

GSSI model 5100
FCC ID QF75100

Measurement of 10dB bandwidth

- 1) The EUT was set up over the sand pit as shown in the test report.
- 2) A ground plane was in place between the measuring antenna and the EUT.
- 3) A log-periodic antenna (EMCO 3142) was connected to a Tektronix 2784 spectrum analyzer
- 4) In the frequency range above 400MHz, a preamplifier (CTT ALM/100-5030-329) was used.
- 5) The spectrum analyzer is set to:
 - peak detector
 - RBW = 1MHz
 - VBW = 3MHz
- 6) The frequency range is adjusted to a frequency range to show the 10dB bandwidth.
- 7) The EUT signal is maximized by varying the antenna height from 1m to 4m and changing polarization.
- 8) After the spectrum is maximized, the analyzer is placed in max hold mode.
- 9) Emissions data is recorded and factors are applied to obtain corrected spectral plot.
$$\text{dBuV/m} = \text{Reading(dBuV)} + \text{Antenna Factor(dB)} + \text{Cable loss (dB)} - \text{Preamp factor(dB)}$$

The raw data is presented as Table 1. A plot of this data is presented as Table 2.

Table 1

Table: 1

Company: Geophysical Survey Systems, Inc Model #: 5100
 Engineer: Kouma Sinn Location: EMI Site 2 Serial #: 1091
 Project #: 3025094 Pressure: N/A Detector: HP 8542E
 Date: 09/30/02 Temp: N/A Antenna: LOG2
 Standard: FCC Part 15F Humidity: N/A PreAmp: None
 Class: None Group: None Cable(s): CBLSHF103.cab
 Limit Distance: 3 meters Test Distance: 3 meters

EUT's Pulse rate: 200kHz

Span: 50MHz ResBW: 1MHz

Below 400MHz: No preamp

Voltage/Frequency: 120VAC/60Hz

Frequency Range: 30-2000MHz

n the margin of measurement uncertainty of +/-4 dB

Notes	Ant.	Frequency	Reading	Antenna	Cable	Pre-amp	Distance	
#	Pol.	MHz	dB(uV)	Factor	Loss	Factor	Factor	Net
	(V/H)			dB(1/m)	dB	dB	dB	dB(uV/m)
max.pk	V	216.500	17.0	11.1	1.9	0.0	0.0	29.9
max.pk	V	225.000	16.1	11.6	1.9	0.0	0.0	29.6
max.pk	V	234.380	18.2	12.2	1.9	0.0	0.0	32.3
max.pk	V	241.250	18.6	12.6	2.0	0.0	0.0	33.1
max.pk	V	249.000	19.5	13.0	2.0	0.0	0.0	34.5
max.pk	V	257.380	19.0	13.2	2.0	0.0	0.0	34.2
max.pk	V	265.630	18.8	13.3	2.0	0.0	0.0	34.1
max.pk	V	274.250	17.6	13.4	2.0	0.0	0.0	33.1
max.pk	V	282.000	16.1	13.5	2.1	0.0	0.0	31.7
max.pk	V	290.880	15.4	13.7	2.1	0.0	0.0	31.2
max.pk	V	329.630	13.7	15.2	2.2	0.0	0.0	31.0
max.pk	V	337.500	14.3	15.4	2.2	0.0	0.0	31.8
max.pk	V	345.500	14.7	15.6	2.2	0.0	0.0	32.5
max.pk	V	357.880	14.8	16.0	2.2	0.0	0.0	33.1
max.pk	V	375.130	14.2	16.7	2.4	0.0	0.0	33.2
max.pk	V	411.880	36.5	16.7	2.5	22.9	0.0	32.9
max.pk	V	430.630	40.5	16.8	2.6	22.9	0.0	37.0
max.pk	V	442.130	39.8	16.9	2.7	22.9	0.0	36.4
max.pk	V	457.750	40.7	17.3	2.7	24.5	0.0	36.2
max.pk	V	479.250	40.1	18.1	2.7	24.5	0.0	36.4
max.pk	V	491.630	41.1	18.2	2.7	24.5	0.0	37.4
max.pk	V	520.630	40.5	18.9	2.8	27.7	0.0	34.6
max.pk	V	533.380	41.8	19.2	2.9	27.7	0.0	36.2
max.pk	V	545.750	40.9	19.3	3.0	27.7	0.0	35.5
max.pk	V	562.750	41.9	19.4	3.0	28.2	0.0	36.1
max.pk	V	590.630	42.1	20.0	3.1	28.2	0.0	37.0
max.pk	V	609.880	42.4	20.8	3.2	29.2	0.0	37.2
max.pk	V	633.630	42.8	21.2	3.4	29.2	0.0	38.2
max.pk	V	666.880	42.2	21.2	3.6	31.6	0.0	35.5
max.pk	V	696.620	41.6	21.7	3.6	31.6	0.0	35.3
max.pk	V	715.750	42.3	22.0	3.6	32.7	0.0	35.2
max.pk	V	749.000	42.2	22.4	3.7	32.7	0.0	35.5
max.pk	V	807.750	41.1	22.6	4.2	32.1	0.0	35.7
max.pk	V	823.130	41.4	22.7	4.3	32.1	0.0	36.3
max.pk	V	903.000	39.7	24.1	4.5	33.5	0.0	34.8
max.pk	V	985.375	37.2	24.5	4.9	35	0.0	31.6
max.pk	V	1054.880	35.7	25.1	5.3	37.9	0.0	28.2
max.pk	V	1687.480	36.6	28.8	6.5	38	0.0	33.9
max.pk	V	1909.000	36.4	29.7	7.9	38	0.0	36.0
max.pk	V	2000.000	37.5	30.4	8.4	38.1	0.0	38.2

