAD	2800-18000		28.9deg C/30.1	
DG0AG	100-2800	Homebrew + pad	2800-18000		30.1deg C	High ENR, run with extra 10dB pad
DJ8FR	100-2800	Agilent 346A	2800-18000		30.1deg C/30.1	
DJ8FR	100-2800	Eaton	2800-18000		30.0deg C	

Approximately 88 preamps were tested and 10 noise heads calibrated.

SM5BSZ preamps were tested with additional cables on the input (cable loss calibrated out) to demonstrate the effects of source mismatch

Noise figures at 24GHz were not measured as the Agilent N4000A noise source is only calibrated to 18GHz.