SBMS EIRP-MDS MW Tune Up Sat. 30 JULY 2016 Sheet 1

24 GHz Range = 220 Ft. System Losses = 21.5 dB WG Flange = 5 dBi

FSPL = 95.0 dB EIRP Amp Gain = 15.4 dB MDS Attenuator 10 dB

	----------	--------	---------- EIRP	TEST	--------	----------	--------		------- MDS TEST -------		
Callsign	Reflector Size (inches)	Ant. Effic. (%)	Calc. Ant. Gain (dBi)	Radio Output (dBm)	Calc. EIRP (dBm)	EIRP Reading (dBm)	Meas. EIRP (dBm)	Meas. vs. Calc. (dB)	Conditions	Sig. Gen. Out (dBm)	MDS Atten. (dB)	MDS SCORE
(DATA)	(DATA)	(DATA)		(DATA)		(DATA)	(RESULT)	(Delta)		(DATA)	(DATA)	(RESULT)
W6QIW	24.0	0.55	41	30.0	71	-27.7	68	-2.8	PRIME FOCUS	-73	10	-99
K6JEY	12.0	0.55	35	27.0	62	-80.0	16	-46.1	PRIME FOCUS 1.8 dB NF - NO TX	-73	10	-99
K6JEY	12.0	0.55	35	27.0	62	-80.0	16	-46.1	PRIME FOCUS - NO TX	-62	10	-88

FSPL = Free Space Path Loss

EIRP Readings taken /w/ power meter or Spectrum Analyzer in peak mode

Meas. EIRP = Reading + Sys Loss + FS Path Loss - Amp Gain - WG Flange Gain

Ant Gain Calc = 10 x LOG (((4 x Pi x (Pi x R Squared)) x Efficiency %) / LAMBDA Squared)

MDS Signals Generated @ 432 MHz with VHF / UHF Signal Generator

MDS Score = Sig. Gen. Output - Atten. - Sys. Loss + WG Gain

System Losses = Test Fixture Conversion / Insertion Loss + 300 ft. Cable Loss

F.S. Path Loss = 37.5+20*LOG(Dist in feet)+20*LOG(Freq MHz) - same as prior years = 95.0 dB @ 24.192 GHz

300 ft. Cable Loss = 13.0 dB @ 432 MHz

Open WG Flange Gain assumed to be 5 dB

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Callsign	Reflector Size (inches)	Ant. Effic. (%)	Calc. Ant. Gain (dBi)	Radio Output (dBm)	Calc. EIRP (dBm)	EIRP Reading (dBm)	Meas. EIRP (dBm)	Meas. vs. Calc. (dB)	Conditions	Sig. Gen. Out (dBm)	MDS Atten. (dB)	MDS SCORE
(DATA)	(DATA)	(DATA)		(DATA)		(DATA)	(RESULT)	(Delta)		(DATA)	(DATA)	(RESULT)
K_6___	10.0	0.55	34	19.5	53	-43.0	53	0.0	OMNI	0	10	-26
K_6___	12.0	0.55	35	19.5	55	-41.4	55	0.0	HORN	-10	10	-36
K_6___	12.0	0.55	35	19.5	55	-41.4	55	0.0	OMNI	-15	10	-41
K_6___	18.0	0.55	39	19.5	58	-37.9	58	0.0	HORN	-18	10	-44
K_6___	18.0	0.55	39	19.5	58	-37.9	58	0.0	12" PRIME	-28	10	-54
K_6___	20.0	0.64	40	23.0	63	-32.8	63	0.0	18" OFFSET	-33	10	-59
K_6___	20.0	0.64	40	23.0	63	-32.8	63	0.0	20" OFFSET	-33	10	-59
K_6___	24.0	0.55	41	23.0	64	-31.9	64	0.0	24" PRIME	-35	10	-61
K_6___	24.0	0.55	41	23.0	64	-31.9	64	0.0	30" PRIME	-40	10	-66
K_6___	24.0	0.64	42	23.0	65	-31.2	65	0.0	30" OFFSET	-43	10	-69
K_6___	24.0	0.55	41	23.0	64	-31.9	64	0.0	33" PRIME	-45	10	-71
K_6___	24.0	0.64	42	30.0	72	-24.2	72	0.0	33" OFFSET	-50	10	-76
K_6___	30.0	0.64	44	30.0	74	-22.3	74	0.0	39"	-55	10	-81
K_6___	30.0	0.55	43	30.0	73	-22.9	73	0.0	48" Prime	-60	10	-86
K_6___	30.0	0.64	44	30.0	74	-22.3	74	0.0	48" Offset	-64	10	-90
K_6___	30.0	0.55	43	30.0	73	-22.9	73	0.0	72"	-63	10	-89
K_6___	32.8	0.55	44	30.0	74	-22.2	74	0.0	6F-8W	-63	10	-89
K_6___	32.8	0.64	45	33.0	78	-18.5	78	0.0	33" OFFSET	-50	10	-76
K_6___	48.0	0.64	48	33.0	81	-15.2	81	0.0	39"	-55	10	-81
K_6___	48.0	0.55	47	33.0	80	-15.8	80	0.0	48" Prime	-60	10	-86
K_6___	48.0	0.64	48	33.0	81	-15.2	81	0.0	48" Offset	-64	10	-90
K_6___	48.0	0.55	47	33.0	80	-15.8	80	0.0	72"	-63	10	-89

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