

RF TEST REPORT

Test item : CDMA Dongle
Model No. : GPS100MVP
Order No. : 1101-00120
Date of receipt : 2011-01-27
Test duration : 2011-02-21 ~ 2011-03-16
Date of issue : 2011-03-21
Use of report : FCC Original Grant

Applicant : JOA TELECOM CO., LTD.

1007, SICOX Tower, 513-14, Sangdaewon-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do, 462-806, Korea

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Kyunggi-Do, 449-080, Korea

Test specification : §22(H)
Test environment : See appended test report
Test result : Pass Fail

The test results presented in this test report are limited only to the sample supplied by applicant and
the use of this test report is inhibited other than its purpose. This test report shall not be reproduced except in full,
without the written approval of DIGITAL EMC CO., LTD.

Tested by:


Engineer
S.K.Ryu

Witnessed by:

N/A

Reviewed by:


Manager
W.J. Lee

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1. Equipment information

1.1 Equipment description

FCC Equipment Class	Licensed Non-Broadcast Station Transmitter(TNB)
Equipment type	CDMA Dongle
Equipment model name	GPS100MVP
Equipment add model name	U-150CD
Equipment serial no.	Identical prototype
Tx Freq. Range	824.70 ~ 848.31 MHz
Rx Freq. Range	869.70 ~ 893.31 MHz
Max. Power Rating	0.622W ERP(27.94dBm)
Emission Designators	1M27F9W
Power	DC 5.0V

1.2 Ancillary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
-	-	-	-	-
-	-	-	-	-

2. Information about test items

2.1 Test mode

This Device was tested in continuous transmitting mode.(at maximum power)

Test Case 1	Only EUT
Test Case 2	-

2.2 Auxiliary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
				-
				-

2.3 Tested environment

Temperature	: 23 ~ 24 °C
Relative humidity content	: 28 ~ 32 % R.H.
Details of power supply	: DC 5.0 V

2.4 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing
→ None

3. Description of tests

3.1 Effective radiated power & equivalent isotropic radiated power

These measurements were performed outdoors at 3meter test range. The equipment under test is placed on a wooden turntable 0.8-meters above the ground plane and 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading.

For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

3.2 Occupied bandwidth

The EUT was setup to maximum output power at its lowest channel. The occupied bandwidth was measured using a spectrum analyzer. The measurements are repeated for the highest and a middle channel. The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Plots of the EUT's occupied bandwidth are shown herein.

3.3 Spurious and harmonic emissions at antenna terminal

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.

The EUT was setup to maximum output power at its lowest channel. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. The Resolution BW of the analyzer is set to 1 % of the emission bandwidth to show compliance with -13dBm limit [$43+10\log(P)$], in the 1 MHz bands immediately outside and adjacent to the edge of the frequency block.

A display line was placed at -13dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

Band Edge Requirement

In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.

3.4 Radiation spurious and harmonic emissions

This measurement was performed outdoors at 3meter test range. The equipment under test is placed on a wooden turntable 0.8-meters above the ground plane and 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

For radiated power measurements below 1GHz, a half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading.

For radiated power measurements above 1GHz, a Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. The difference between the gain of the horn and an isotropic antenna are taken into consideration.

This measurement was performed with the EUT oriented in 3 orthogonal axis.

3.5 Frequency stability/temperature variation.

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 115 % of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification - the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.000\ 25\% (\pm 2.5\ ppm)$ of the center frequency.

Time Period and Procedure:

The carrier frequency of the transmitter is measured at room temperature.(25°C to provide a reference).

1. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
2. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. Test report

4.1 Summary of tests

FCC Part Section(s)	Parameter	Status Note 1
2.1046	Conducted Output Power	C
22.913(a)	Effective Radiated Power	C
22.917(a) 2.1049	Occupied Bandwidth	C
22.917(a) 2.1051	Band Edge Spurious and Harmonic Emissions at Antenna Terminal	C
22.917(a) 2.1053	Radiated Spurious and Harmonic Emissions	C
22.355 2.1055	Frequency Stability	C

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable

Note 2: The JBP Portion of this device was tested and approved by FCC DoC Procedure.

The sample was tested according to the following specification:
ANSI C-63.4-2003, ANSI/TIA/EIA-603-C-2004

4.2 Test data

4.2.1 Conducted output power

The output power was measured under all R.C.s and S.O.s which are listed below measurement data. This device was tested under the worst case(**SO55 of RC3 for CELLULAR band**).

SAR Measurement Procedures for 3G Devices(Released October 2007)

- verify maximum output power
 - on high, middle and low channels
 - according to 3GPP2 C.S0011 / TIA-98-E, Sec. 4.4.5
- Power measurement configurations
 1. 1xRRT
 - Test Mode 1(C.S0011 Table 4.4.5.2-1), SO55, RC1, Traffic Channel @9600bps
 - Test Mode 3(C.S0011 Table 4.4.5.2-2), SO55 or SO32, RC3, FCH @9600bps
 - Test Mode 3(C.S0011 Table 4.4.5.2-2), SO32, RC3, FCH+SCH @9600bps
 - other configurations supported by the DUT
 - power control
 - Bits Hold for FCH+SCH
 - otherwise ALL Bits Up
 2. Ev-DO Rev.0
 - FTAP: 2 slot version of 307.2Kbps(ACK in all slots)
 - RTAP: 153.6Kbps in sub type 0/1 PHY Configuration
 3. Ev-DO Rev.A
 - FETAP: 2 slot version of 307.2Kbps(ACK in all slots)
 - RETAP: 4096 bits payload with 16 slot termination target
 - In Subtype 2PHY configuration

- Measurement data

Band	Channel	1X RRT					EvDo (Rev.0)		EvDo (Rev.A)	
		RC1	RC1	RC3	RC3	RC3				
		SO2	SO55	SO2	SO55	SO32 (TDSO)	FTAP	RTAP	FETAP	RETAP
Cellular	1013	23.30	23.31	23.41	23.52	N/A	N/A	N/A	N/A	N/A
	0384	23.24	23.29	23.26	23.54	N/A	N/A	N/A	N/A	N/A
	0777	23.25	23.27	23.34	23.41	N/A	N/A	N/A	N/A	N/A

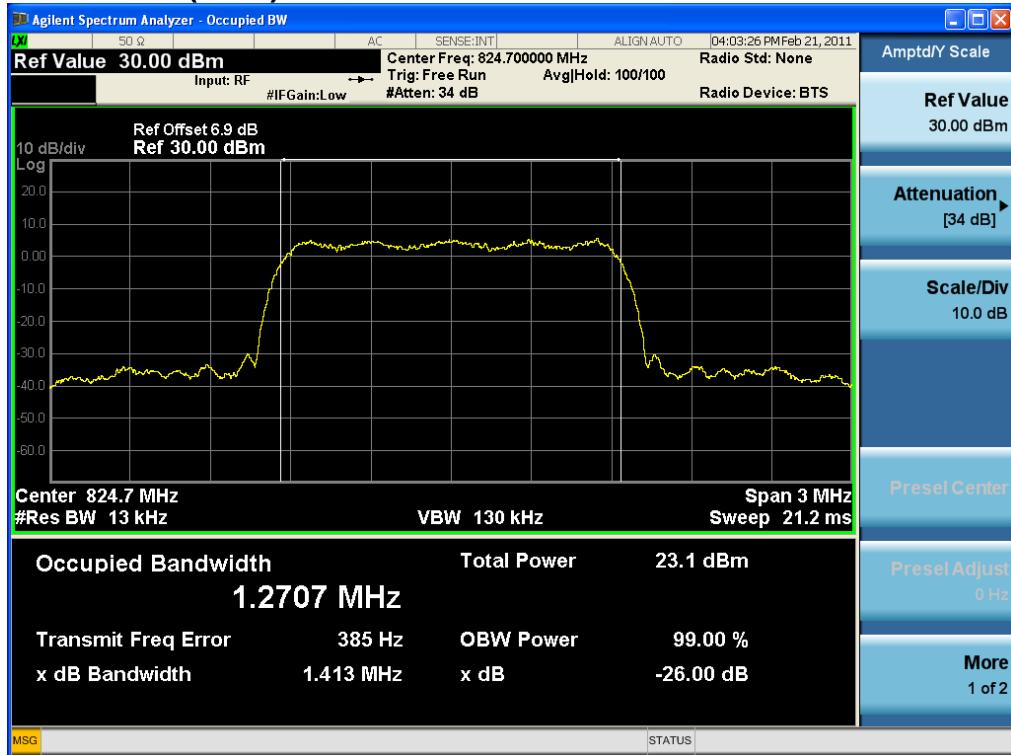
4.2.2 Occupied bandwidth(99%)

Band	Channel	Test Result(MHz)
Cellular	1013	1.2707
	384	1.2708
	777	1.2731

- Test Plots: Refer to next page.

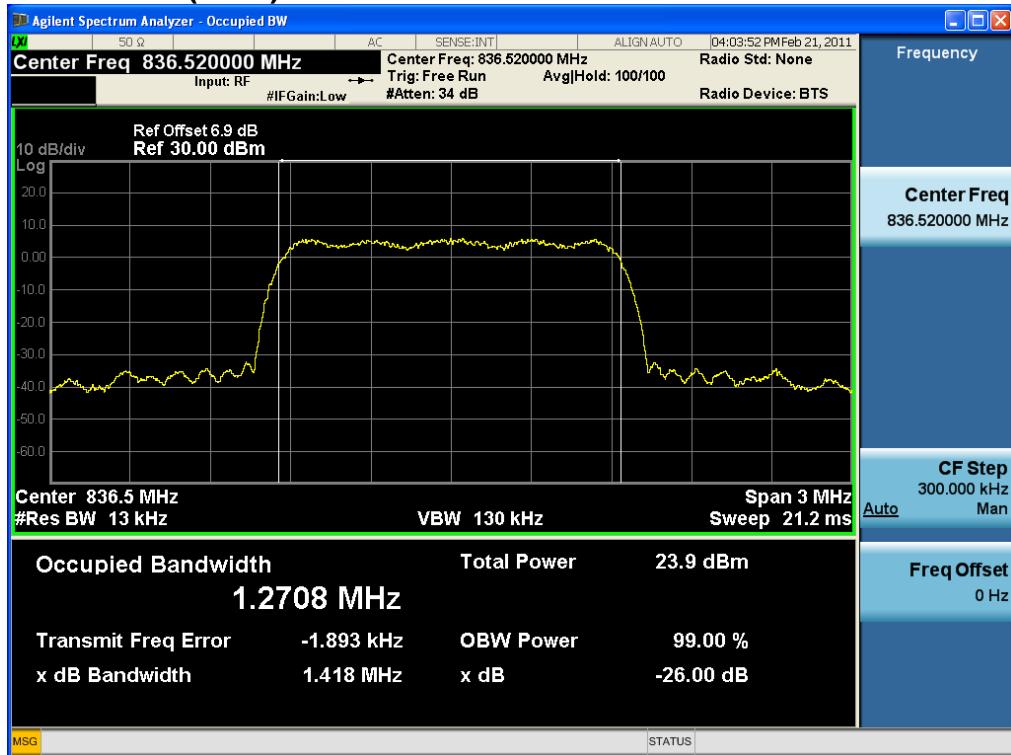
Occupied Bandwidth(99 %)

CDMA850 & Channel: 1013



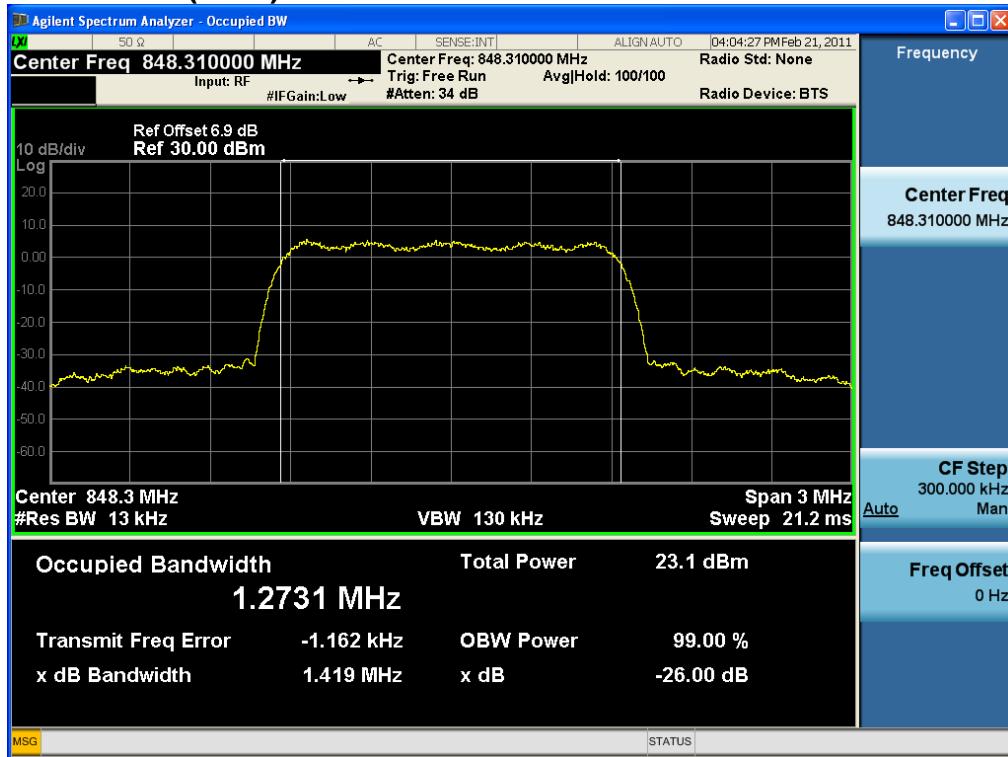
Occupied Bandwidth(99 %)

CDMA850 & Channel: 384



Occupied Bandwidth(99 %)

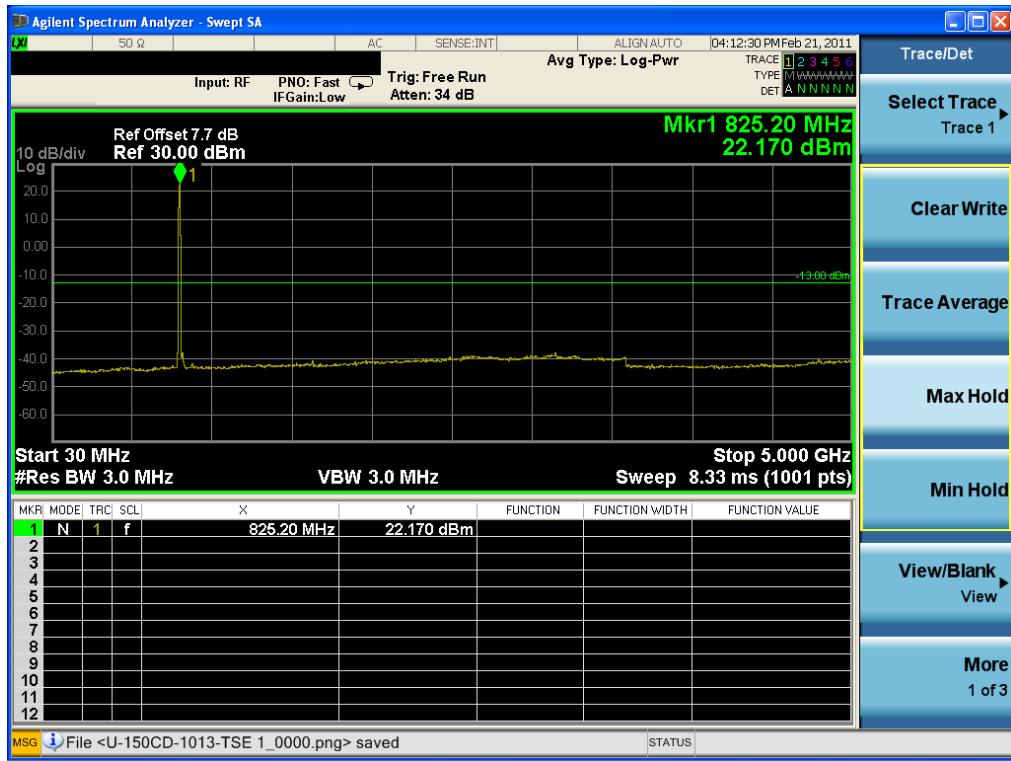
CDMA850 & Channel: 777



4.2.3 Spurious and harmonic emissions at antenna terminal

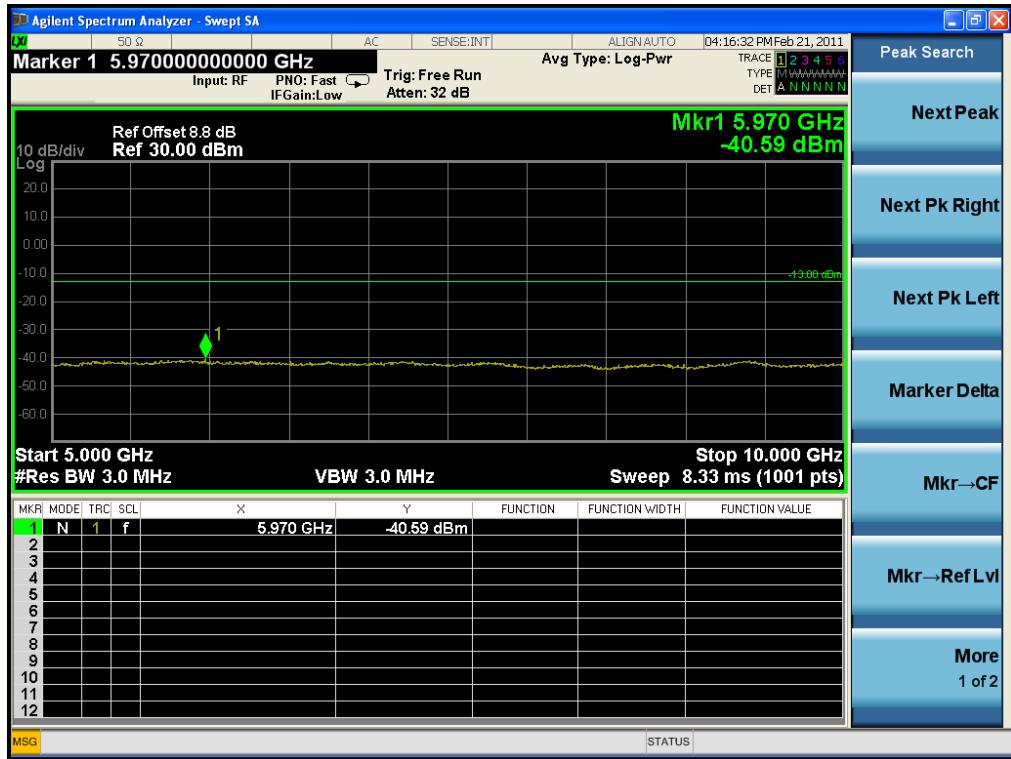
Spurious and Harmonic Emissions

CDMA850 & Channel: 1013



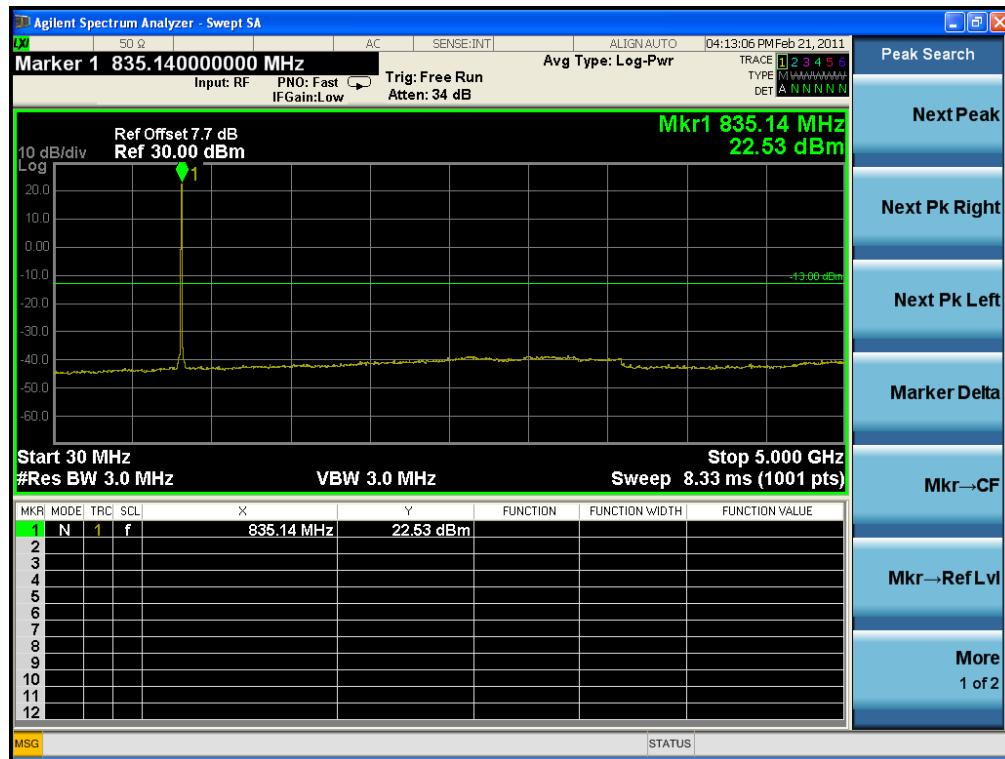
Spurious and Harmonic Emissions

CDMA850 & Channel: 1013



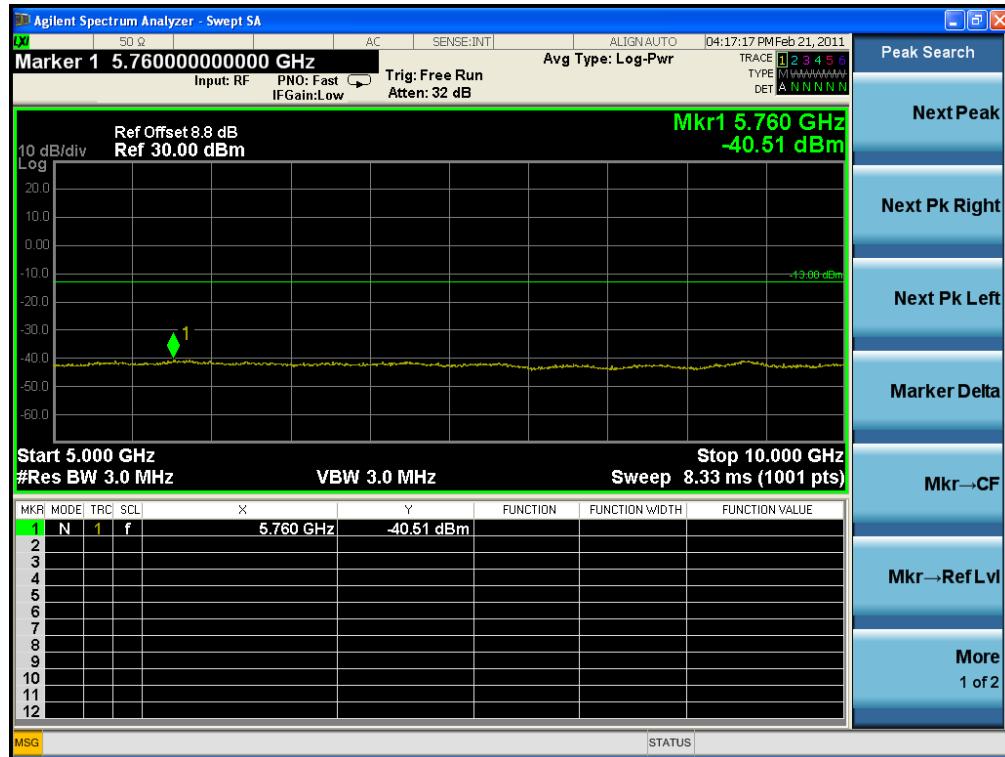
Spurious and Harmonic Emissions

CDMA850 & Channel: 384



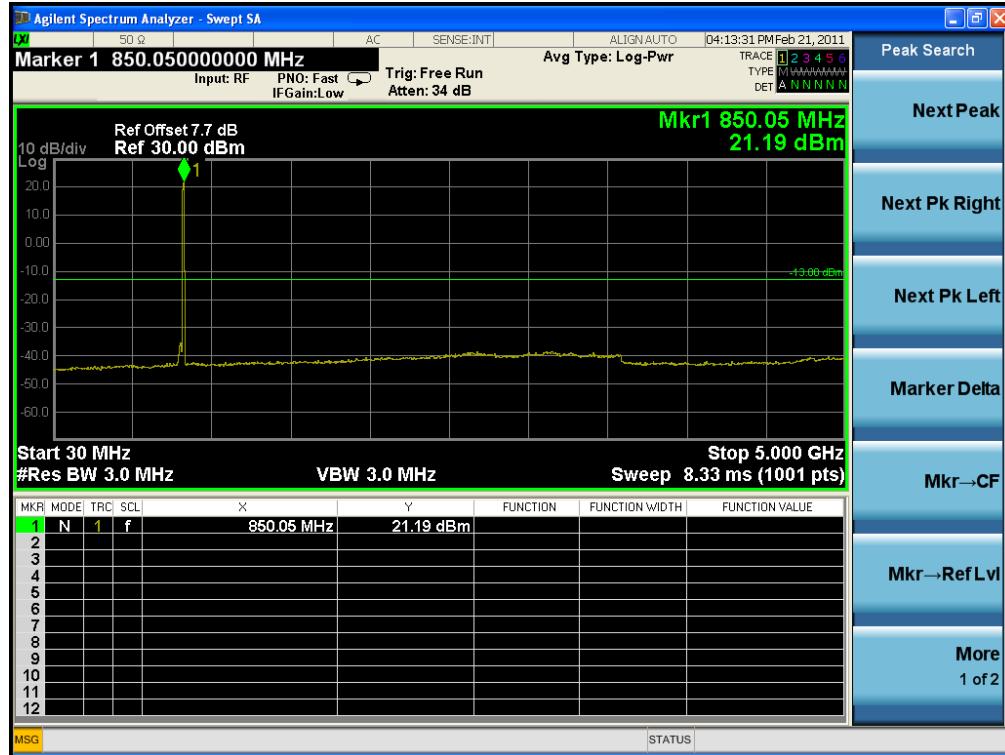
Spurious and Harmonic Emissions

CDMA850 & Channel: 384



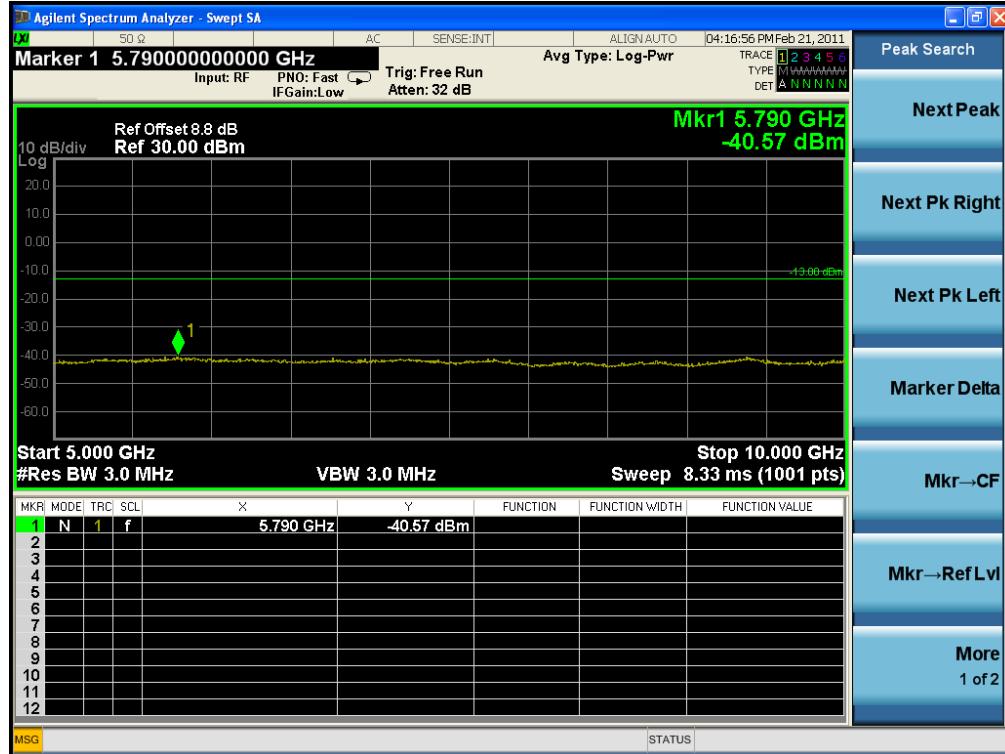
Spurious and Harmonic Emissions

CDMA850 & Channel: 777



Spurious and Harmonic Emissions

CDMA850 & Channel: 777



4.2.4 Band edge

Band Edge

CDMA850 & Channel: 1013



Band Edge

CDMA850 & Channel: 777



4.2.5 Effective Radiated Power(CDMA850)

Channel	EUT Position	Ref. level (dBm)	Pol. (H/V)	ERP (dBm)	ERP (W)	Power Supply	Note.
1013	X	-6.42	H	27.47	0.558	DC 5V	-
384	X	-6.39	H	27.94	0.622	DC 5V	-
777	X	-6.71	H	27.68	0.586	DC 5V	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method
according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This test is performed with EUT oriented in 3 orthogonal axis and horizontal/vertical polarization of detecting antenna. The worst case data is reported.

4.2.6 Radiated spurious emissions(CDMA850)

CH.	Max. ERP (dBm)	Freq. (MHz)	EUT Pos. (Axis)	ANT Pol. (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Limit (dBc)
1013	27.47	1648.90	X	H	-53.92	7.18	-46.74	74.21	40.47
		2473.99	X	H	-49.65	8.72	-40.93	68.40	
		-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	
384	27.94	1672.64	X	H	-55.56	7.30	-48.26	76.20	40.94
		2509.59	X	H	-49.37	8.71	-40.66	68.60	
		-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	
777	27.68	1696.86	X	H	-53.63	7.41	-46.22	73.90	40.68
		2545.53	X	H	-54.63	8.72	-45.91	73.59	
		-	-	-	-	-	-	-	
		-	-	-	-	-	-	-	

- Limit Calculation = $43 + 10 \log_{10} (\text{ERP [W]}) [\text{dBc}]$

$$= 43 + \text{ERP[dBm]} - 30 \text{dB} [\text{dBc}]$$

- Emissions were not reported greater than below 30dB of the Limit.

NOTE

Radiated Spurious Emission Measurements by Substitution Method
according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

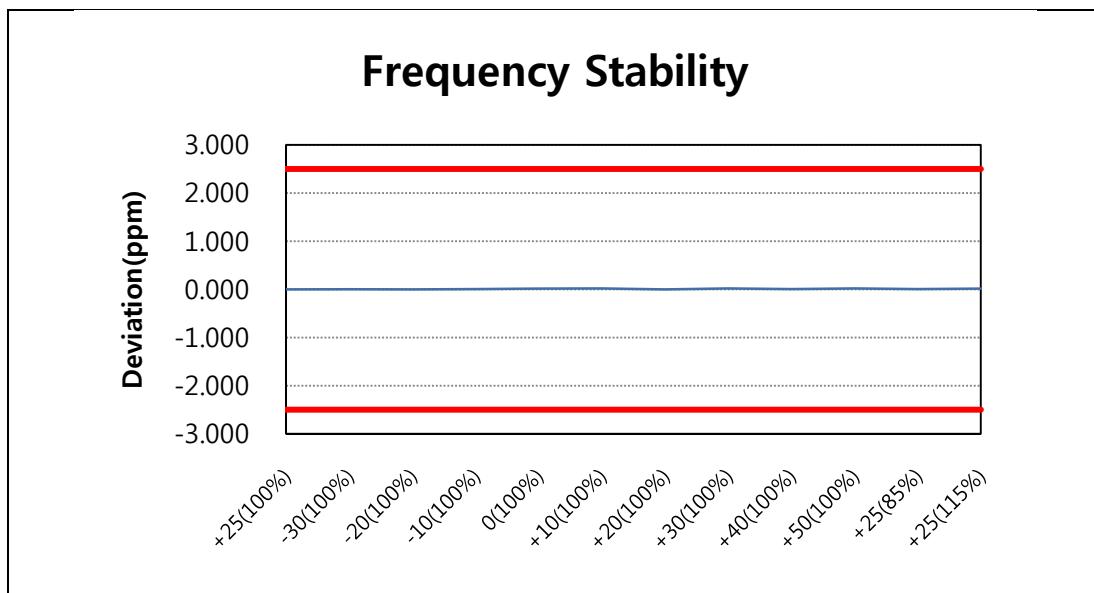
For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This test is performed all axis of EUT and in horizontal/vertical polarization of detecting antenna. The worst case data is reported.

4.2.7 Frequency Stability(CDMA850)

OPERATING FREQUENCY : 836,519,991 Hz
 CHANNEL : 0384(Mid)
 REFERENCE VOLTAGE : 5.0 VDC
 DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ (Hz)	Deviation (ppm)
100%	5.0	+25(Ref)	836,519,991	0.000
100%		-30	836,519,994	0.004
100%		-20	836,519,992	0.001
100%		-10	836,519,995	0.005
100%		0	836,520,005	0.017
100%		+10	836,520,006	0.018
100%		+20	836,519,992	0.001
100%		+30	836,520,007	0.019
100%		+40	836,519,995	0.005
100%		+50	836,520,006	0.018
85%	4.25	+25	836,519,995	0.005
115%	5.75	+25	836,520,005	0.017
BAT. END POINT	N/A	+25	-	-



4.2.8 SAMPLE CALCULATIONS

A. Emission Designator

- Cellular Band -

Emission Designator = 1M27F9W

CDMA BW = 1.2731 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

APPENDIX

TEST EQUIPMENT FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

	Type	Manufacturer	Model	Cal.Date (dd/mm/yy)	Next.Cal.Date (dd/mm/yy)	S/N
<input type="checkbox"/>	Spectrum Analyzer	Agilent	E4440A	30/09/10	30/09/11	MY45304199
<input type="checkbox"/>	Spectrum Analyzer	Rohde Schwarz	FSQ26	11/01/11	11/01/12	200445
<input type="checkbox"/>	Spectrum analyzer	Agilent	E4404B	08/03/11	08/03/12	US41061134
<input type="checkbox"/>	Spectrum Analyzer(RE)	H.P	8563E	04/10/10	04/10/11	3551A04634
<input checked="" type="checkbox"/>	MXA Signal Analyzer	Agilent Technologies, Inc	N9020A	07/01/11	07/01/12	MY49100833
<input type="checkbox"/>	Power Meter	H.P	EPM-442A	01/07/10	01/07/11	GB37170413
<input type="checkbox"/>	Power Sensor	H.P	8481A	01/07/10	01/07/11	3318A96332
<input type="checkbox"/>	Power Divider	Agilent	11636B	05/10/10	05/10/11	56471
<input type="checkbox"/>	4-Way Power Divider	ET Industries	D-0526-4	24/12/10	24/12/11	210195001
<input checked="" type="checkbox"/>	Power Splitter	Anritsu	K241B	05/10/10	05/10/11	020611
<input type="checkbox"/>	Power Splitter	Anritsu	K241B	01/07/10	01/07/11	017060
<input type="checkbox"/>	Power Splitters & Dividers	Aeroflex/Weinschel	1594	21/02/11	21/02/12	1177
<input type="checkbox"/>	Frequency Counter	H.P	5342A	01/07/10	01/07/11	2119A04450
<input checked="" type="checkbox"/>	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	04/10/10	04/10/11	30604493/021031
<input checked="" type="checkbox"/>	Digital Multimeter	H.P	34401A	07/03/11	07/03/12	3146A13475, US36122178
<input type="checkbox"/>	Multifunction Synthesizer	HP	8904A	11/10/10	11/10/11	3633A08404
<input checked="" type="checkbox"/>	Signal Generator	Rohde Schwarz	SMR20	08/03/11	08/03/12	101251
<input checked="" type="checkbox"/>	Signal Generator	H.P	ESG-3000A	01/07/10	01/07/11	US37230529
<input type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMJ100A	11/01/11	11/01/12	100148
<input type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMBV100A	11/01/11	11/01/12	255571
<input type="checkbox"/>	Audio Analyzer	H.P	8903B	02/07/10	02/07/11	3011A09448
<input type="checkbox"/>	Modulation Analyzer	H.P	8901B	01/07/10	01/07/11	3028A03029
<input checked="" type="checkbox"/>	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	07/03/11	07/03/12	GB43461134
<input type="checkbox"/>	Universal Radio communication Tester	Rohde Schwarz	CMU200	07/03/11	07/03/12	106760
<input type="checkbox"/>	Bluetooth Tester	TESCOM	TC-3000B	01/07/10	01/07/11	3000B000268
<input checked="" type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	13/01/11	13/01/12	090205-3
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	13/01/11	13/01/12	090205-2
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	13/01/11	13/01/12	090205-4
<input type="checkbox"/>	AC Power supply	DAEKWANG	5KVA	08/03/11	08/03/12	20060321-1
<input checked="" type="checkbox"/>	DC Power Supply	HP	6622A	07/03/11	07/03/12	3448A03760
<input type="checkbox"/>	DC Power Supply	HP	6633A	07/03/11	07/03/12	3524A06634
<input type="checkbox"/>	DC Power Supply	Protek	PWS-3010D	04/10/10	04/10/11	4072702
<input checked="" type="checkbox"/>	BAND Reject Filter	Microwave Circuits	N0308372	05/10/10	05/10/11	3125-01DC0352
<input type="checkbox"/>	BAND Reject Filter	Wainwright	WRCG1750	05/10/10	05/10/11	2
<input type="checkbox"/>	High-Pass Filter	ANRITSU	MP526D	04/10/10	04/10/11	M27756
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX2.1	N/A	N/A	1
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX3.0	N/A	N/A	9
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX5.0	N/A	N/A	8

	Type	Manufacturer	Model	Cal.Date (dd/mm/yy)	Next.Cal.Date (dd/mm/yy)	S/N
<input type="checkbox"/>	High-Pass Filter	Wainwright	WHKX8.5	N/A	N/A	1
<input checked="" type="checkbox"/>	High-Pass Filter	Wainwright	D82346	N/A	N/A	9
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	32
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	53
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT1900.0/2200.0-5/40-10SSK	N/A	N/A	30
<input checked="" type="checkbox"/>	HORN ANT	ETS	3115	04/10/10	04/10/11	21097
<input type="checkbox"/>	HORN ANT	ETS	3115	14/07/10	14/07/11	6419
<input type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/11	154
<input type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/11	155
<input checked="" type="checkbox"/>	HORN ANT	SCHWARZBECK	BBHA9120A	13/04/10	13/04/12	322
<input checked="" type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	29/11/10	29/11/11	2116
<input checked="" type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	29/11/10	29/11/11	2117
<input checked="" type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	29/11/10	29/11/11	2261
<input checked="" type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	29/11/10	29/11/11	2262
<input type="checkbox"/>	LOOP Antenna	ETS	6502	29/10/10	29/10/11	3471
<input type="checkbox"/>	Coaxial Fixed Attenuators	Agilent	8491B	01/07/10	01/07/11	MY39260700
<input checked="" type="checkbox"/>	Attenuator (3dB)	WEINSCHEL	56-3	05/10/10	05/10/11	Y2342
<input type="checkbox"/>	Attenuator (3dB)	WEINSCHEL	56-3	05/10/10	05/10/11	Y2370
<input checked="" type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	23-10-34	01/10/10	01/10/11	BP4386
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	23-10-34	11/01/11	11/01/12	BP4387
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	86-10-11	05/10/10	05/10/11	446
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	86-10-11	05/10/10	05/10/11	408
<input type="checkbox"/>	Attenuator (20dB)	WEINSCHEL	86-20-11	05/10/10	05/10/11	432
<input type="checkbox"/>	Attenuator (30dB)	JFW	50FH-030-300	07/03/11	07/03/12	060320-1
<input type="checkbox"/>	Attenuator (40dB)	WEINSCHEL	57-40-33	01/10/10	01/10/11	NN837
<input type="checkbox"/>	Termination	H.P	HP-909D	02/07/10	02/07/11	02750
<input type="checkbox"/>	Termination	H.P	HP-909D	02/07/10	02/07/11	02702
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	01/07/10	01/07/11	788
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	01/07/10	01/07/11	790
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	01/07/10	01/07/11	112
<input checked="" type="checkbox"/>	Amplifier (30dB)	Agilent	8449B	07/03/11	07/03/12	3008A01590
<input type="checkbox"/>	Amplifier (30dB)	H.P	8449B	07/03/11	07/03/12	3008A00370
<input checked="" type="checkbox"/>	Amplifier	EMPOWER	BBS3Q7ELU	04/10/10	04/10/11	1020
<input type="checkbox"/>	RF Power Amplifier	OPHIRRF	5069F	01/07/10	01/07/11	1006
<input type="checkbox"/>	EMI TEST RECEIVER	R&S	ESU	20/01/11	20/01/12	100014
<input type="checkbox"/>	BILOG ANTENNA	SCHAFFNER	CBL6112B	14/07/10	14/07/11	2737
<input type="checkbox"/>	Amplifier (22dB)	H.P	8447E	11/01/11	11/01/12	2945A02865
<input type="checkbox"/>	EMI TEST RECEIVER	R&S	ESCI	08/03/11	08/03/12	100364

	Type	Manufacturer	Model	Cal.Date (dd/mm/yy)	Next.Cal.Date (dd/mm/yy)	S/N
<input type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	29/11/10	29/11/11	91032789
<input checked="" type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A1	29/11/10	29/11/12	1098
<input checked="" type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	21/12/10	21/12/12	91031946
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A1	07/07/10	07/07/11	0590
<input type="checkbox"/>	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	07/03/11	07/03/12	1252741
<input type="checkbox"/>	Low Noise Pre Amplifier	TSJ	MLA-00108-B02-36	11/01/11	11/01/12	1518831
<input checked="" type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	07/03/11	07/03/12	2944A10144
<input type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	01/07/10	01/07/11	2648A04922
<input type="checkbox"/>	Spectrum Analyzer(CE)	H.P	8591E	07/03/11	07/03/12	3649A05889
<input type="checkbox"/>	LISN	Kyoritsu	KNW-407	11/01/11	11/01/12	8-317-8
<input type="checkbox"/>	LISN	Kyoritsu	KNW-242	02/07/10	02/07/11	8-654-15
<input type="checkbox"/>	CVCF	NF Electronic	4420	08/03/11	08/03/12	304935/337980
<input type="checkbox"/>	50 ohm Terminator	HME	CT-01	11/01/11	11/01/12	N/A
<input type="checkbox"/>	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	02/07/10	02/07/11	4N-170-3
<input type="checkbox"/>	Wideband Radio Communication Tester	R&S	CMW500	21/10/10	21/10/11	100988