State	Date	Site	Satellite	TP	IRD-avg	IRD-stdev	IRD -max	IRD -min	CNR-avg	CNR -stdev	CNR -max	CNR -min	Count
OFF	17-Jul	1	ES_110	18	89.02	0.80	92	87	10.39	0.07	10.60	10.20	125
ON	17-Jul	1	ES_110	18	89.19	0.86	92	86	10.43	0.09	10.80	10.10	125
OFF	17-Jul	1	ES_110	19	98.39	0.69	100	96	11.65	0.07	11.80	11.50	117
ON	17-Jul	1	ES_110	19	98.23	0.74	99	96	11.63	0.07	11.80	11.40	117
OFF	17-Jul	1	ES_119	18	88.44	0.85	90	86	10.35	0.11	10.70	10.00	103
ON	17-Jul	1	ES_119	18	87.69	1.29	92	84	10.26	0.12	10.50	10.00	103
OFF	17-Jul	1	ES_119	19	96.50	0.91	99	94	11.45	0.09	11.70	11.20	111
ON	17-Jul	1	ES_119	19	96.29	0.94	99	94	11.43	0.09	11.60	11.10	111
OFF	16-Jul	2	DTV_101	18	92.23	1.11	95	90	10.79	0.11	11.10	10.40	187
ON	16-Jul	2	DTV_101	18	76.43	1.46	82	73	9.67	0.08	9.90	9.40	187
OFF	16-Jul	2	DTV_101	19	95.71	0.67	98	94	11.25	0.09	11.50	11.00	266
ON	16-Jul	2	DTV_101	19	82.21	2.17	86	74	10.11	0.14	10.50	9.80	266
OFF	16-Jul	2a	DTV_101	18	95.94	0.44	97	95	11.16	0.09	11.40	11.00	86
ON	16-Jul	2a	DTV_101	18	97.12	1.00	99	95	11.29	0.10	11.50	11.00	86
OFF	16-Jul	2a	DTV_101	19	97.04	0.60	98	96	11.40	0.07	11.70	11.30	148
ON	16-Jul	2a	DTV_101	19	92.20	1.72	95	88	10.87	0.12	11.10	10.60	148
OFF	13-Jul	3	DTV_101	18	94.35	1.11	96	92	10.96	0.08	11.10	10.80	116
ON	13-Jul	3	DTV_101	18	93.30	1.36	96	91	10.87	0.09	11.00	10.70	116
OFF	13-Jul	3	DTV_101	19	94.65	0.59	96	93	11.08	0.07	11.30	10.90	184
ON	13-Jul	3	DTV_101	19	89.90	1.31	94	86	10.66	0.12	11.00	10.30	184
OFF	18-Jul	4	ES_110	18	95.72	0.71	98	94	11.12	0.10	11.40	10.90	81
ON	18-Jul	4	ES_110	18	95.64	0.69	97	92	11.11	0.09	11.40	10.90	81
OFF	18-Jul	4	ES_110	19	74.93	1.66	86	72	9.39	0.13	10.20	9.20	110
ON	18-Jul	4	ES_110	19	73.09	1.14	75	70	9.27	0.07	9.60	9.10	110
OFF	18-Jul	4	ES_119	18	86.94	1.27	89	83	10.20	0.11	10.40	9.90	128
ON	18-Jul	4	ES_119	18	82.41	1.42	87	79	9.86	0.14	10.30	9.60	128
OFF	18-Jul	4	ES_119	19	96.46	0.77	98	95	11.45	0.08	11.60	11.30	72
ON	18-Jul	4	ES_119	19	94.15	0.52	95	93	11.18	0.08	11.40	11.00	72
OFF	8-Jul	5	DTV_101	18	95.55	0.68	96	92	11.06	0.09	11.30	10.80	88
ON	8-Jul	5	DTV_101	18	95.47	0.95	98	92	11.06	0.11	11.30	10.80	88
OFF	12-Jul	6	DTV_101	18	95.59	0.75	98	92	11.08	0.10	11.30	10.90	76
ON	12-Jul	6	DTV_101	18	94.49	1.05	96	92	10.97	0.14	11.70	10.70	76
OFF	12-Jul	6_a	DTV_101	18	95.60	0.55	96	95	11.12	0.08	11.20	11.10	5
ON	12-Jul	6_a	DTV_101	18	94.20	1.30	95	92	11.00	0.12	11.00	10.90	5

Table 4 SAT-9520 Statistics

OFF	10-Jul	7	DTV_101	18	95.34	0.69	96	92	11.05	0.09	11.30	10.90	135
ON	10-Jul	7	DTV_101	18	95.24	0.93	97	91	11.04	0.08	11.20	10.90	135
OFF	10-Jul	7	DTV_101	19	93.19	0.94	94	90	10.93	0.08	11.10	10.70	93
ON	10-Jul	7	DTV_101	19	92.57	1.27	95	90	10.89	0.10	11.10	10.70	93
OFF	9-Jul	8	DTV_101	18	92.75	1.35	95	90	10.84	0.10	11.20	10.60	124
ON	9-Jul	8	DTV_101	18	92.20	1.51	95	89	10.77	0.14	11.10	10.30	124
OFF	9-Jul	8	DTV_101	19	90.77	1.30	93	88	10.76	0.09	11.00	10.50	77
ON	9-Jul	8	DTV_101	19	91.70	1.34	94	90	10.85	0.08	11.00	10.70	77
OFF	8-Jul	9	DTV_101	18	84.32	1.62	89	82	10.19	0.13	10.50	9.80	116
ON	8-Jul	9	DTV_101	18	84.71	1.62	89	80	10.20	0.11	10.60	10.00	116
OFF	8-Jul	9	DTV_101	19	91.00	1.22	93	90	10.74	0.05	10.80	10.70	5
ON	8-Jul	9	DTV_101	19	90.60	0.55	91	90	10.74	0.05	10.80	10.70	5
OFF	20-Jul	10	ES_119	18	82.99	1.03	86	81	9.88	0.09	10.10	9.70	74
ON	20-Jul	10	ES_119	18	82.34	0.82	84	81	9.86	0.09	10.00	9.70	74
OFF	20-Jul	11	ES_119	18	80.76	1.56	84	78	9.71	0.12	10.00	9.50	85
ON	20-Jul	11	ES_119	18	81.74	1.58	86	78	9.80	0.14	10.20	9.50	85
OFF	20-Jul	11	ES_119	19	93.78	0.45	94	92	11.09	0.07	11.30	10.90	77
ON	20-Jul	11	ES_119	19	92.90	0.80	94	91	11.01	0.08	11.20	10.80	77
OFF	19-Jul	12	ES_110	19	91.83	0.84	94	90	10.88	0.08	11.00	10.70	75
ON	19-Jul	12	ES_110	19	90.81	0.75	92	90	10.77	0.07	10.90	10.60	75

Table 4 SAT-9520 Statistics

					8591C SA			
State	***Date***	***Site***	***Satellite***	***Tp***	***CNR_L***	***CNR_R***	***STD_L***	***STD_R***
OFF	17-Jul	1	ES_110	18	9.47	10.40	2.95E-01	3.64E-01
ON	17-Jul	1	ES_110	18	9.45	10.30	3.34E-01	3.97E-01
OFF	17-Jul	1	ES_110	19	12.10	10.60	2.53E-01	2.57E-01
ON	17-Jul	1	ES_110	19	12.10	10.60	2.66E-01	2.64E-01
OFF	17-Jul	1	ES_119	18	10.30	10.60	3.03E-01	3.57E-01
ON	17-Jul	1	ES_119	18	10.30	10.60	2.75E-01	3.51E-01
OFF	17-Jul	1	ES_119	19	12.00	10.80	2.79E-01	2.97E-01
ON	17-Jul	1	ES_119	19	11.80	10.70	2.64E-01	2.89E-01
OFF	16-Jul	2	DTV_101	18	8.32	8.73	2.09E-01	2.16E-01
ON	16-Jul	2	DTV_101	18	8.39	7.24	2.06E-01	2.68E-01
OFF	16-Jul	2	DTV_101	19	9.88	10.00	2.38E-01	2.37E-01
ON	16-Jul	2	DTV_101	19	9.58	10.00	2.48E-01	2.50E-01
OFF	16-Jul	2a	DTV_101	18	9.67	10.20	2.15E-01	2.40E-01
ON	16-Jul	2a	DTV_101	18	10.70	11.20	2.18E-01	2.37E-01
OFF	16-Jul	2a	DTV_101	19	10.30	10.30	2.26E-01	2.38E-01
ON	16-Jul	2a	DTV_101	19	9.97	10.30	2.39E-01	2.39E-01
OFF	13-Jul	3	DTV_101	18	9.21	9.53	1.73E-01	1.73E-01
ON	13-Jul	3	DTV_101	18	9.19	9.43	1.71E-01	1.66E-01
OFF	13-Jul	3	DTV_101	19	9.41	9.69	1.69E-01	1.76E-01
ON	13-Jul	3	DTV_101	19	9.03	9.75	1.81E-01	2.08E-01
OFF	18-Jul	4	ES_110	18	11.07	11.95	2.67E-01	2.98E-01
ON	18-Jul	4	ES_110	18	11.03	11.89	2.49E-01	2.75E-01
OFF	18-Jul	4	ES_110	19	7.21	7.35	3.25E-01	2.80E-01
ON	18-Jul	4	ES_110	19	7.11	7.33	3.67E-01	2.71E-01
OFF	18-Jul	4	ES_119	18	10.00	10.60	3.05E-01	3.15E-01
ON	18-Jul	4	ES_119	18	10.11	10.48	2.77E-01	2.89E-01
OFF	18-Jul	4	ES_119	19	11.40	10.40	2.58E-01	2.48E-01
ON	18-Jul	4	ES_119	19	11.10	10.40	2.54E-01	2.50E-01
OFF	8-Jul	5	DTV_101	18	10.20	10.40	2.62E-01	2.85E-01
ON	8-Jul	5	DTV_101	18	10.20	10.20	2.64E-01	2.67E-01
OFF	12-Jul	6	DTV_101	18	10.00	10.30	1.77E-01	1.83E-01
ON	12-Jul	6	DTV_101	18	10.10	10.40	1.80E-01	1.79E-01
OFF	12-Jul	6a	DTV_101	18	10.00	10.40	1.87E-01	1.76E-01
ON	12-Jul	6a	DTV_101	18	10.00	10.30	1.71E-01	1.74E-01

Table 5 8591C SA statistics

OFF	10-Jul	7	DTV_101	18	10.10	10.50	2.63E-01	2.71E-01
ON	10-Jul	7	DTV_101	18	9.98	10.30	2.55E-01	2.74E-01
OFF	10-Jul	7	DTV_101	19	10.60	10.40	2.59E-01	2.59E-01
ON	10-Jul	7	DTV_101	19	10.60	10.30	2.48E-01	2.65E-01
OFF	9-Jul	8	DTV_101	18	9.55	9.91	2.48E-01	2.67E-01
ON	9-Jul	8	DTV_101	18	9.48	9.76	2.45E-01	2.46E-01
OFF	9-Jul	8	DTV_101	19	10.20	10.00	2.56E-01	2.58E-01
ON	9-Jul	8	DTV_101	19	10.40	10.10	2.53E-01	2.59E-01
OFF	8-Jul	9	DTV_101	18	8.65	8.93	2.51E-01	2.55E-01
ON	8-Jul	9	DTV_101	18	8.63	8.73	2.56E-01	2.53E-01
OFF	8-Jul	9	DTV_101	19	10.50	10.20	2.49E-01	2.73E-01
ON	8-Jul	9	DTV_101	19	10.40	10.20	2.58E-01	2.76E-01
OFF	20-Jul	10	ES_119	18	9.43	10.50	2.91E-01	3.48E-01
ON	20-Jul	10	ES_119	18	9.38	10.40	2.83E-01	3.43E-01
OFF	20-Jul	11	ES_119	18	9.48	10.00	2.58E-01	3.59E-01
ON	20-Jul	11	ES_119	18	9.50	9.97	2.50E-01	3.60E-01
OFF	20-Jul	11	ES_119	19	11.30	10.30	2.35E-01	2.15E-01
ON	20-Jul	11	ES_119	19	11.30	10.20	2.28E-01	2.23E-01
OFF	19-Jul	12	ES_110	19	9.38	9.95	3.44E-01	2.93E-01
ON	19-Jul	12	ES_110	19	9.14	9.71	3.13E-01	2.69E-01

Table 5 8591C SA statistics

Site	Long	Lat	Height	Distance to MDS Tx	Total Power dBm	Left(C/N) (dB)	Right(C/N) (dB)
1	80° 53 '57.78"	26° 42' 37.47"	2.68m	77.09m	-50	8.41	8.23
2	80° 53' 56.14"	26° 42' 35.64"	12.4m	108.3m	-33.2	25.9	25.5
2a	80° 53' 56.14"	26° 42' 35.64"	2.68m	108.3m	41.0	17.5	17.3
3	80° 53' 38.58"	26° 42' 34.63"	8.53m	0.5918km	-39.7	18.3	18.1
4	80° 53' 38.7"	26° 42' 46.22"	6.95m	0.6981km	-43.9	13.7	13.5
5	80° 53' 09.88"	26° 42' 38.98"	1.77m	1.39km	-46.1	11.5	11.4
6	80° 53' 09.81"	26° 42' 24.12"	2.44m	1.427km	-48.4	9.28	9.1
6a	80° 53 '09.81"	26° 42' 24.12"	8.78m	1.427km	-46.4	11.3	11.1
7	80° 52' 39.64"	26° 41' 33.93"	1.77m	2.914km	-51.1	6.2	6.01
8	80° 52' 11.06"	26° 42' 27.25"	1.77m	3.018km	-49.5	8.28	8.09
9	80° 52' 11.02"	26° 42' 47.55"	1.77m	3.035km	-50.5	6.94	6.76
10	80° 50' 43.62"	26° 42' 41.94"	6.95m	5.43km	(See note[3])	(See note[3])	12.5 (see note[4])
11	80° 51' 12"	26° 39' 37.08"	6.95m	7.2km	(See note[3])	(See note[3])	(See note[5])
12	80° 44' 54.56"	26° 38' 48.26"	6.95m	16.6km	(See note[3])	(See note[3])	15 (see note[6])

Table 6 MDS TX statistics

[3] Calibration test set was not used for these locations

[4] Using MDS flat panel antenna

[5] Unable to receive signal using MDS flat panel antenna

[6] Using MDS parabolic antenna

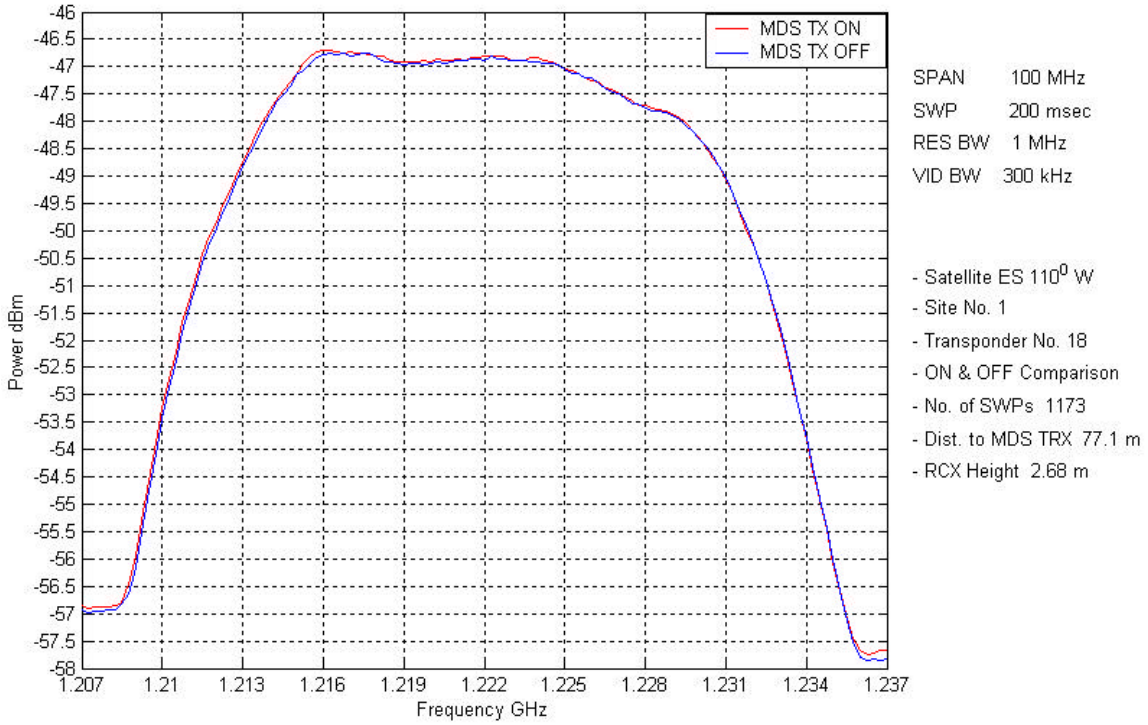

Figure 6 Site 1 ES110 TP18 ON & OFF 30 MHz Comparison plot

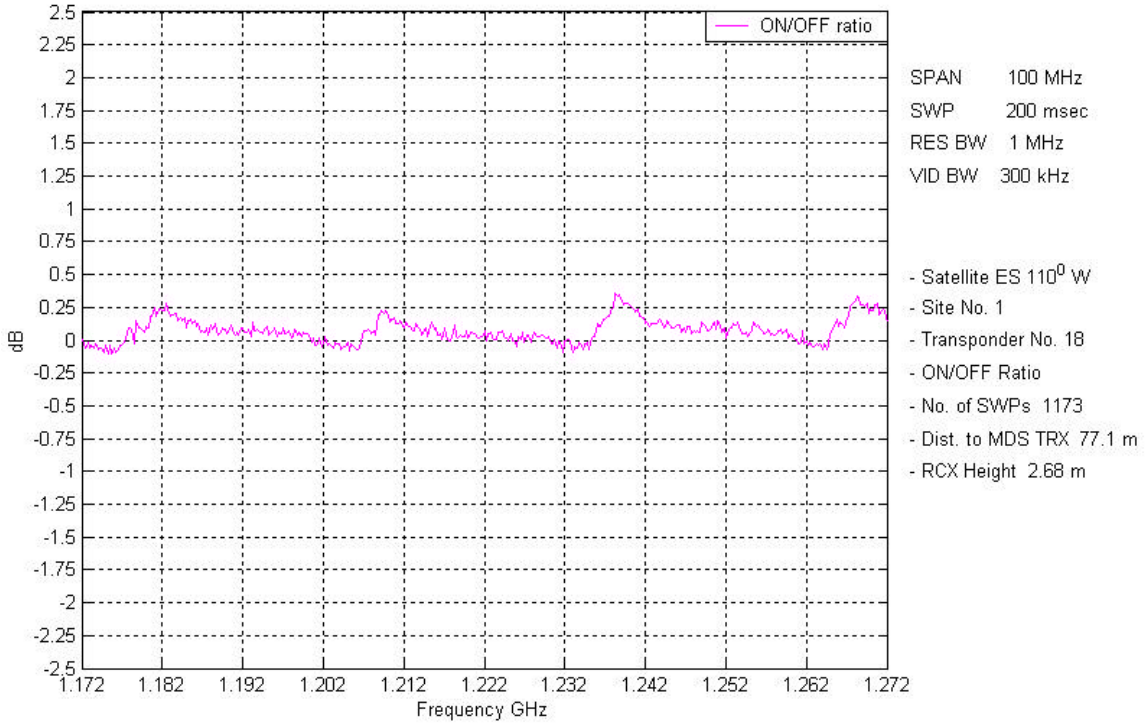

Figure 7 Site 1 ES110 TP18 ON / OFF 30 MHz Ratio plot

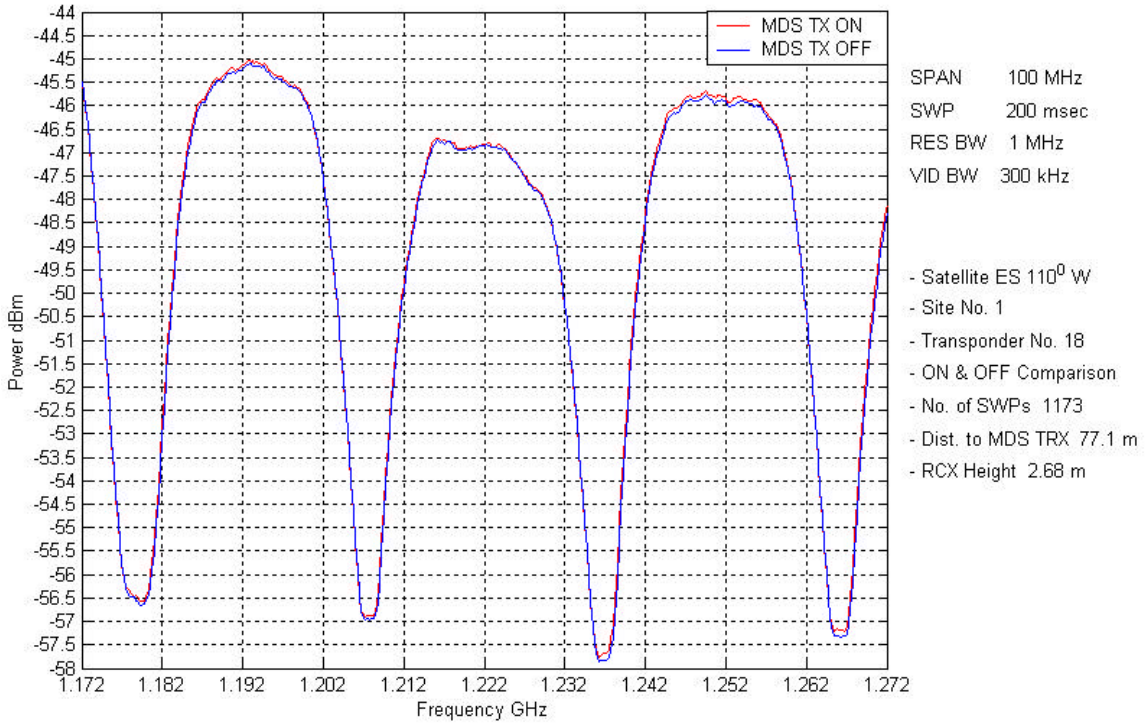

Figure 8 Site 1 ES110 LC ON & OFF Comparison plot

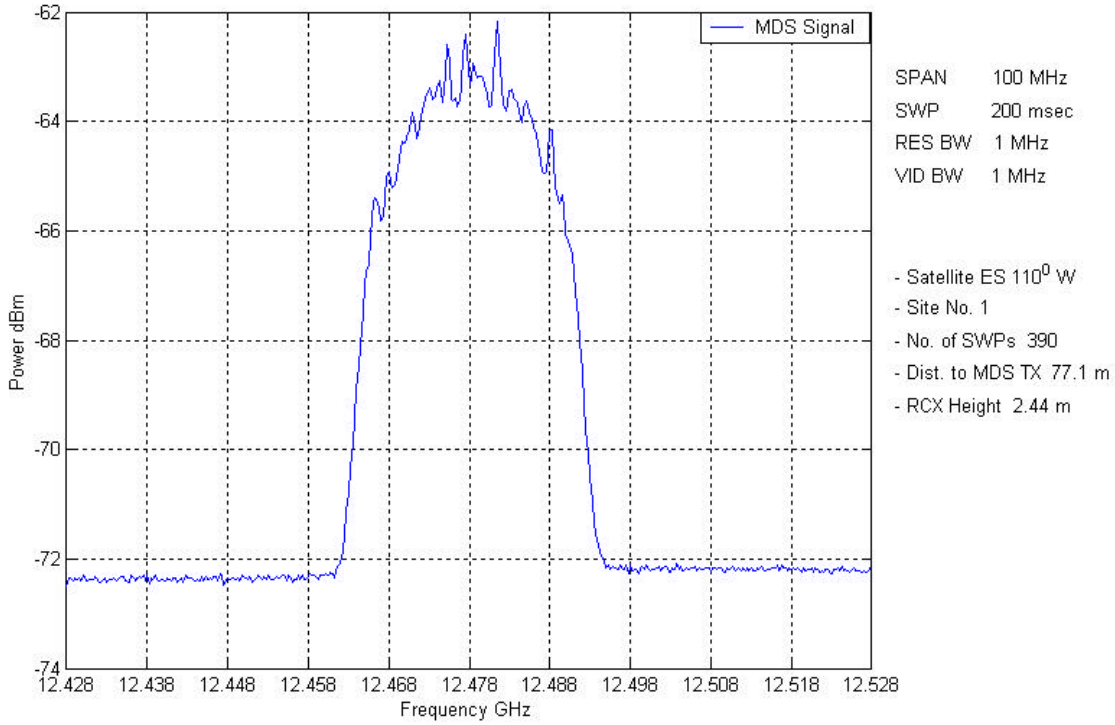

Figure 9 Site 1 MDS HH Signal

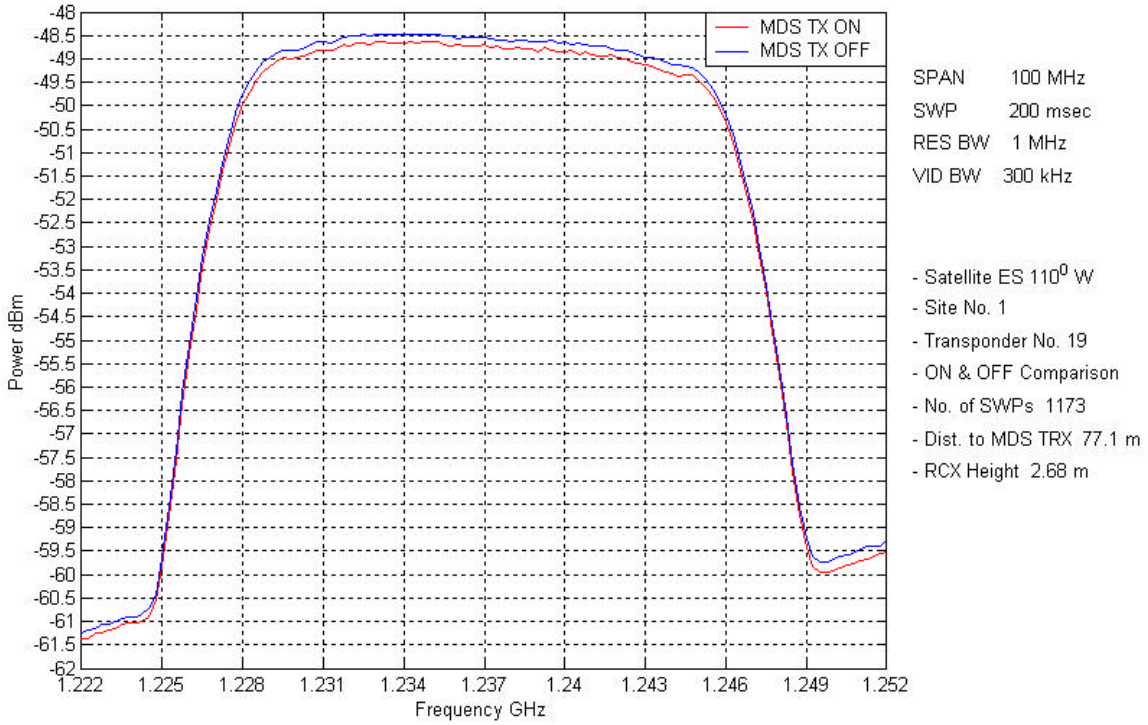

Figure 10 Site 1 ES110 TP19 ON & OFF 30 MHz Comparison plot

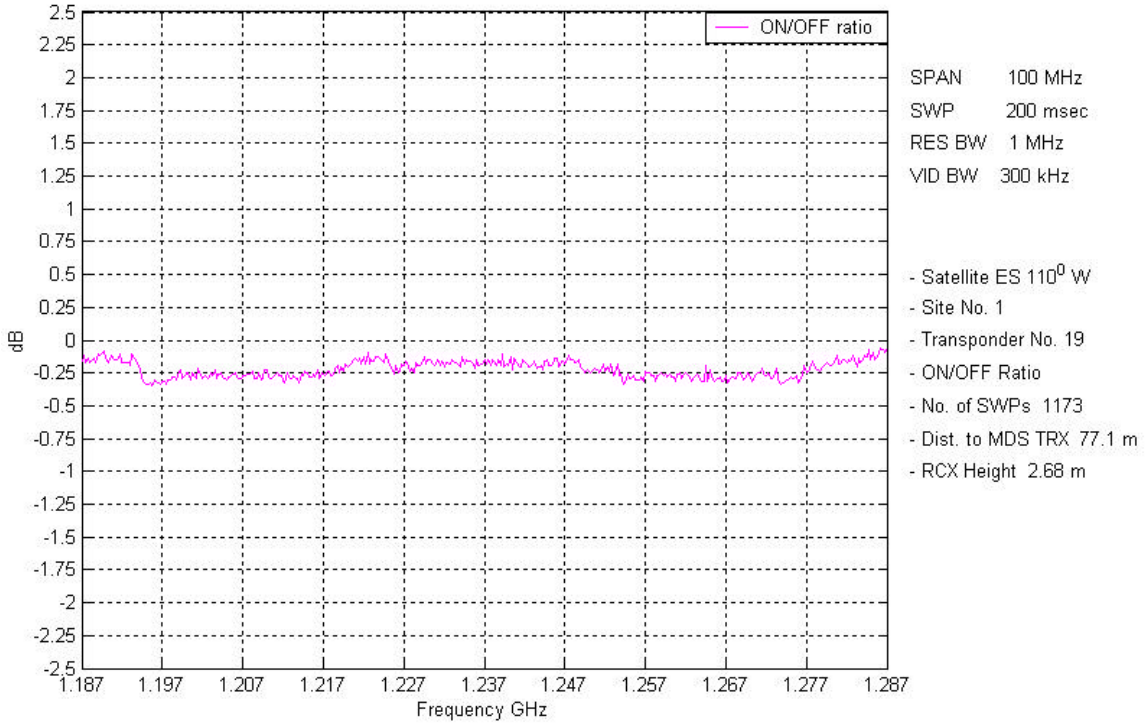

Figure 11 Site 1 ES110 TP19 ON / OFF 30 MHz Comparison plot

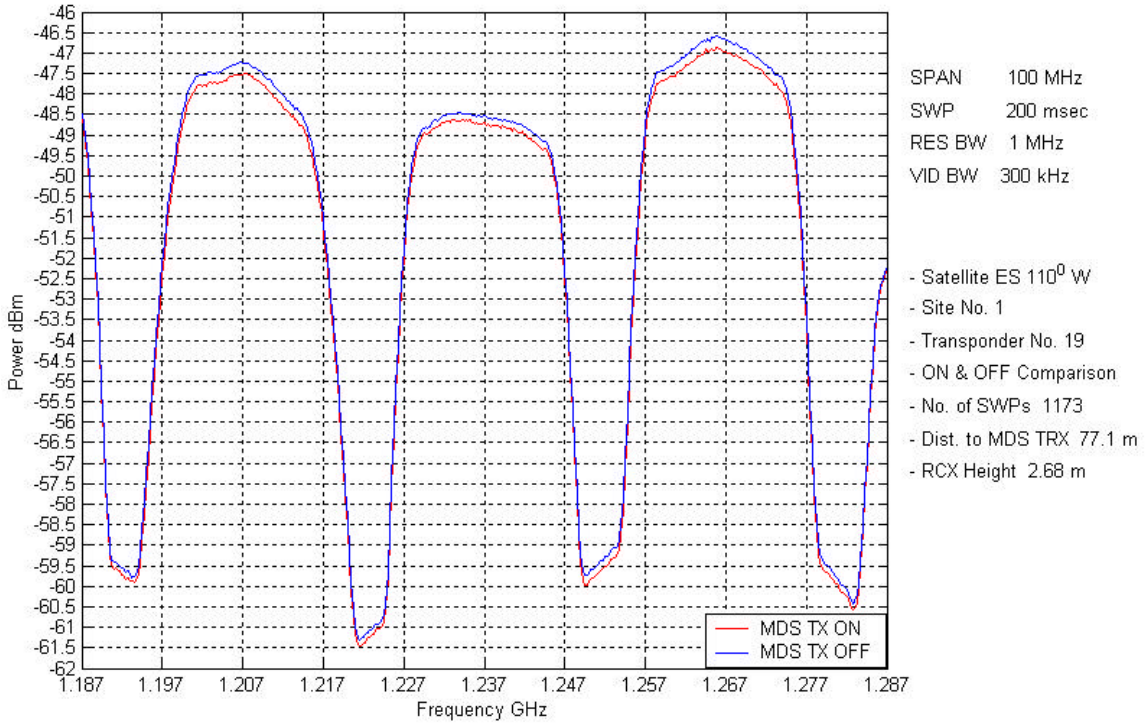

Figure 12 Site 1 ES110 RC ON & OFF Comparison plot

Figure 13 Site 1 Configuration

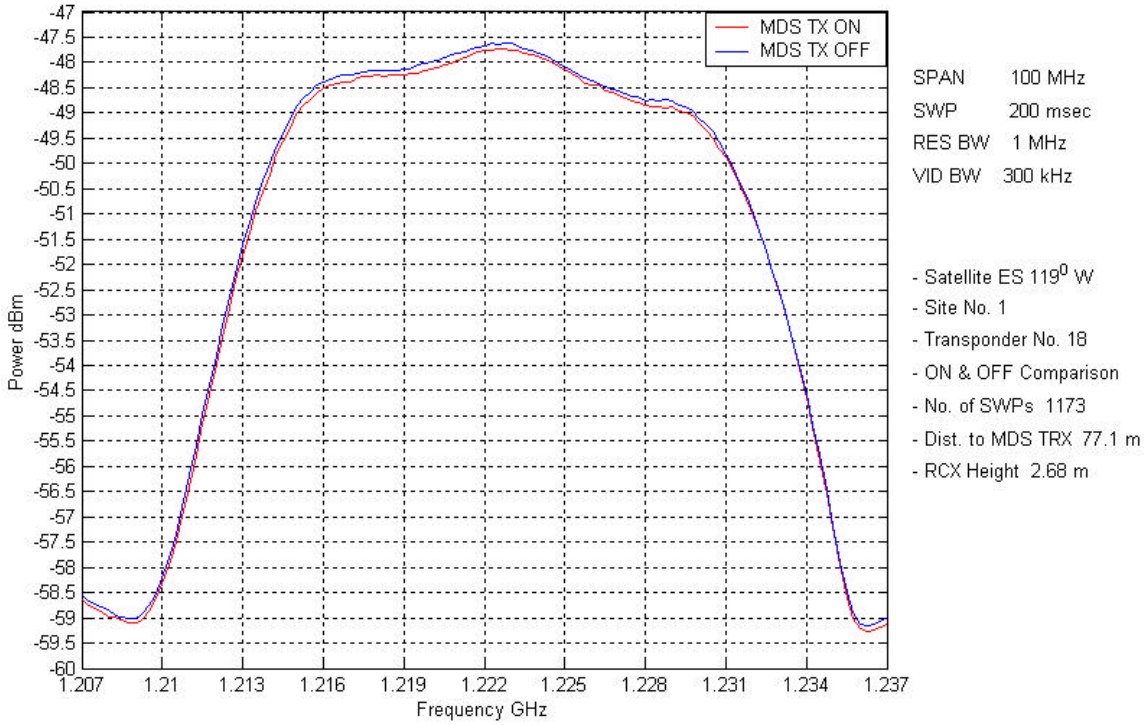

Figure 14 Site 1 ES119 TP18 ON & OFF 30 MHz Comparison plot

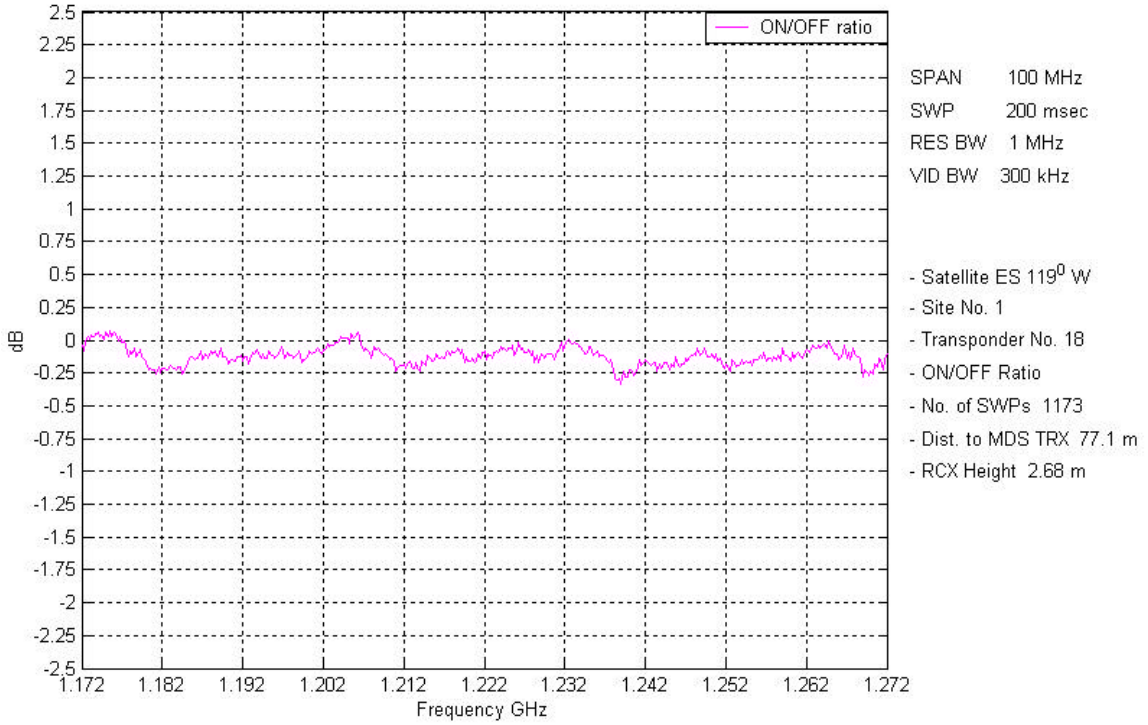

Figure 15 Site 1 ES119 TP18 ON / OFF 30 MHz Ratio plot

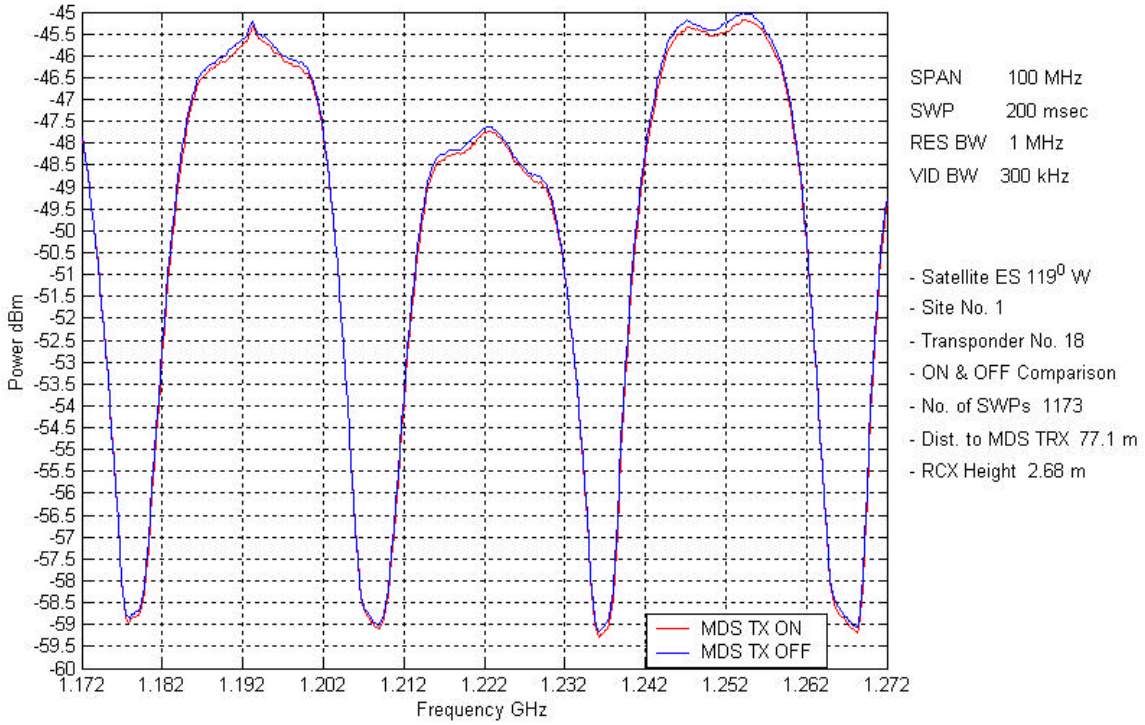

Figure 16 Site 1 ES119 LC ON & OFF Comparison plot

Figure 17 Site 1 ES110 and ES119 Antenna Configuration

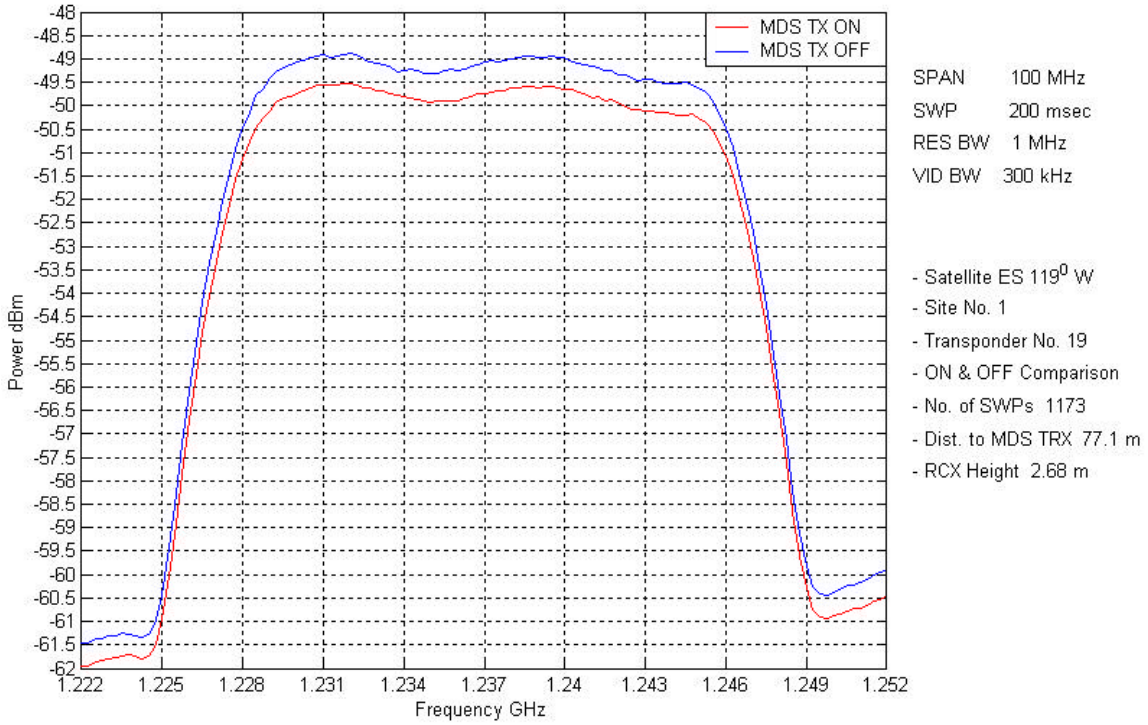

Figure 18 Site 1 ES119 TP19 ON & OFF 30 MHz Comparison plot

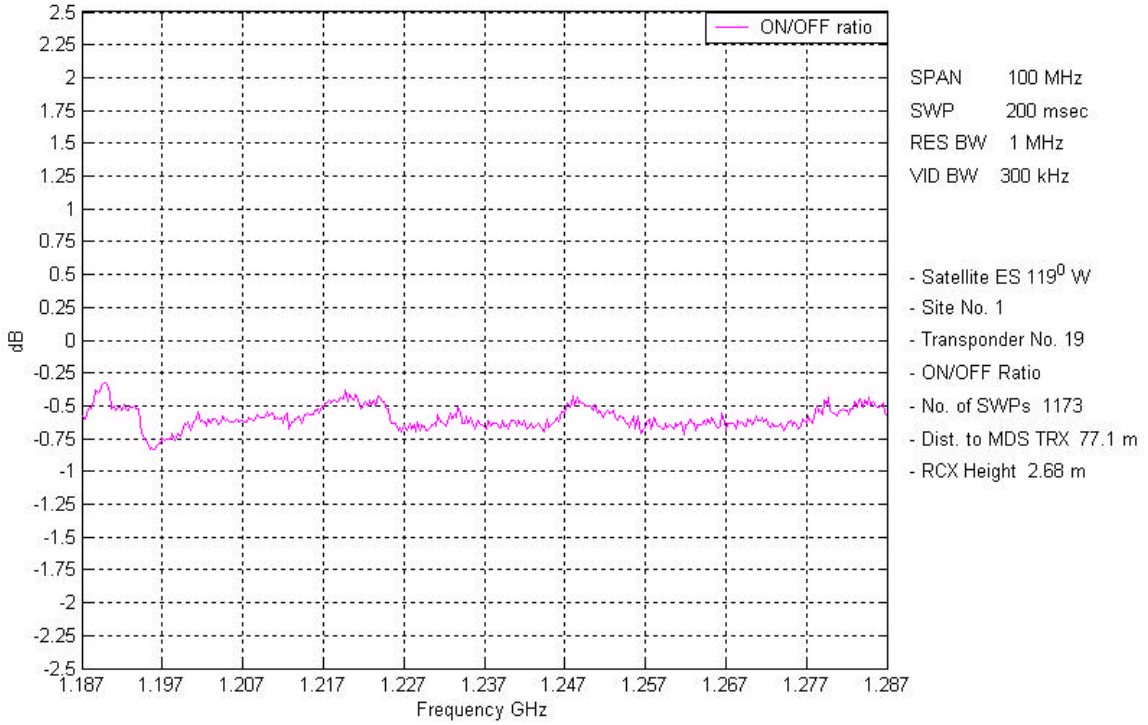

Figure 19 Site 1 ES119 TP19 ON/OFF 30 MHz Ratio plot

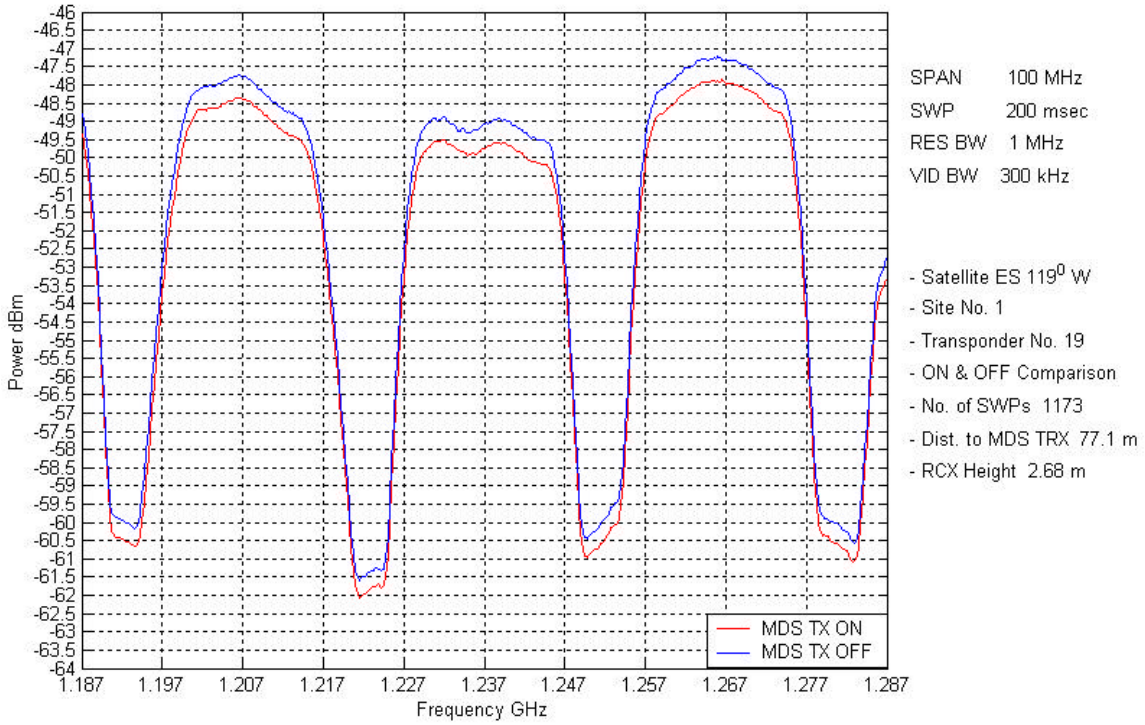

Figure 20 Site 1 ES119 RC ON & OFF Comparison plot