A Test Lab Techno Corp.

Changan Lab：No. 140 -1, Changan Street, Bade City, Taoyuan County, Taiwan R.O.C.
Tel：886-3-271-0188 / Fax：886-3-271-0190

P22 & P24 Test Report

Test Report No.	:	**0702FR11**
Applicant	:	**GoPass Technology Corp.**
		17F.,866-1 Chung-Cheng Road, Chung Ho City, Taipei, Taiwan(R.O.C)
Manufacturer	:	**GoPass Technology Corp.**
Model Name	:	**GPS Tracker**
Trade Mark	:	**GoPass**
Model Number	:	**AVL-900, AVL-9xx, GPS-9xx**
FCC ID	:	**UBHAVL9X**
Tx Frequency Range	:	**824.2 - 848.8MHz (GSM 850)**
		1850.2 - 1909.8MHz (PCS 1900)
Dates of Test	:	**Feb. 12-14, May. 18, 2007**
Test Specification	:	**47 CFR Part 22H, 24E**
Location of Test Lab.	:	**Chang-an Lab.**

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full.

Country Huang **20070518**
Measurement Center Manager

John Cheng **20070518**
Testing Engineer

Contents

1. General Information

Applicant：

GoPass Technology Corp.
17F.,866-1 Chung-Cheng Road, Chung Ho City, Taipei, Taiwan (R.O.C.)

Manufacturer	：	GoPass Technology Corp. 17F.,866-1 Chung-Cheng Road, Chung Ho City, Taipei, Taiwan (R.O.C)
Product Name	：	GPS Tracker
Trade Mark	：	GoPass
Model Number	：	AVL-900, AVL-9xx, GPS-9xx
FCC ID	：	UBHAVL9X
TX Frequency	：	824 - 849 MHz (GSM 850) 1850 - 1910 MHz (PCS 1900)
RX Frequency	：	869 - 894 MHz (GSM 850) 1930 - 1990 MHz (PCS 1900)
Antenna Type	：	Detachable antenna
Maximum Output Power to Antenna	：	32.75 dBm (GSM 850) 29.81 dBm (PCS 1900)
Max. ERP/EIRP Power	：	0.262 W (GSM 850) 0.343 W (PCS 1900)
Power Rating (DC , Voltage and Current of RF element or PA)	：	5V / 0.5 A
Digital Modulation Emission	：	GMSK(GSM 850 / PCS1900)
Power Supply Type	：	DC Adaptor
DC Power Cord	：	Shielded USB Cable, 0.8 meter, Cigarette Plug
Adapter	：	SEMDICAR TECHNOLOGY CORP. / IC-USB
DUT Stage	：	Production Unit

2. Test Configuration of Equipment under Test

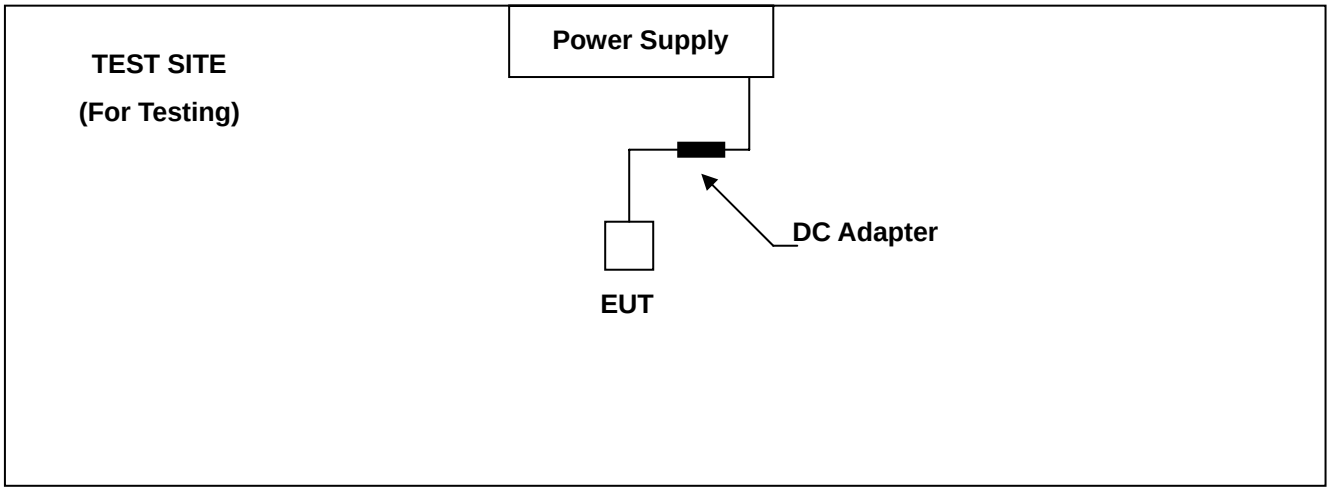
2.1 Test Manner

1. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range.
2. During all testing, EUT is in link mode with base station emulator at maximum power level. (PCL=5 for GSM 850 or PCL=0 for PCS 1900)
3. Frequency range investigated: radiated emission 30 MHz to 9000 MHz for GSM850; 30MHz to 19000 MHz for PCS 1900.

2.2 Test Mode

Application	GSM 850	PCS 1900
Radiated Emission	☒ CH 128 ☒ CH 190 ☒ CH 251	☒ CH 512 ☒ CH 661 ☒ CH 810
	☒ CH 128 + GPRS ☒ CH 190 + GPRS ☒ CH 251 + GPRS	☒ CH 512 + GPRS ☒ CH 661 + GPRS ☒ CH 810+ GPRS
Conducted Measurement	☒ CH 128 ☒ CH 190 ☒ CH 251	☒ CH 512 ☒ CH 661 ☒ CH 810
	☒ CH 128 + GPRS ☒ CH 190 + GPRS ☒ CH 251 + GPRS	☒ CH 512 + GPRS ☒ CH 661 + GPRS ☒ CH 810+ GPRS

2.3 Connection Diagram of Test System



During testing (LINK & Stand by Mode) the EUT (GPS Tracker) was connected dc output of DC adapter. EUT (GPS Tracker)'s Mic port connected to microphone and Turn on GPS Receiver.

2.4 Ancillary Equipment List

1. Base Station(R&S) CMU200 106656
2. Power Supply (GW) 12P3A H281001

3. General Information of Test Site

Test Site Location: No. 140 -1, Changan Street, Bade City, Taoyuan County, Taiwan R.O.C.
TEL: 886-3-271-0188 FAX: 886-3-271-0190

Registration Number: 854525

The chamber meets the characteristics of ANSI C63.4-2003. This site is on file with the FCC.

3.1 Test Voltage

DC 12V

3.2 Test in Compliance with

47 CFR Part 22H, 24E and Part 2.

3.3 Frequency Range Investigated

1. Radiation: from 30 MHz to 9000 MHz for GSM 850.
2. Radiation: from 30 MHz to 19000 MHz for PCS 1900.

3.4 Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.

4. Test Data and Test Result

4.1 List of Measurements and Examinations

FCC Rule	DESCRIPTION OF TEST	Result	Section
§ 2.1046	RF Output Power	Passed	4.2
§ 22.913 § 24.232	ERP / EIRP	Passed	4.3
§ 2.1049 § 22.917 § 24.238(b)	Occupied Bandwidth & Band Edge Measurement	Passed	4.4
§ 2.1051	Conducted Emission	Passed	4.5
§ 2.1053	Field Strength of Spurious Radiation	Passed	4.6
§ 2.1055 § 22.355 § 24.235	Frequency Stability vs. Temperature	Passed	4.7
§ 2.1055 § 22.355 § 24.235	Frequency Stability vs. Voltage	Passed	4.8

4.2 RF Output Power

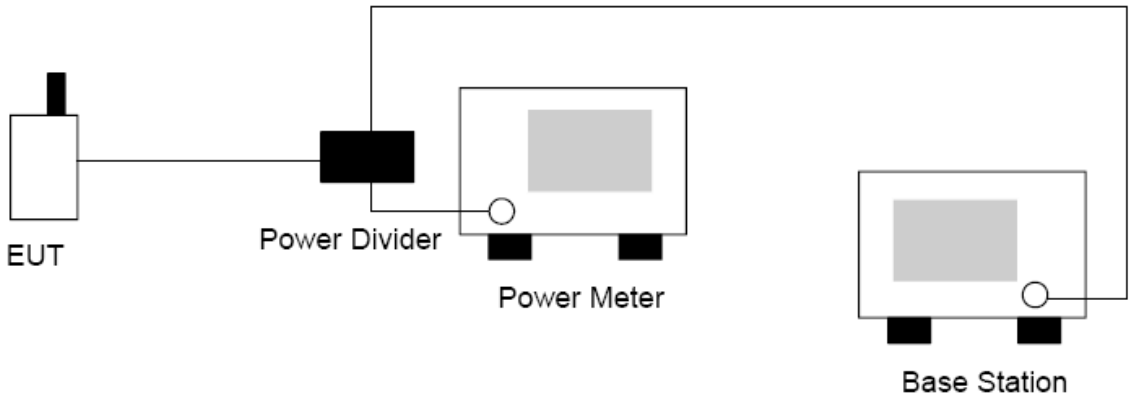
4.2.1 Measurement Instruments：

As described in chapter 5 of this test report.

4.2.2 Test Procedure：

1. The transmitter output was connected to power meter and base station through power divider.
2. Set EUT at PCL=5 for GSM 850 and/or PCL=0 for PCS 1900 through base station.
3. Select lowest, middle, and highest channels for each band.

4.2.3 Test Setup Layout：



4.2.4 Test Result：

Bands	Channel	Frequency (MHz)		Conducted Power (dBm)	Conducted Power (Watts)
GSM 850	128	Low	824.2	**32.75**	**1.884**
	190	Mid	836.4	**32.68**	**1.854**
	251	High	848.8	**32.62**	**1.828**
GSM 850 + GPRS	128	Low	824.2	**32.11**	**1.626**
	190	Mid	836.4	**32.05**	**1.603**
	251	High	848.8	**31.99**	**1.581**

Bands	Channel	Frequency (MHz)		Conducted Power (dBm)	Conducted Power (Watts)
PCS 1900	512	Low	1850.2	**29.81**	**0.957**
	661	Mid	1880.0	**29.60**	**0.912**
	810	High	1909.8	**29.44**	**0.879**
PCS 1900 + GPRS	512	Low	1850.2	**29.70**	**0.933**
	661	Mid	1880.0	**29.52**	**0.895**
	810	High	1909.8	**29.32**	**0.855**

Note:In GPRS data connect mode compare with EGPRS data connect mode, so the GPRS is worse case in test.

4.3 ERP / EIRP Measurement

Equivalent isotropic radiated power measurements by substitution method according to ANSI/TIA/EIA-603-A.

4.3.1 Measurement Instruments

As described in chapter 5 of this test report.

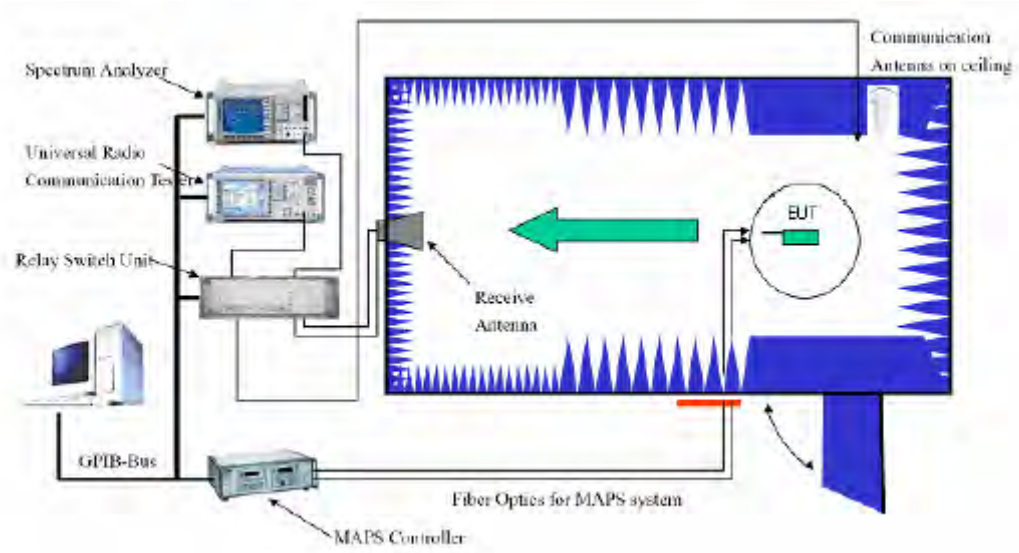
4.3.2 Test Procedure

The phone was tested in an anechoic chamber with a 3-axis position system that permits taking complete spherical scans of the EUT's 3-axis radiation patterns. For all tests, the phone was supported in a free space type environment, vertically oriented in the chamber. Tests were done for GSM 850 three frequencies (824.2, 836.6 and 848.8 MHz) and GSM 1900 three frequencies (1850.2, 1880.00, and 1909.80 MHz).

GSM measurements were made with the phone placed in a call using the CMU200 mobile station test set. The phone was weakly coupled to the test set and configured to transmit in full data rate mode.

The radiated power was measured using ETS-LINDGREN OTA Chamber in "Peak" mode. From these measurements, the software calculates the angle at which maximum radiated power occurs for each case, and the radiated power at this angle was extracted from the data.

4.3.3 Test Setup Layout of ERP/EIRP



4.3.4 Test Result

GSM 850 Radiated Power ERP		
Horizontal Polarization		
Frequency (MHz)	ERP (dBm)	ERP (W)
824.2	**20.92**	**0.124**
836.4	**23.48**	**0.223**
848.8	**24.18**	**0.262**

GSM 850 + GPRS Radiated Power ERP		
Horizontal Polarization		
Frequency (MHz)	ERP (dBm)	ERP (W)
824.2	**21.27**	**0.134**
836.4	**22.94**	**0.197**
848.8	**23.66**	**0.232**

PCS 1900 Radiated Power ERP		
Horizontal Polarization		
Frequency (MHz)	ERP (dBm)	ERP (W)
1850.2	**25.35**	**0.343**
1880.0	**23.61**	**0.230**
1909.8	**24.09**	**0.256**

PCS 1900 + GPRS Radiated Power ERP		
Horizontal Polarization		
Frequency (MHz)	ERP (dBm)	ERP (W)
1850.2	**25.16**	**0.328**
1880.0	**23.92**	**0.247**
1909.8	**24.27**	**0.267**

4.4 Occupied Bandwidth and Band Edge Measurement

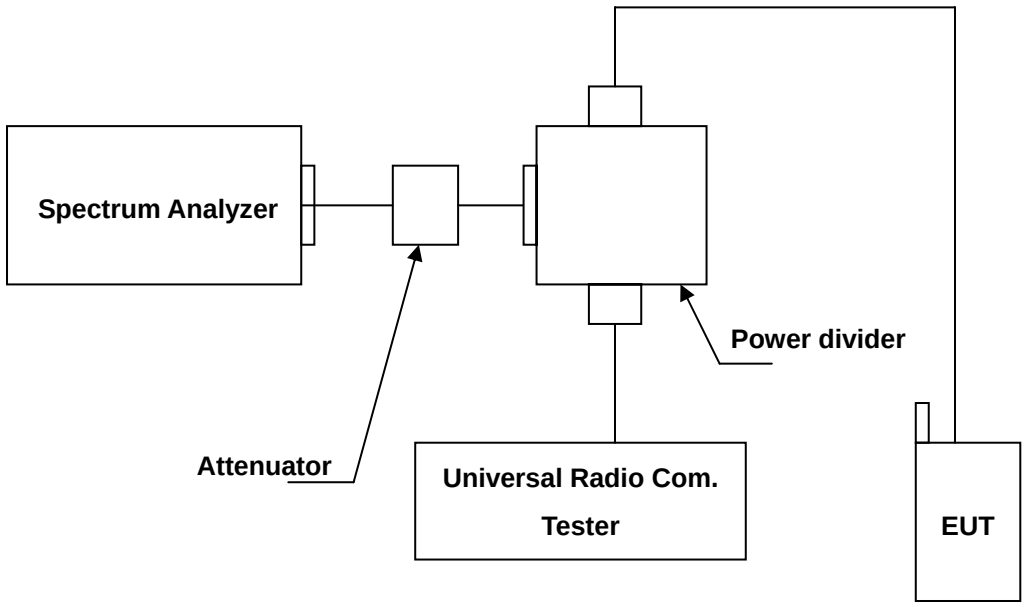
4.4.1 Measurement Instruments

As described in chapter 5 of this test report.

4.4.2 Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The occupied bandwidth of middle channel for the highest and lowest RF powers was measured.
3. The band edge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly BW/100.
4. The band edge setting RB=3kHz ; VB=3kHz.

4.4.3 Test Setup Layout



4.4.4 Occupied Bandwidth Test Result

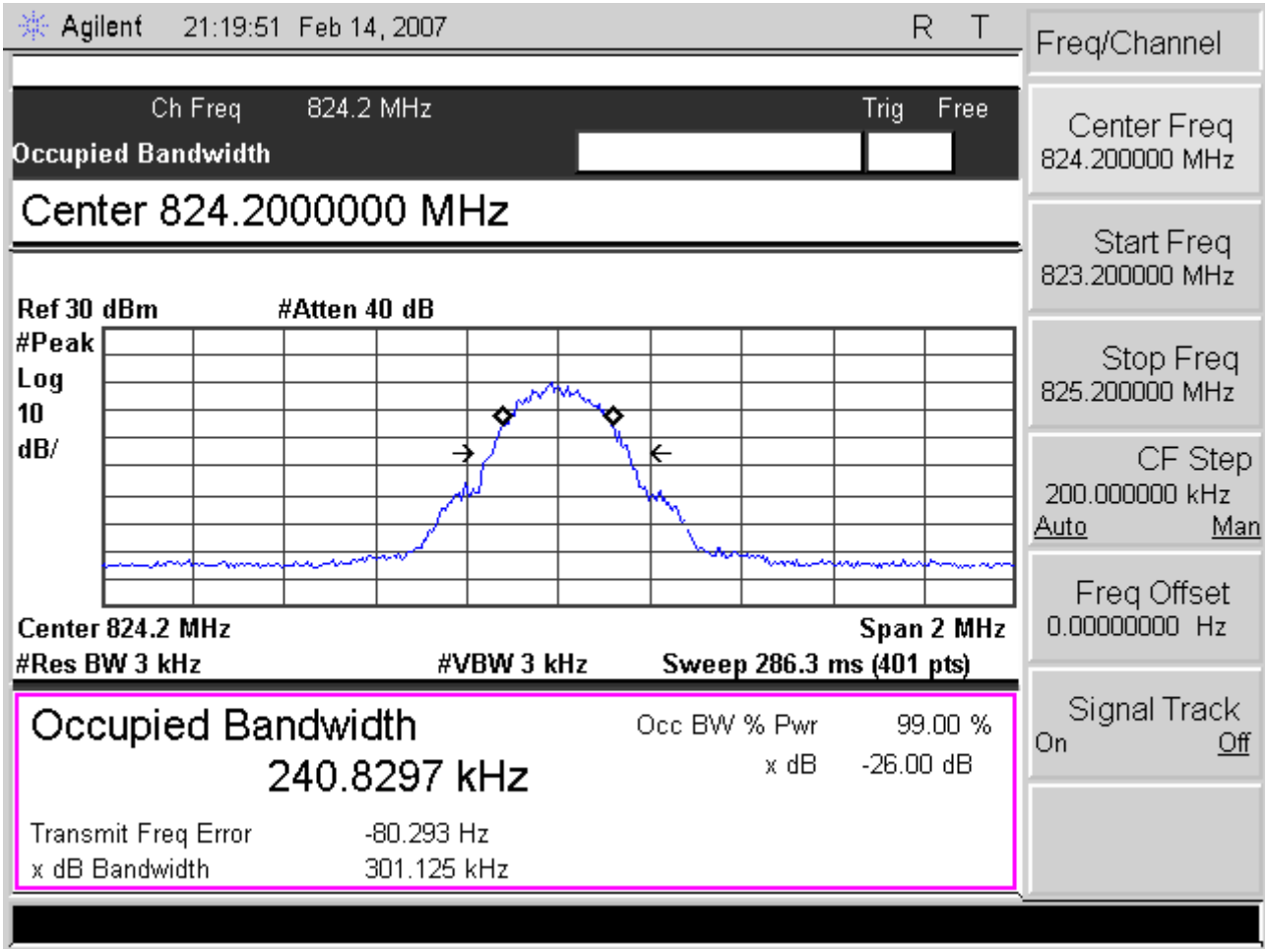
GSM 850		
Channel	**Frequency (MHz)**	**Output Power -26 dBc Bandwidth (kHz)**
128	824.2	**240.8297**
190	836.6	**246.2382**
251	848.8	**243.6852**
RB:3KHz , VBW:3KHz		

GSM 850 + GPRS		
Channel	**Frequency (MHz)**	**Output Power -26 dBc Bandwidth (kHz)**
128	824.2	**241.1884**
190	836.6	**244.7805**
251	848.8	**239.6288**
RB:3KHz , VBW:3KHz		

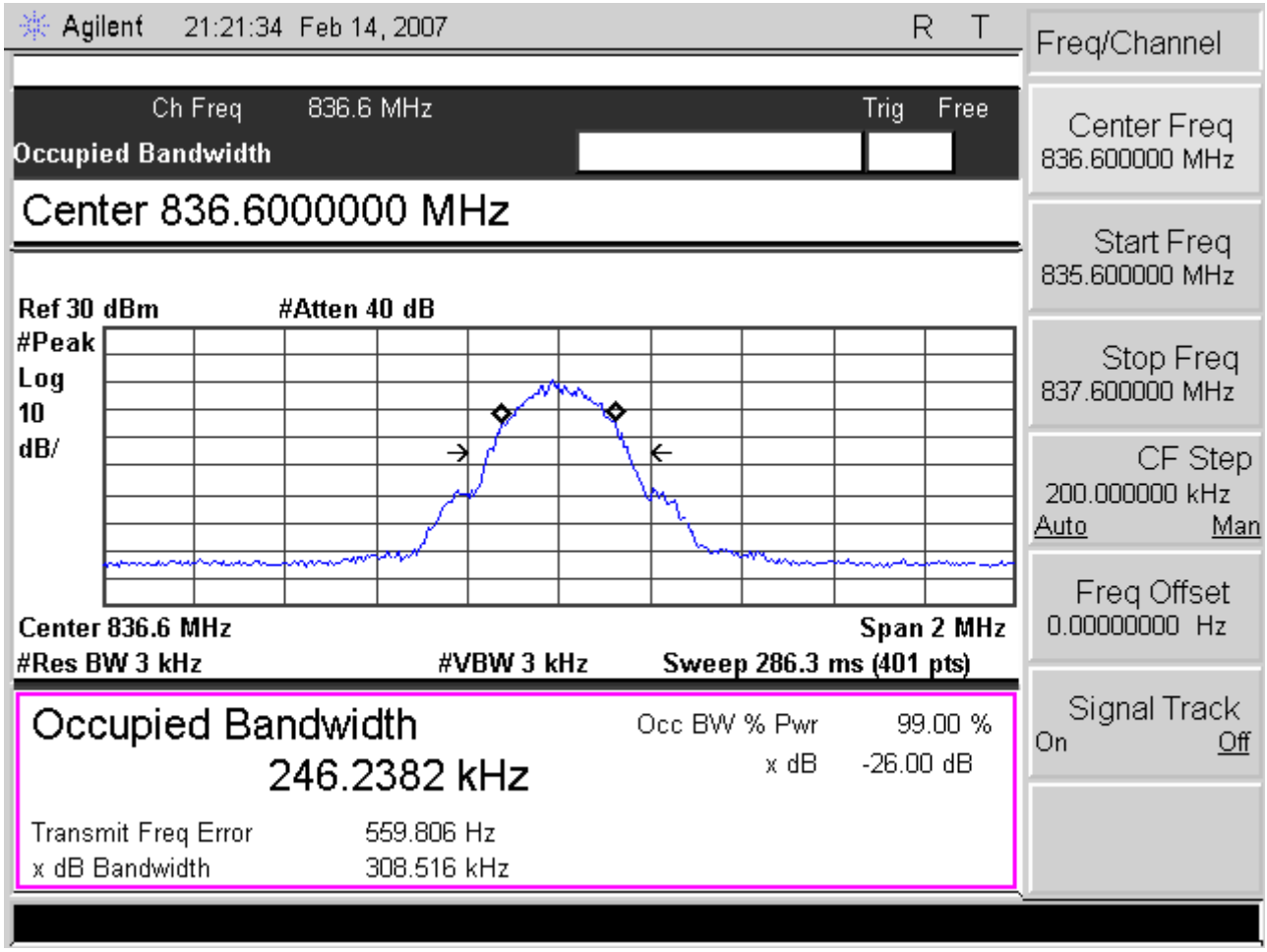
PCS 1900		
Channel	**Frequency (MHz)**	**Output Power -26 dBc Bandwidth (kHz)**
512	1850.2	**240.9125**
661	1880	**239.9381**
810	1909.8	**239.0410**
RB:3KHz , VBW:3KHz		

PCS 1900 + GPRS		
Channel	**Frequency (MHz)**	**Output Power -26 dBc Bandwidth (kHz)**
512	1850.2	**243.7540**
661	1880	**240.5418**
810	1909.8	**241.8186**
RB:3KHz , VBW:3KHz		

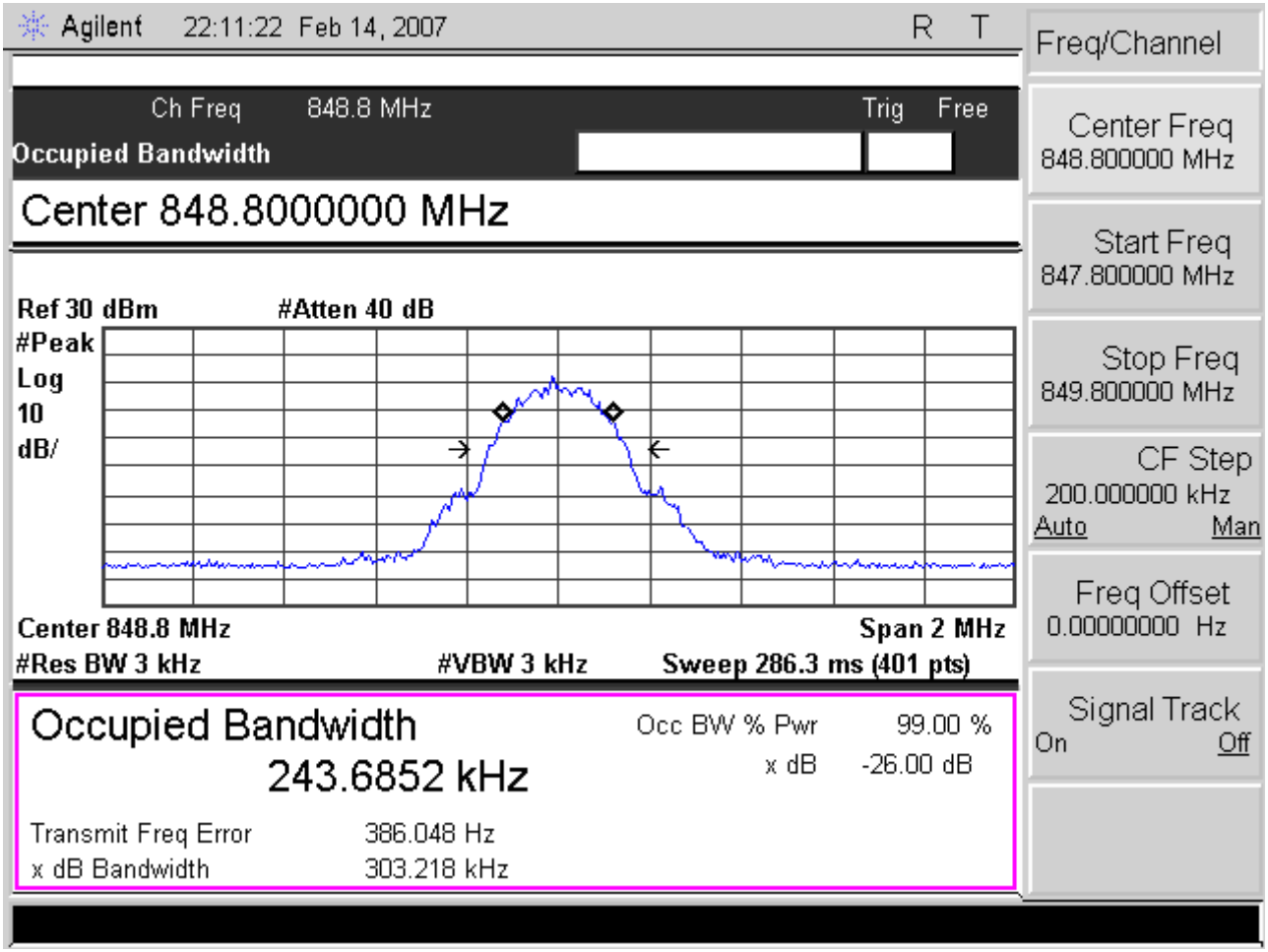
Test Mode: GSM 850 CH128 99% Occupied Bandwidth



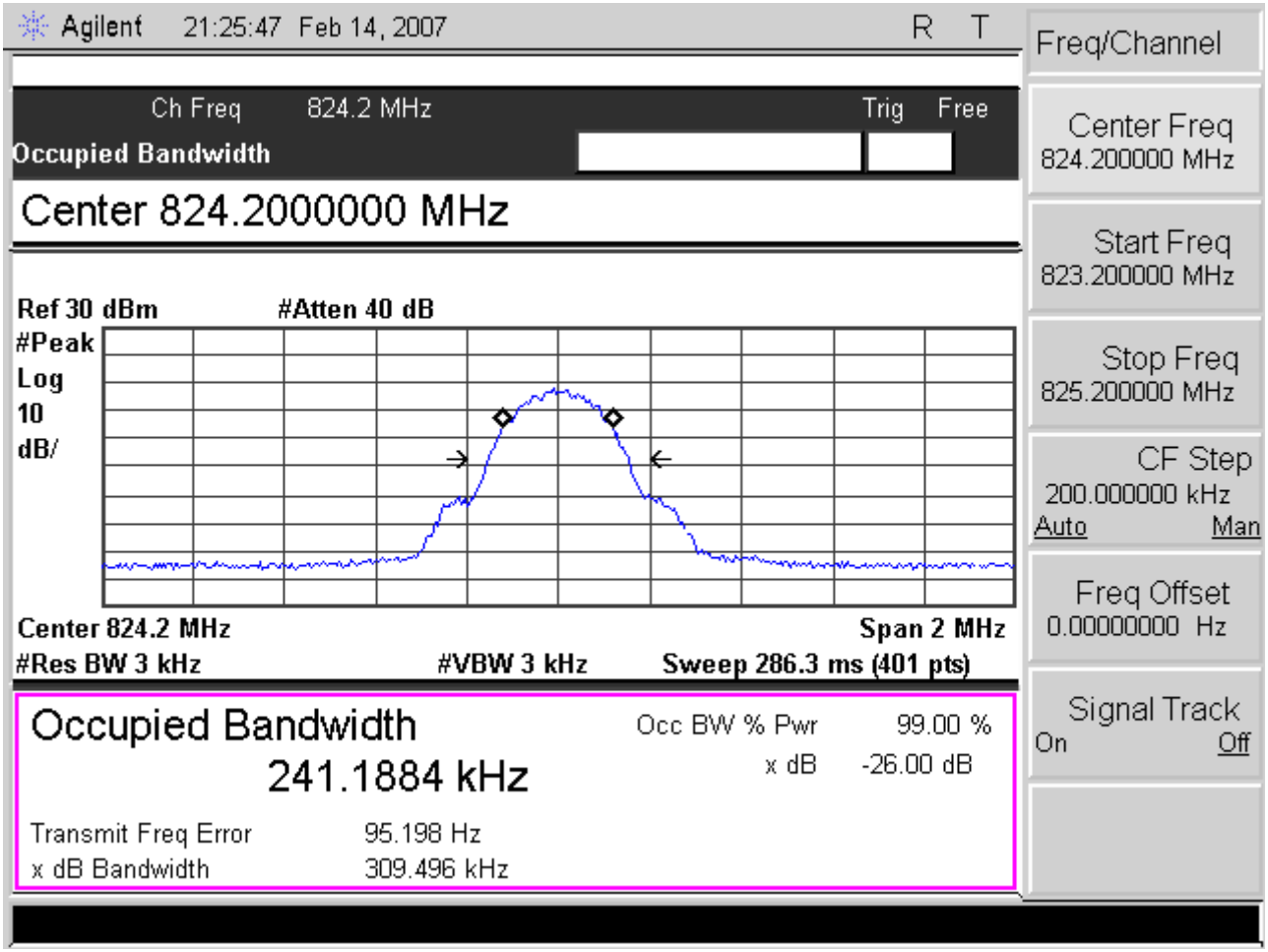
Test Mode: GSM 850 CH190 99% Occupied Bandwidth



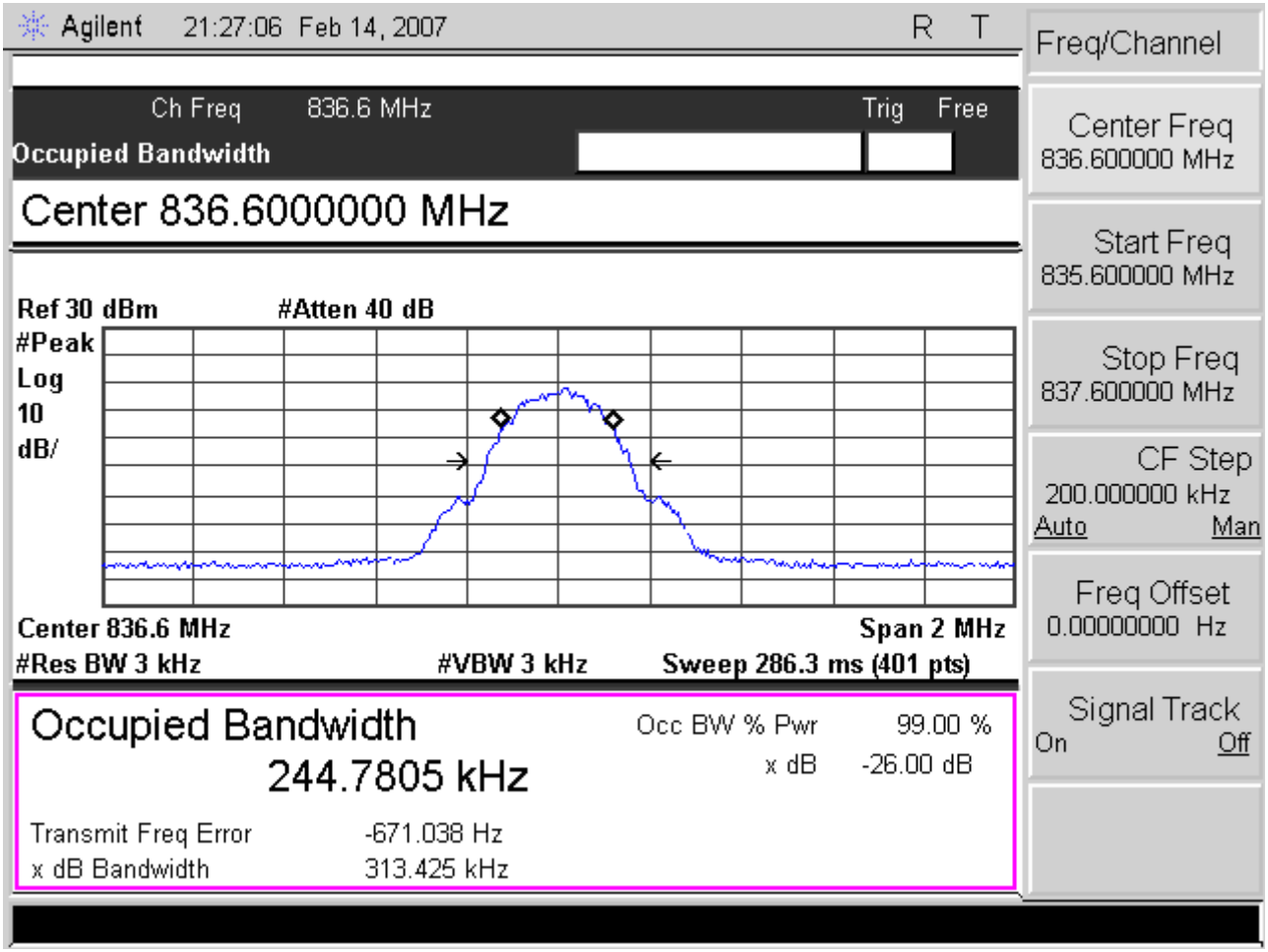
Test Mode: GSM 850 CH251 99% Occupied Bandwidth



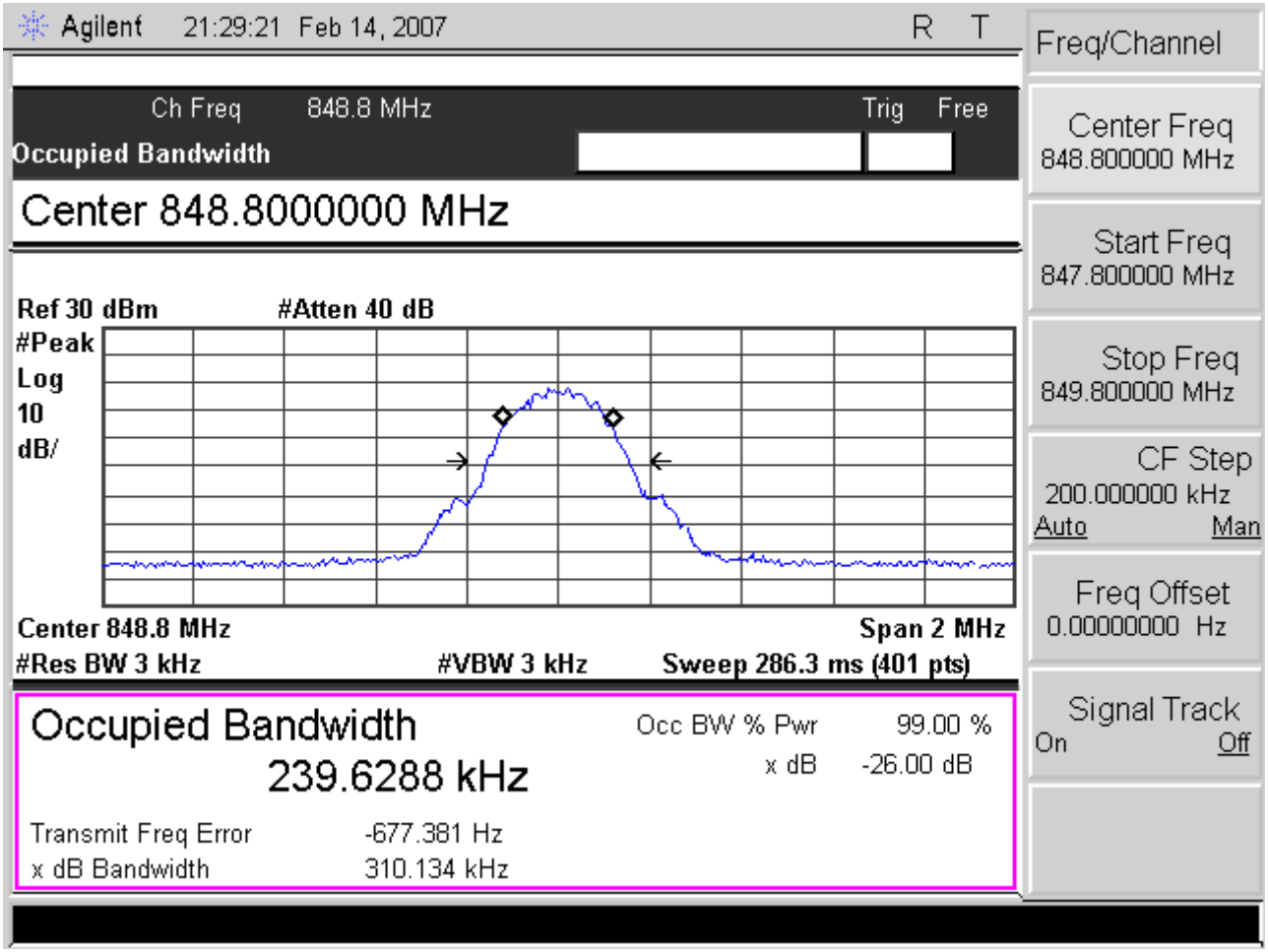
Test Mode: GSM 850 + GPRS CH128 99% Occupied Bandwidth



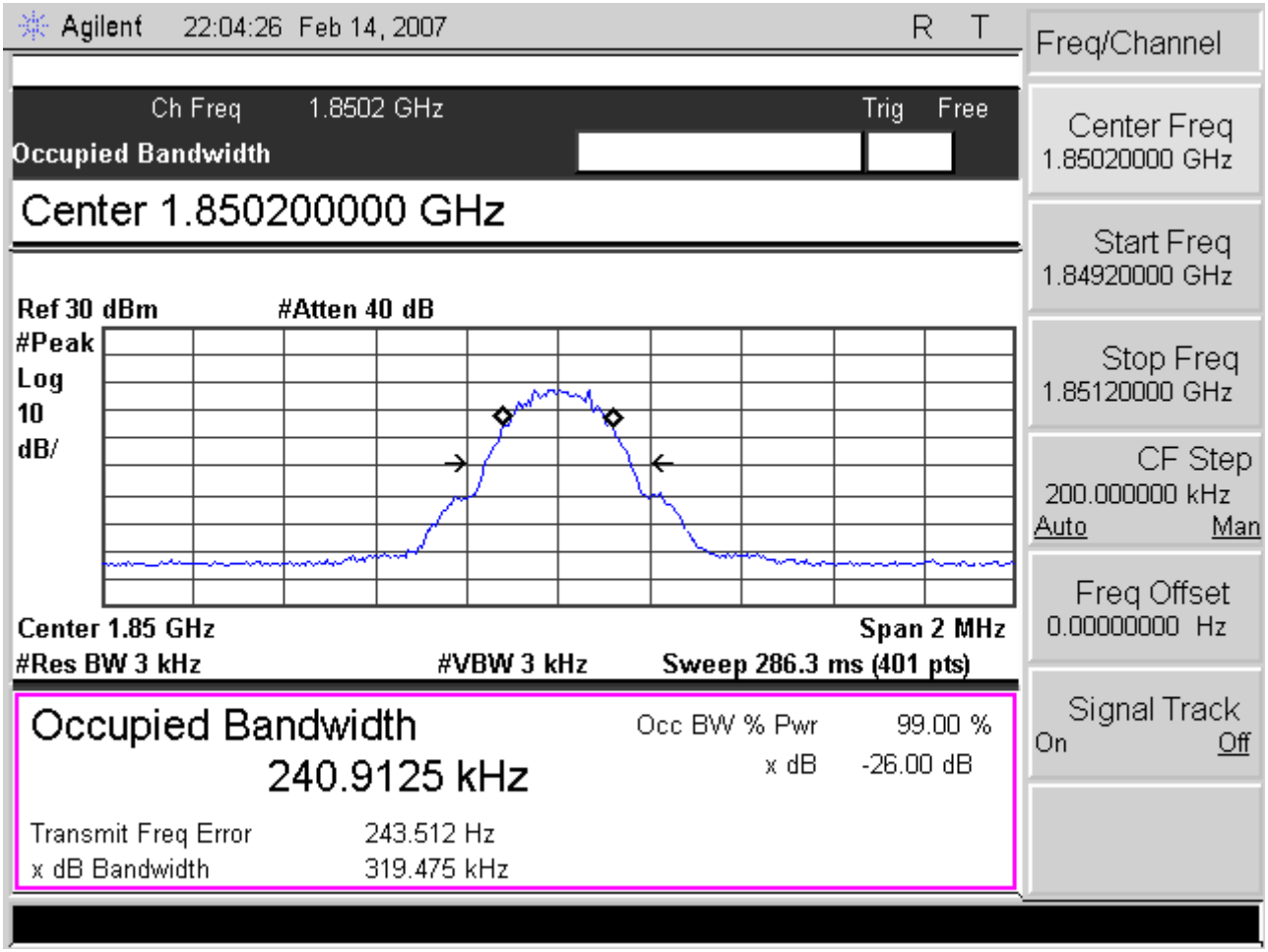
Test Mode: GSM 850 + GPRS CH190 99% Occupied Bandwidth



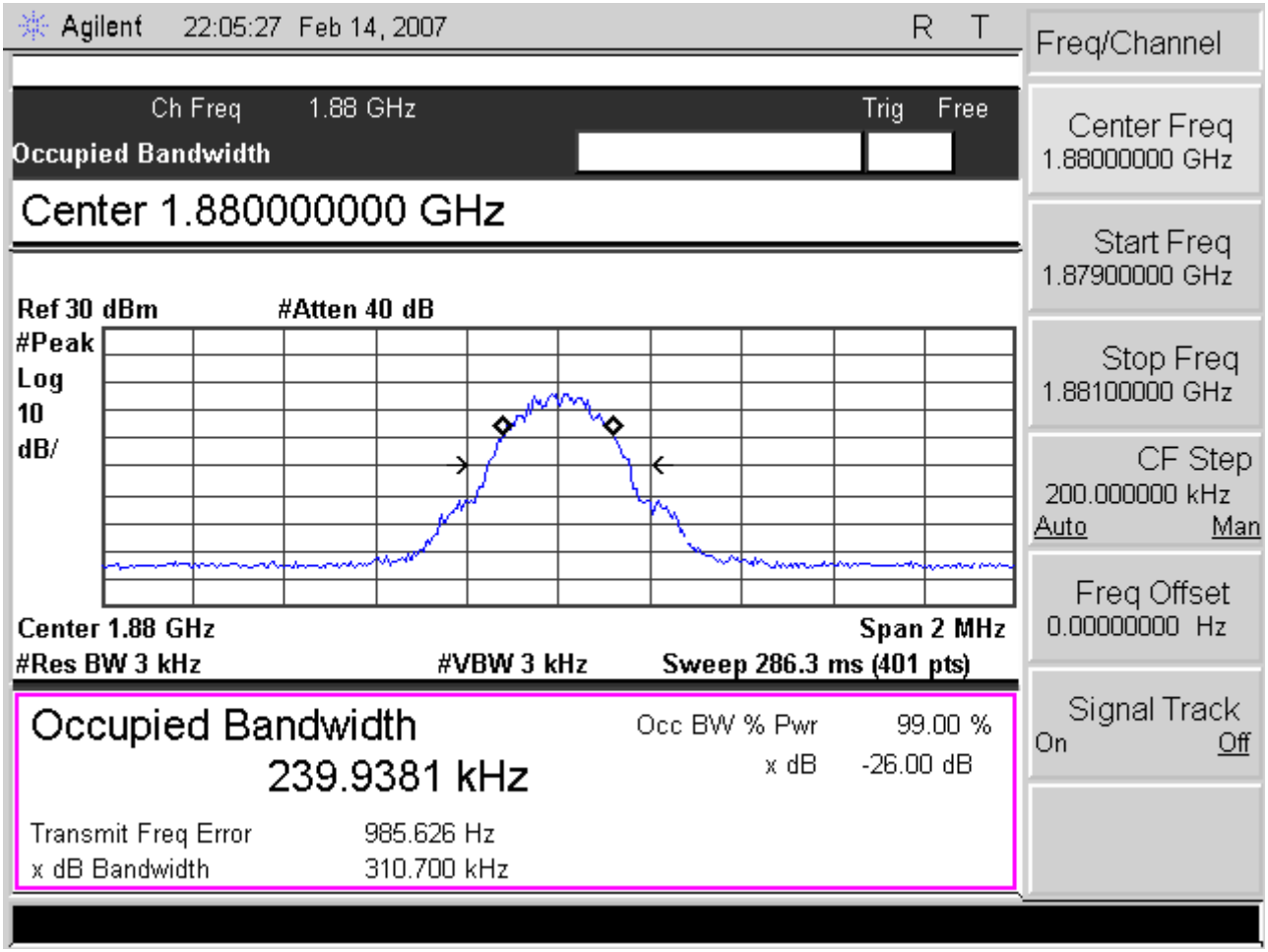
Test Mode: GSM 850 + GPRS CH251 99% Occupied Bandwidth



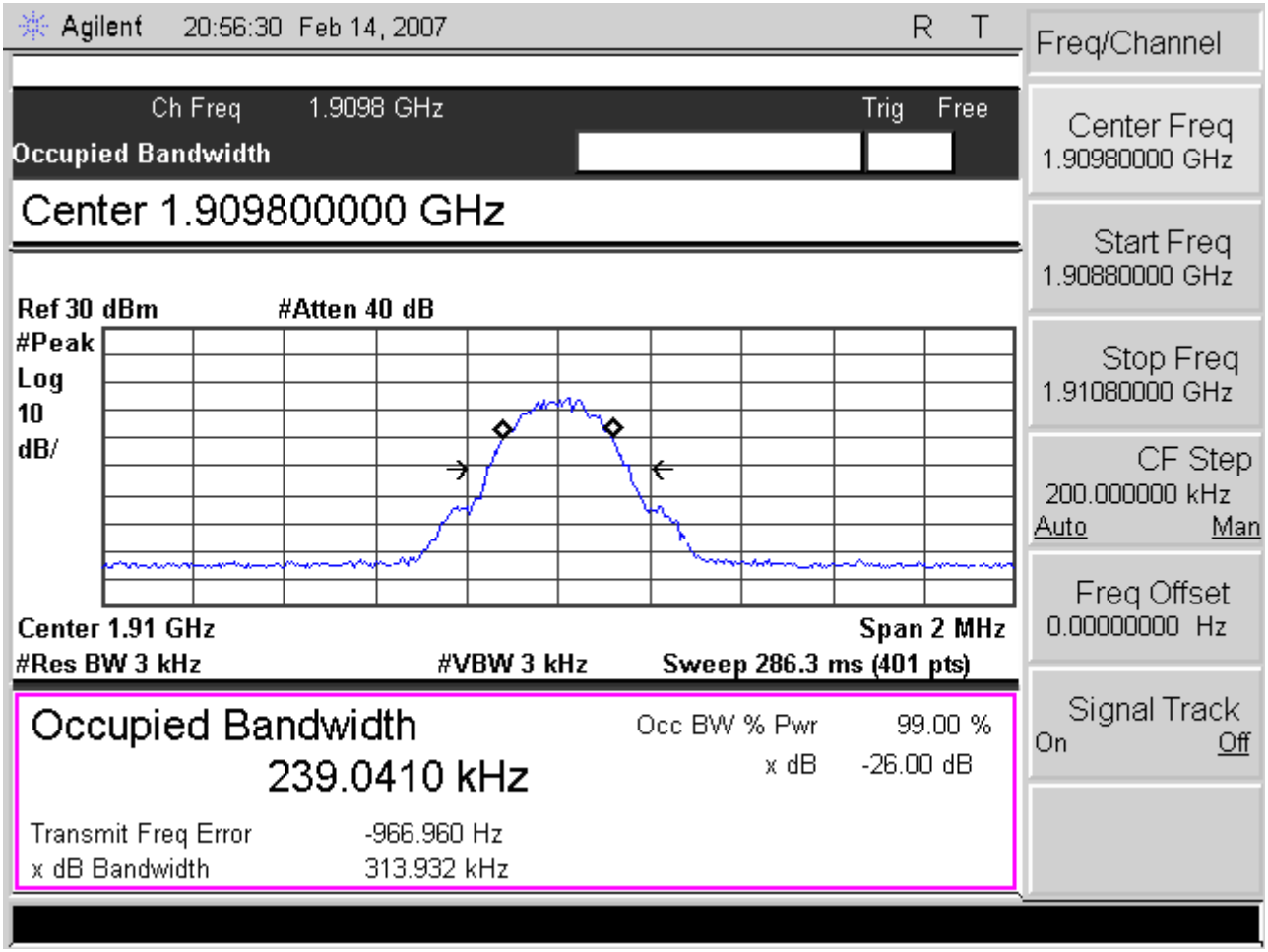
Test Mode: PCS 1900 CH512 99% Occupied Bandwidth



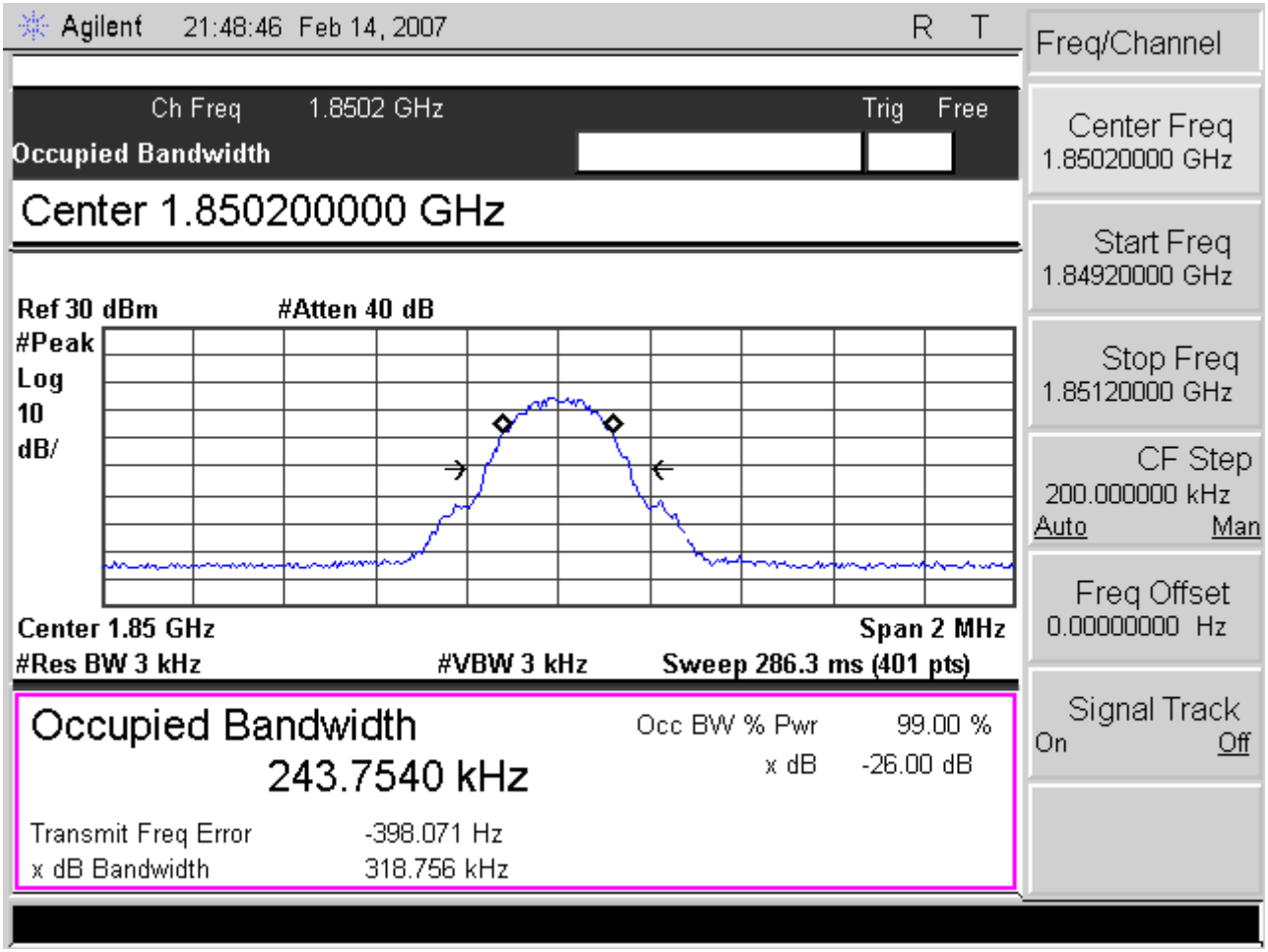
Test Mode: PCS 1900 CH661 99% Occupied Bandwidth



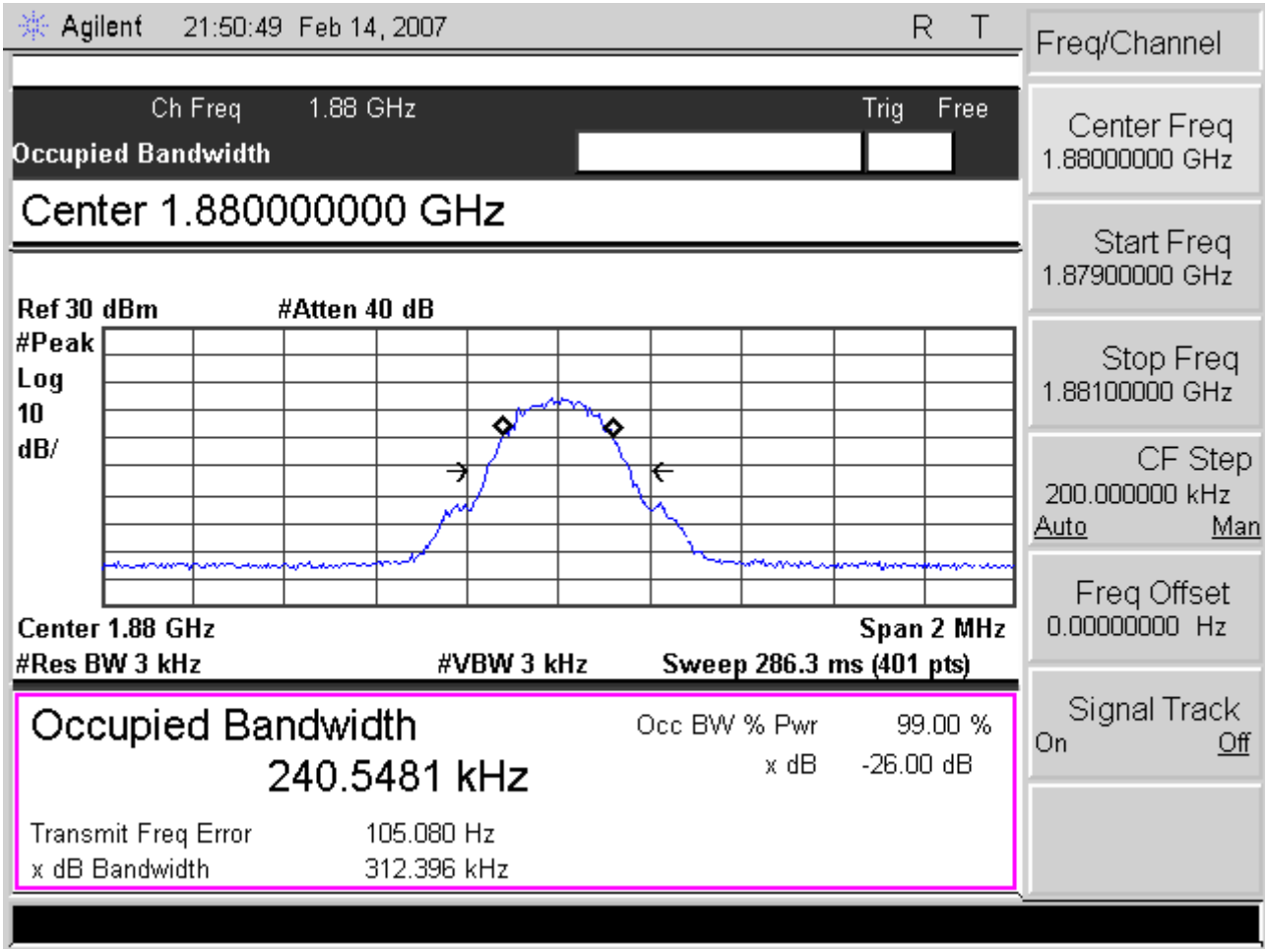
Test Mode: PCS 1900 CH810 99% Occupied Bandwidth



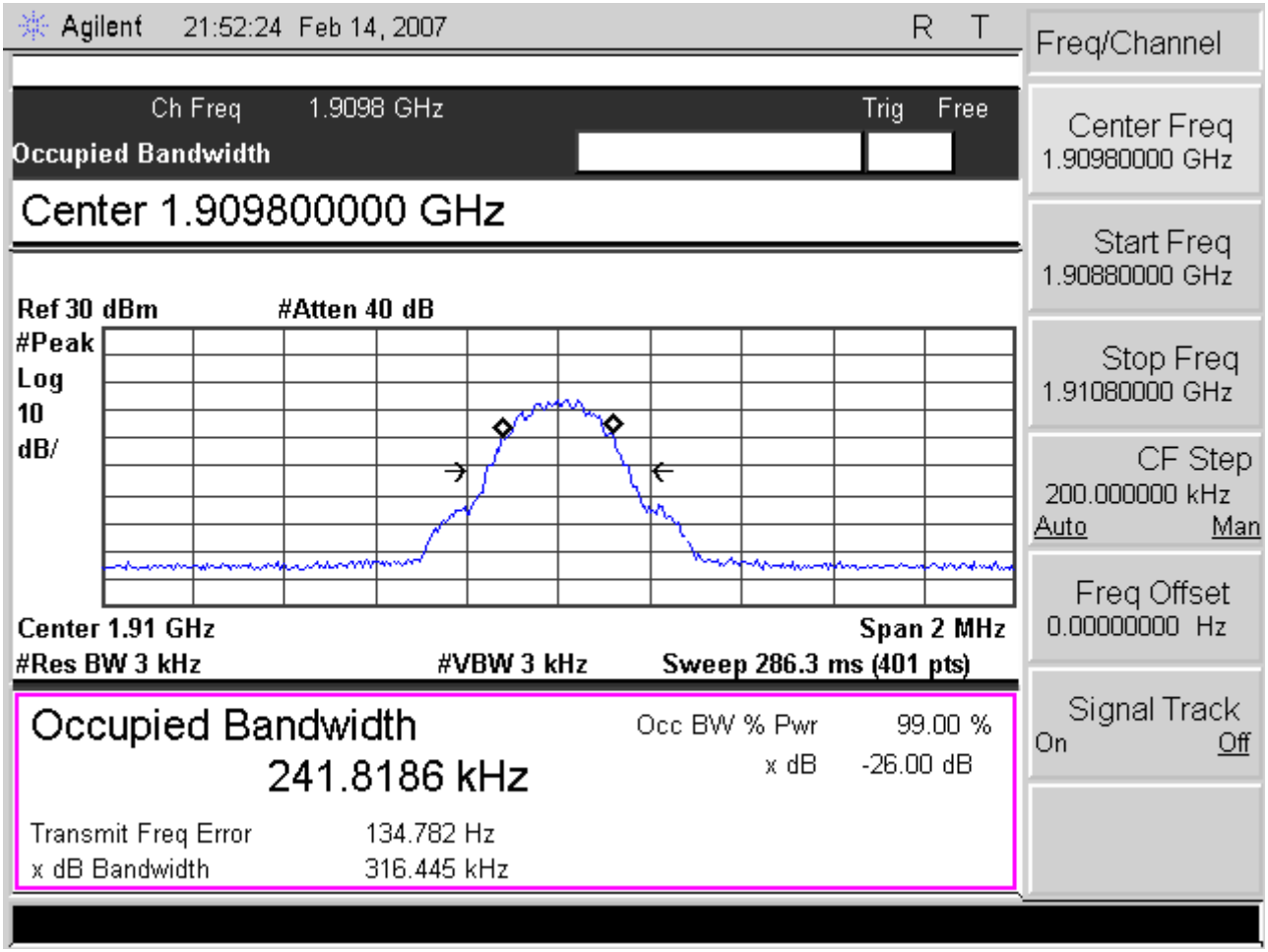
Test Mode: PCS 1900 + GPRS CH512 99% Occupied Bandwidth



Test Mode: PCS 1900 + GPRS CH661 99% Occupied Bandwidth



Test Mode: PCS 1900 + GPRS CH810 99% Occupied Bandwidth



4.4.5 Bandedge Test Result

GSM 850			
Lower Band Edge			
Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)
128	823.9900	-14.75	-13
Higher Band Edge			
Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)
251	849.0175	-14.85	-13

GSM 850 + GPRS			
Lower Band Edge			
Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)
128	823.3825	-18.95	-13
Higher Band Edge			
Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)
251	849.0225	-16.16	-13

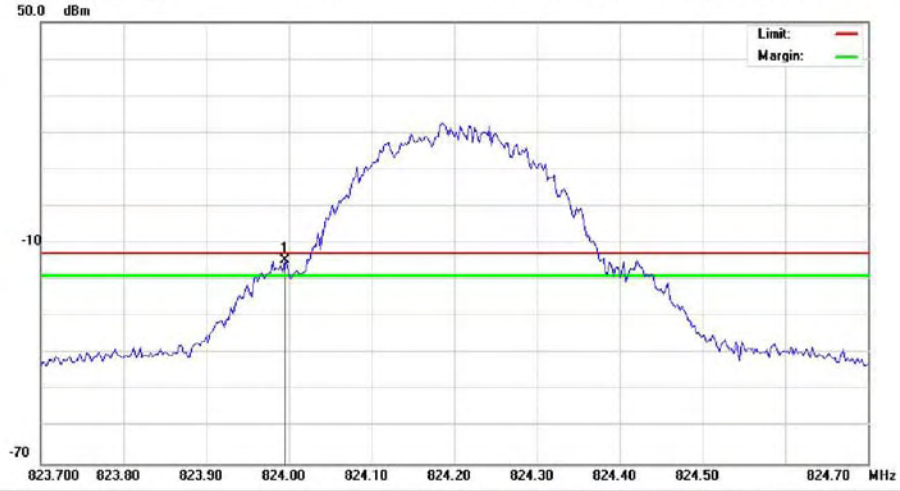
PCS 1900			
Lower Band Edge			
Channel	**Frequency (MHz)**	**Bandwidth (dBm)**	**Limit (dBm)**
512	1849.995	**-18.20**	-13
Higher Band Edge			
Channel	**Frequency (MHz)**	**Bandwidth (dBm)**	**Limit (dBm)**
810	1910.015	**-16.96**	-13

PCS 1900 + GPRS			
Lower Band Edge			
Channel	**Frequency (MHz)**	**Bandwidth (dBm)**	**Limit (dBm)**
128	1849.995	**-18.19**	-13
Higher Band Edge			
Channel	**Frequency (MHz)**	**Bandwidth (dBm)**	**Limit (dBm)**
251	1910.015	**-18.20**	-13

Test Mode: GSM 850 CH128 Low Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode:
Note: CH128(824.2MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	823.9950	-27.93	13.18	-14.75	-13.0	-1.75	peak	

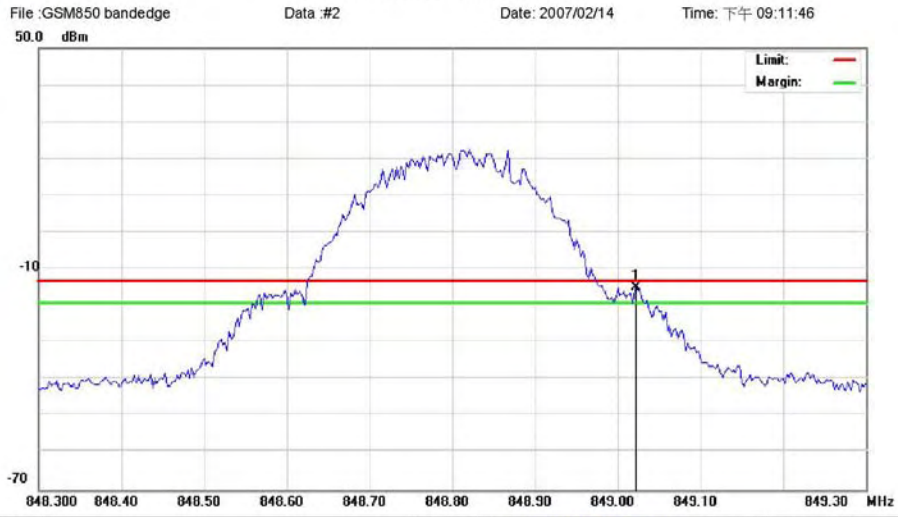
*:Maximum data x:Over limit !:over margin •Reference Only

File :GSM850 bandedge\Data :#1 Page: 1 Engineer Signature:

Test Mode: GSM 850 CH251 High Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode:
Note: CH251(848.8MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	849.0225	-28.10	13.25	-14.85	-13.0	-1.85	peak	

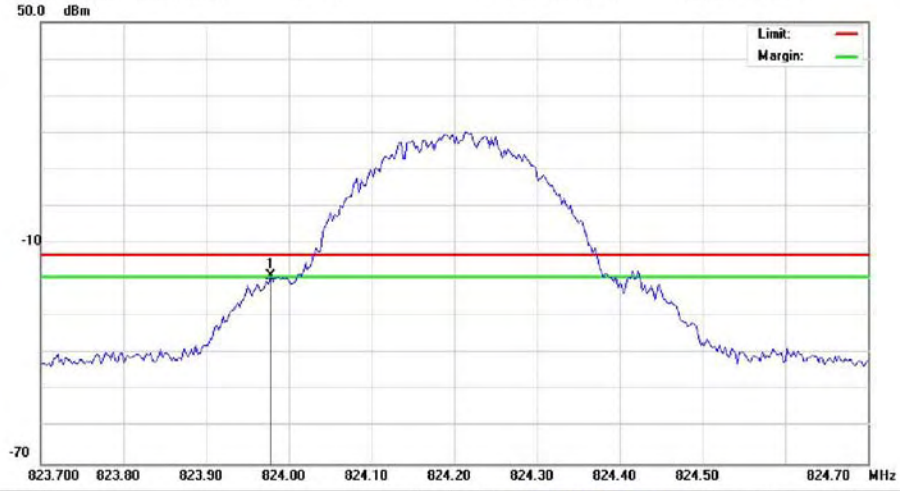
*:Maximum data x:Over limit !:over margin •Reference Only

File :GSM850 bandedge\Data :#2 Page: 1 Engineer Signature:

Test Mode: GSM 850 + GPRS CH128 Low Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode: GPRS
Note: CH128(824.2MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	823.9775	-32.13	13.18	-18.95	-13.0	-5.95	peak	

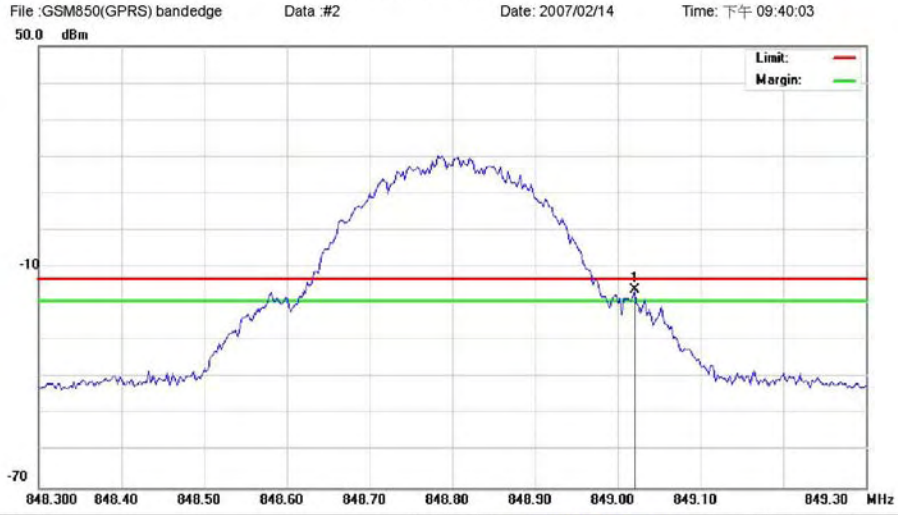
*:Maximum data x:Over limit !:over margin •Reference Only

File :GSM850(GPRS) bandedge\Data :#1 Page: 1 Engineer Signature:

Test Mode: GSM 850 + GPRS CH251 High Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode: GPRS
Note: CH251(848.8MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	849.0200	-29.41	13.25	-16.16	-13.0	-3.16	peak	

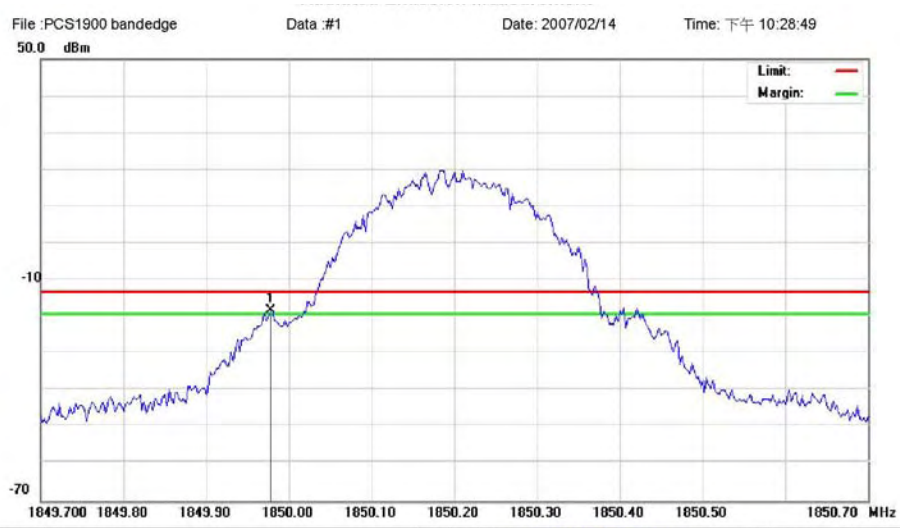
*:Maximum data x:Over limit !:over margin •Reference Only

File :GSM850(GPRS) bandedge\Data :#2 Page: 1 Engineer Signature:

Test Mode: PCS 1900 CH512 Low Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode:
Note: CH512(1850.2MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1849.977	-22.45	4.25	-18.20	-13.0	-5.20	peak	

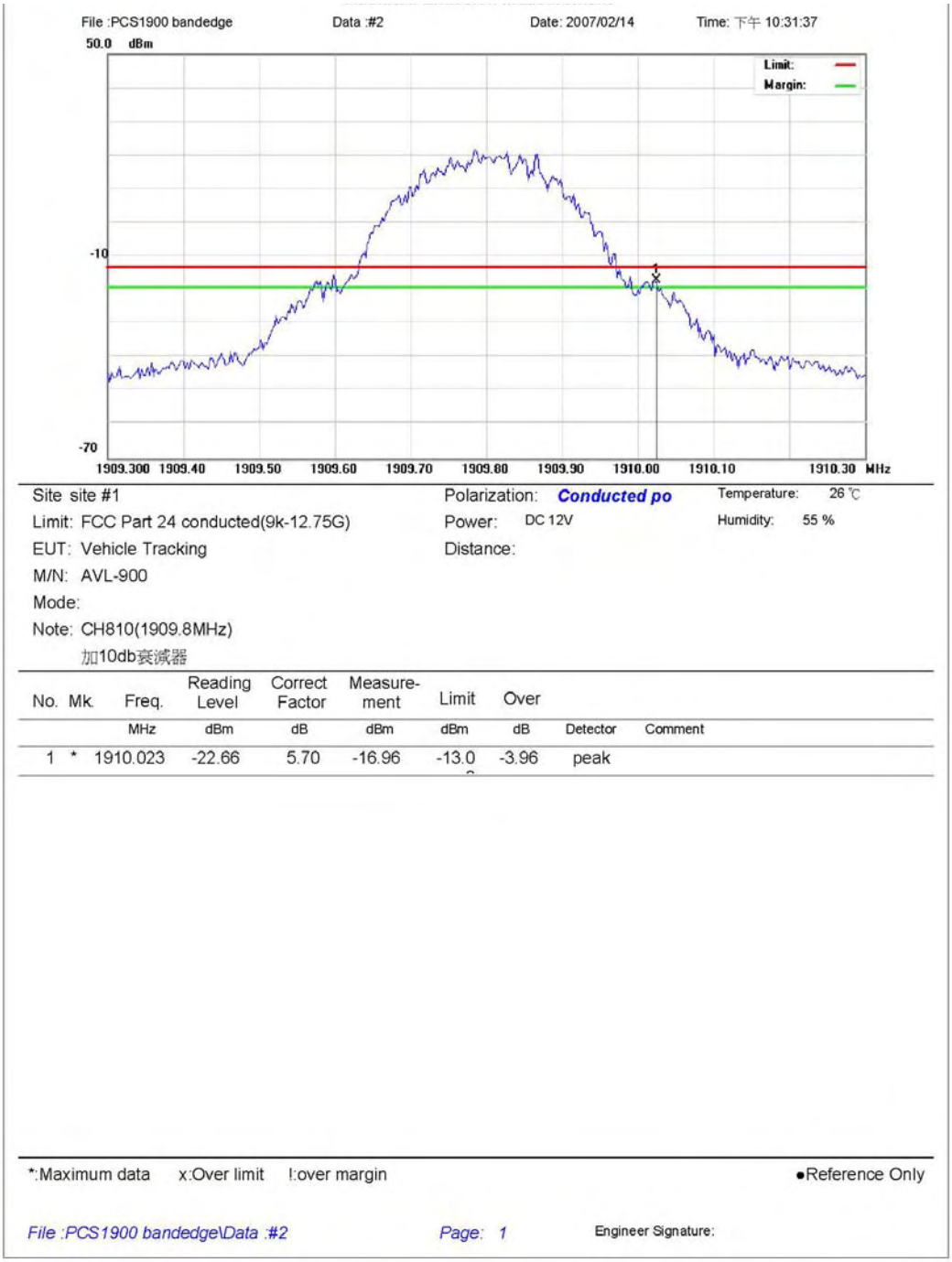
*:Maximum data x:Over limit !:over margin •Reference Only

File :PCS1900 bandedge\Data :#1 Page: 1 Engineer Signature:

Test Mode: PCS 1900 CH810 High Band Edge

Power State: Normal

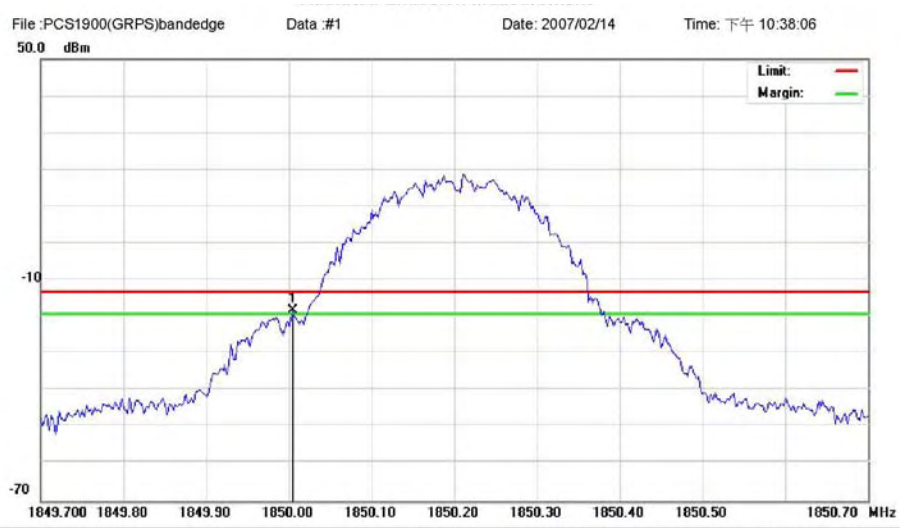
RB=3kHz ; VB=3kHz



Test Mode: PCS 1900 +GPRS CH512 Low Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode: GPRS
Note: CH512(1850.2MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1850.005	-22.45	4.26	-18.19	-13.0	-5.19	peak	

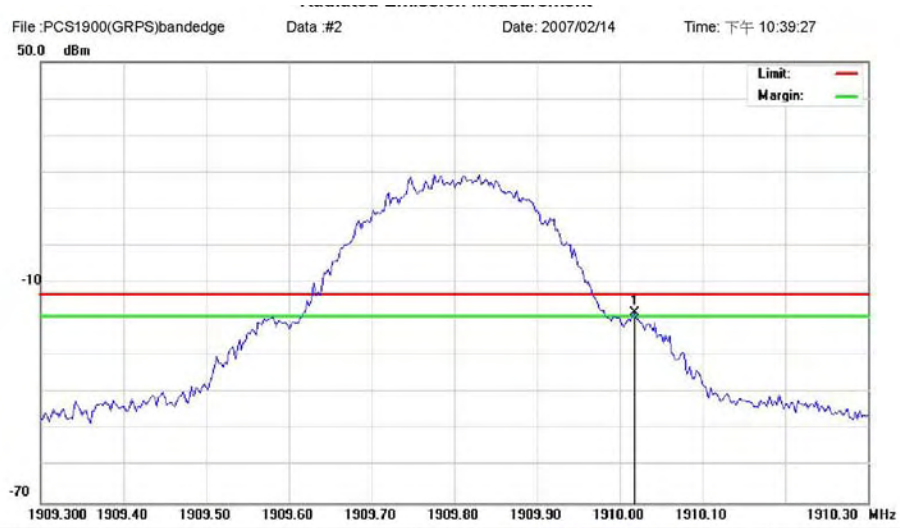
*:Maximum data x:Over limit !:over margin •Reference Only

File :PCS1900(GRPS)bandedge\Data :#1 Page: 1 Engineer Signature:

Test Mode: PCS 1900 +GPRS CH810 High Band Edge

Power State: Normal

RB=3kHz ; VB=3kHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Vehicle Tracking
M/N: AVL-900
Mode: GPRS
Note: CH810(1909.8MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1910.017	-23.90	5.70	-18.20	-13.0	-5.20	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :PCS1900(GRPS)bandedge\Data :#2 Page: 1 Engineer Signature:

4.5 Conducted Emission

4.5.1 Measurement Instruments

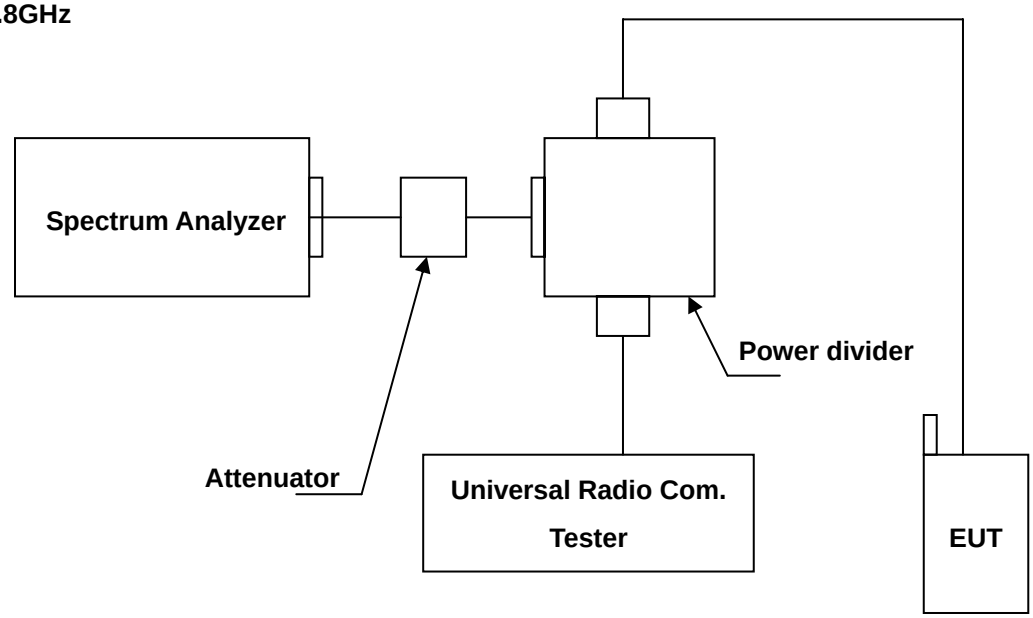
As described in chapter 5 of this test report.

4.5.2 Test Procedure

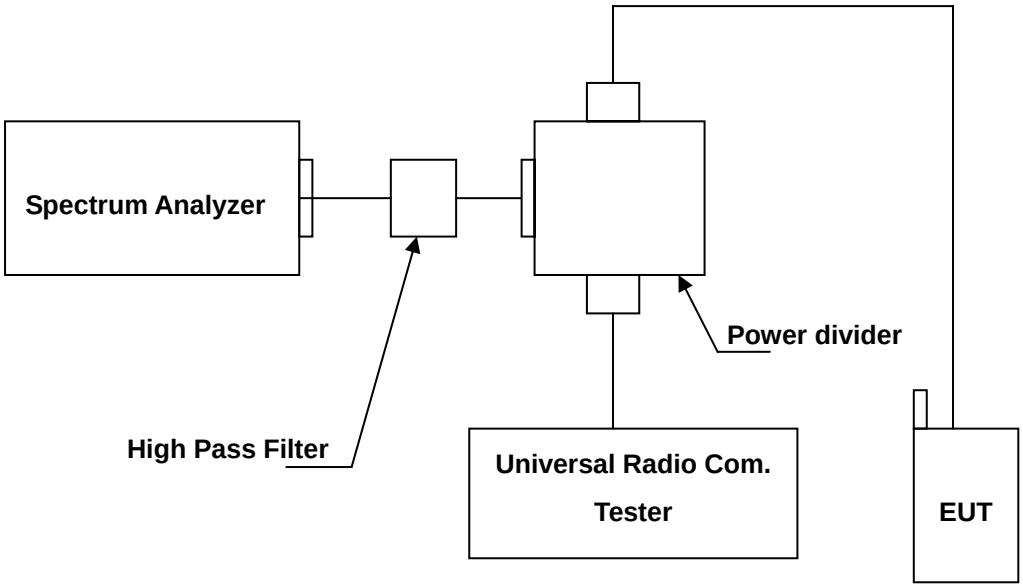
1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The middle channel for the highest RF power within the transmitting frequency was measured.
3. The conducted spurious emission for the whole frequency range was taken.
4. Test setting at GSM 850 RB>100 kHz, VB>100 kHz; PCS 1900 RB>1MHz, VB>1MHz.

4.5.3 Test Setup Layout

Below 2.8GHz



Above 2.8GHz



4.5.4 Test Result

4.5.4.1 GSM 850 Test Result

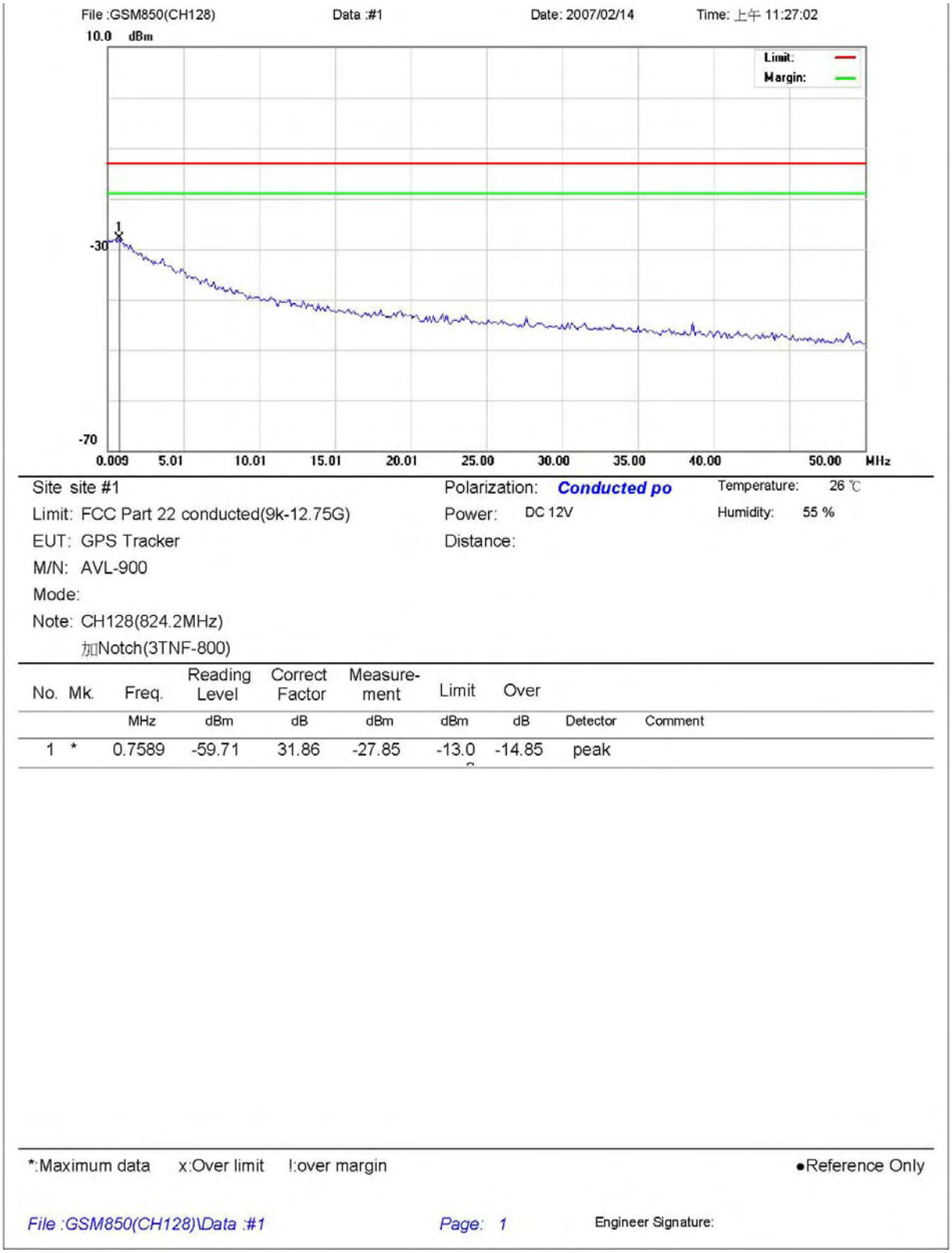
Applicant	: GoPass Technology Corp.
Model No	: AVL-900
EUT	: GPS Tracker
Test Mode	: GSM 850 (Low CH128 / Middle CH190 / High CH 251)
Test Date	: 02/14/2007

Please refer to next pager of detail testing data.

Note: Amplitude= Reading Amplitude + Factor (Cable loss + Filter Amplitude= Insertion loss)

(Auto calculate in spectrum analyzer)

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH128(824.2MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

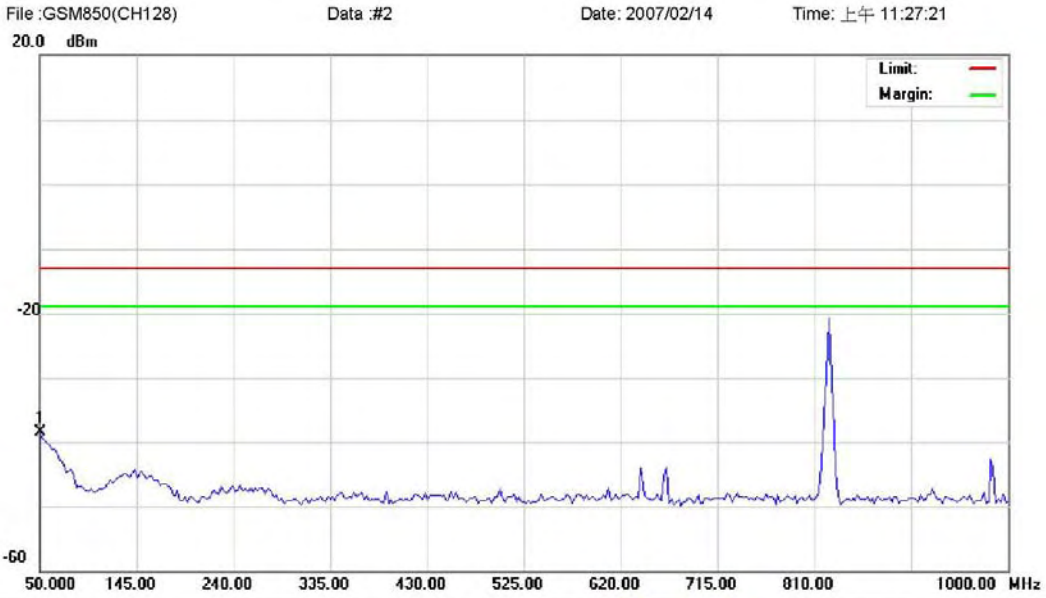
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	0.7589	-59.71	31.86	-27.85	-13.0	-14.85	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH128)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH128(824.2MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

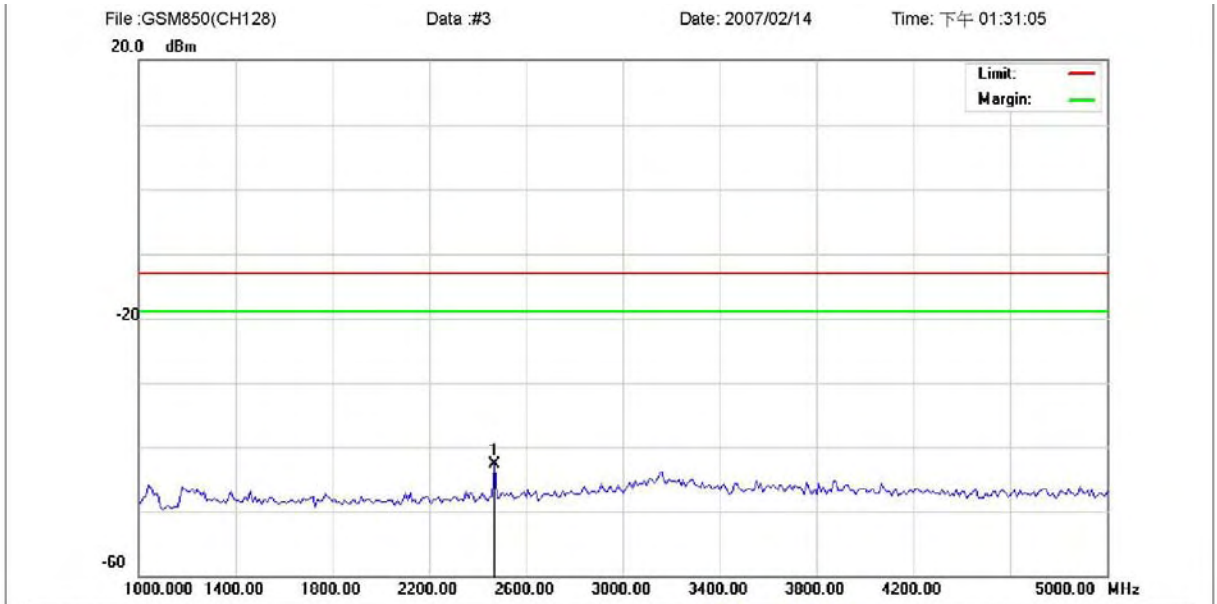
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	50.0000	-53.24	14.69	-38.55	-13.0	-25.55	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH128)\Data :#2 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH128(824.2MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

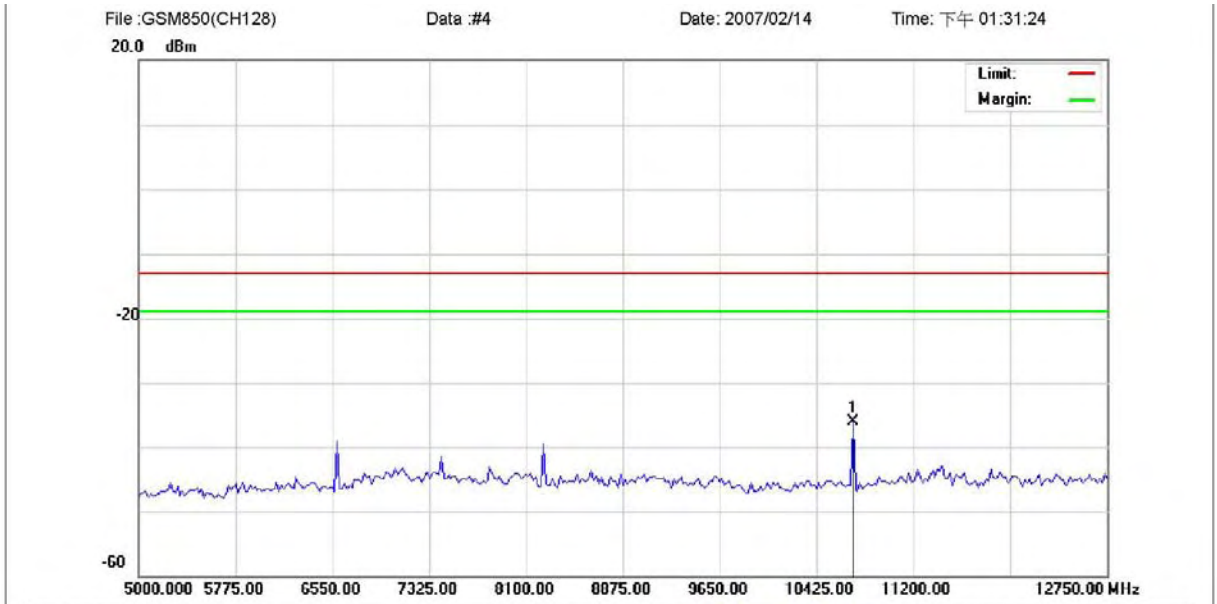
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2470.000	-47.24	4.46	-42.78	-13.0	-29.78	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH128)\Data :#3 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH128(824.2MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

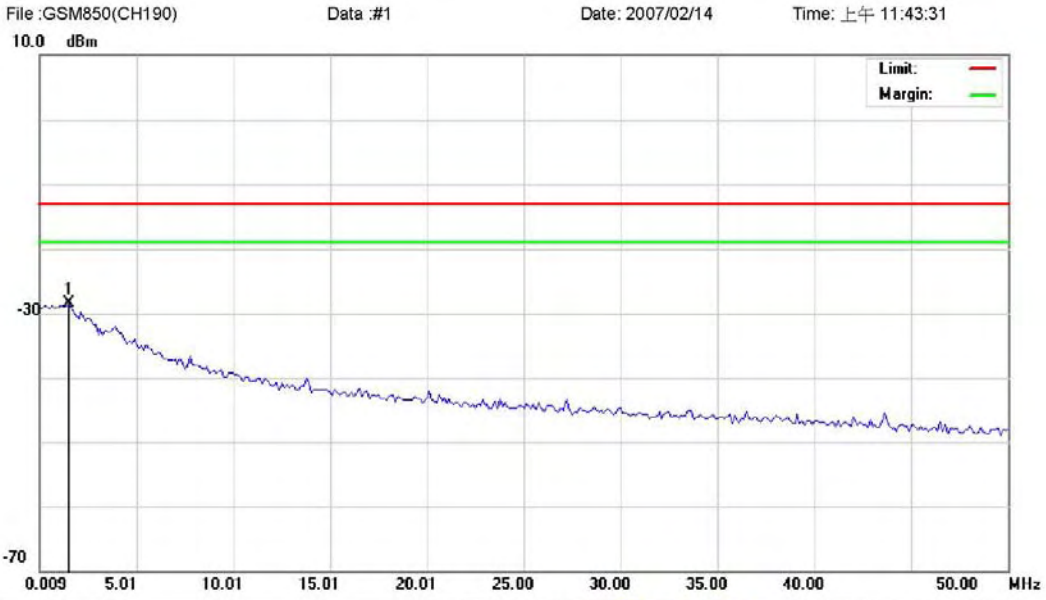
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10715.62	-40.42	4.28	-36.14	-13.0	-23.14	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH128)\Data :#4 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH190(836.6MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

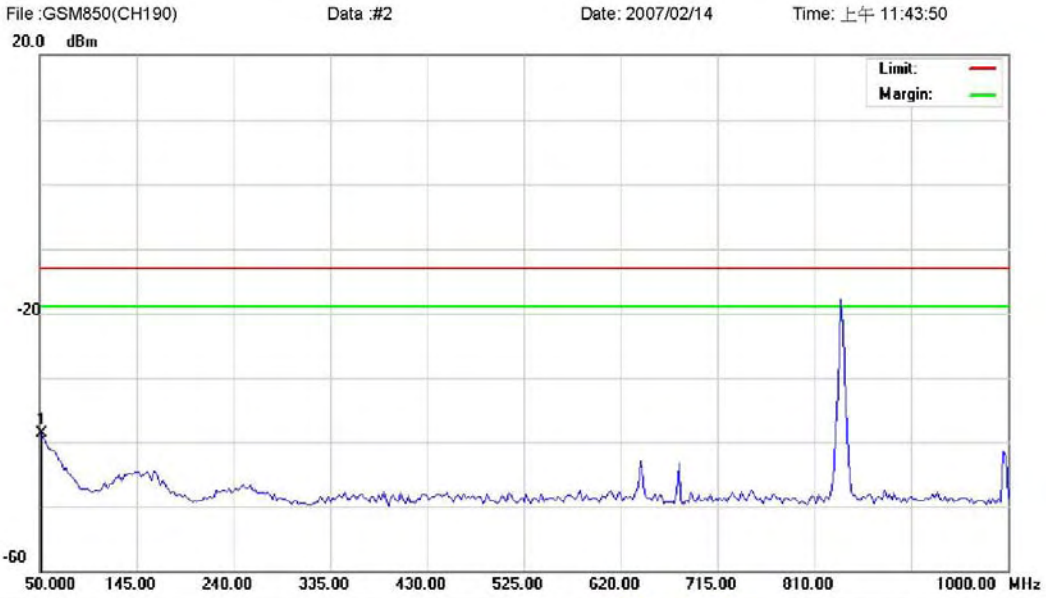
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1.5086	-59.91	31.41	-28.50	-13.0	-15.50	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH190)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH190(836.6MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

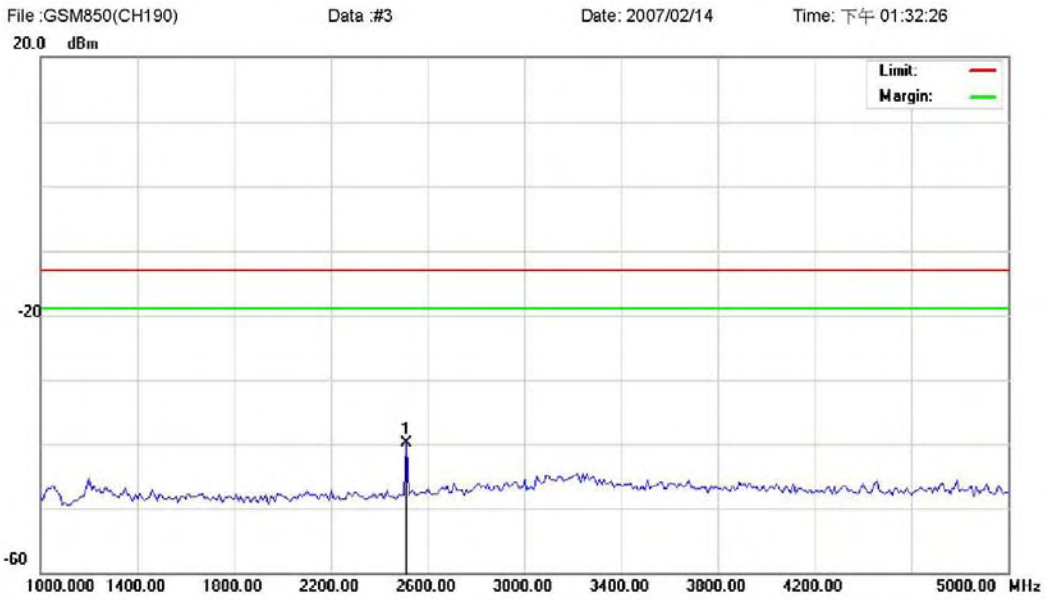
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	52.3750	-52.96	14.27	-38.69	-13.0	-25.69	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH190)\Data :#2 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH190(836.6MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

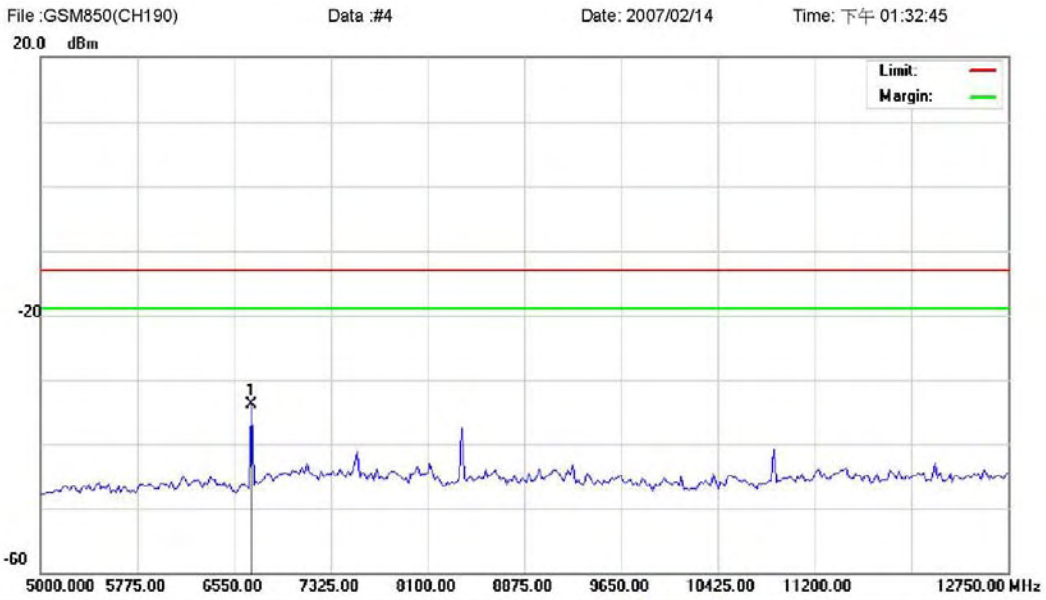
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2510.000	-44.28	4.36	-39.92	-13.0	-26.92	peak	

*:Maximum data x:Over limit !:over margin •Reference Only

File :GSM850(CH190)\Data :#3 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH190(836.6MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

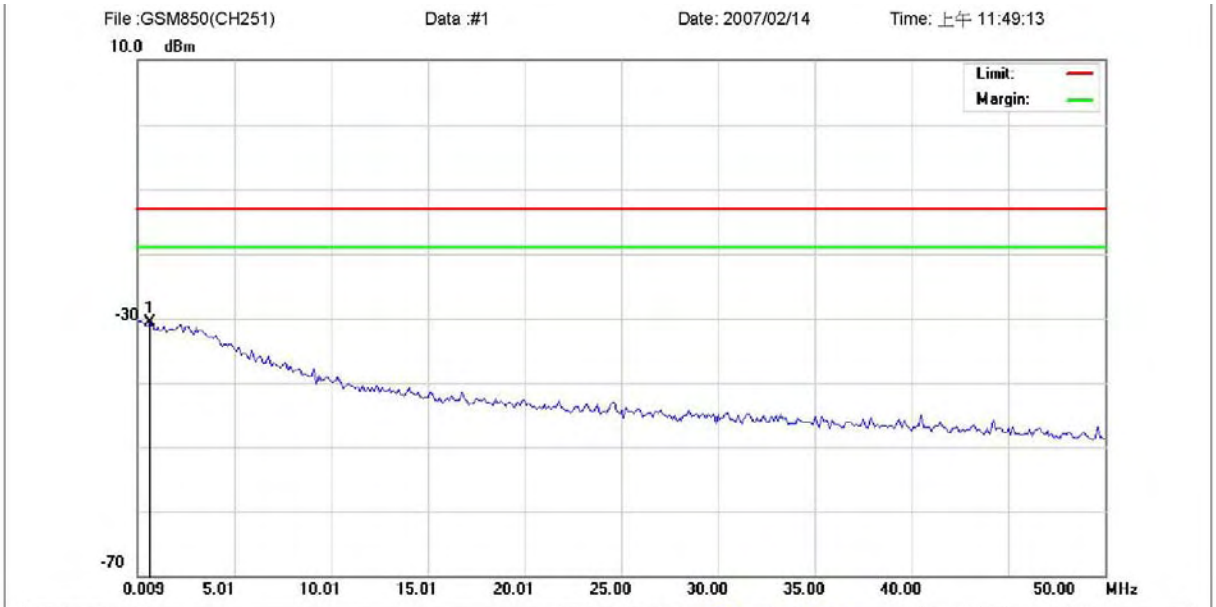
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6685.625	-38.31	4.49	-33.82	-13.0	-20.82	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH190)\Data :#4 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH251(848.8MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

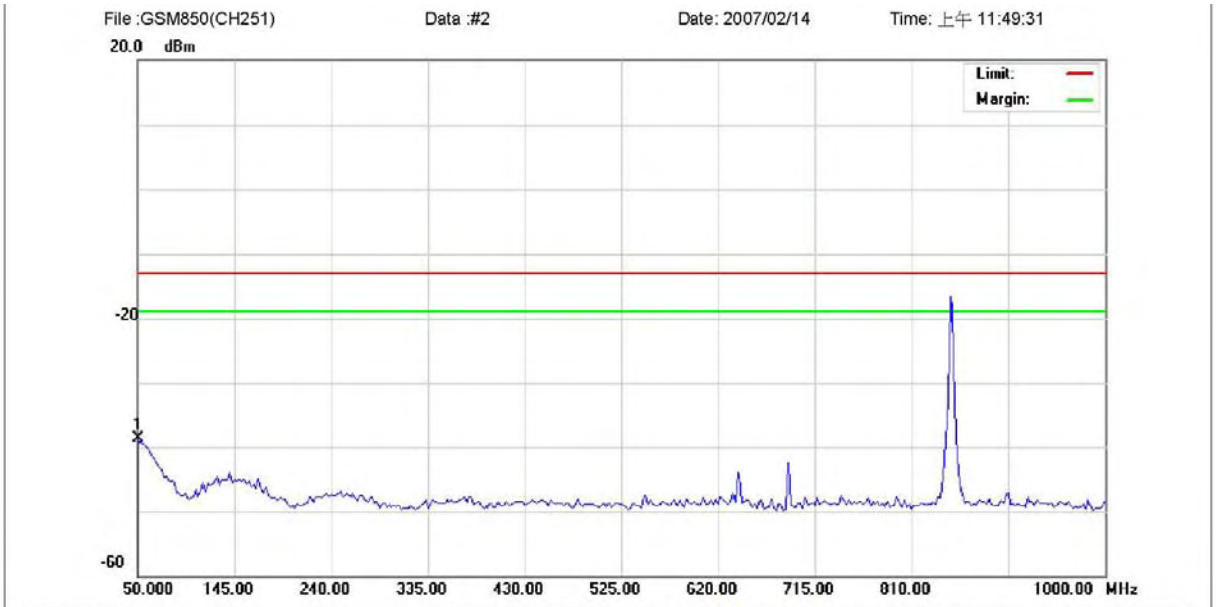
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	0.6339	-62.55	31.92	-30.63	-13.0	-17.63	peak	

*:Maximum data x:Over limit l:over margin ●Reference Only

File :GSM850(CH251)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH251(848.8MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

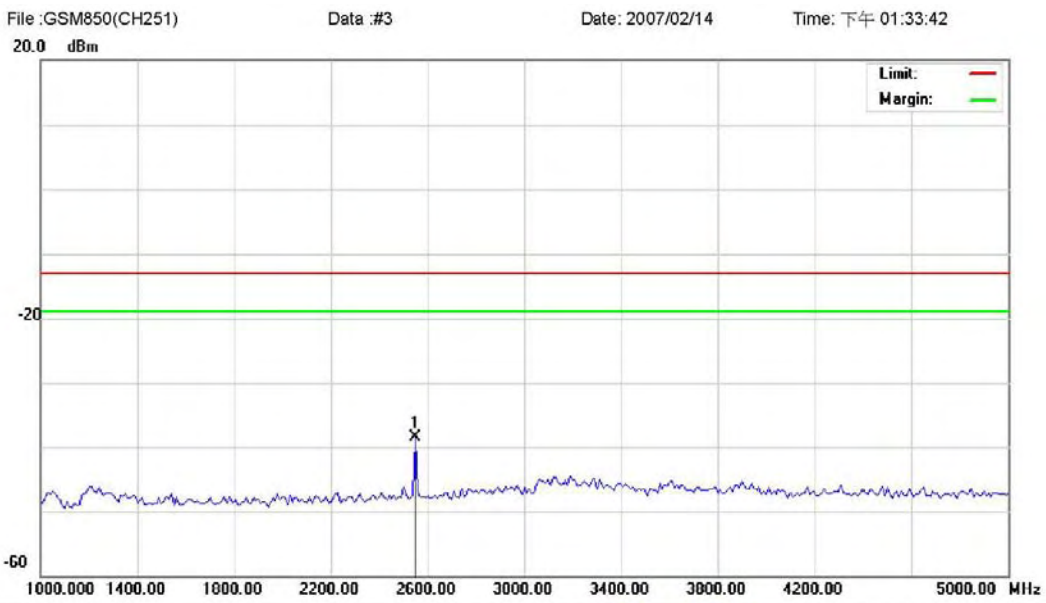
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	50.0000	-53.40	14.69	-38.71	-13.0	-25.71	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(CH251)\Data :#2 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH251(848.8MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

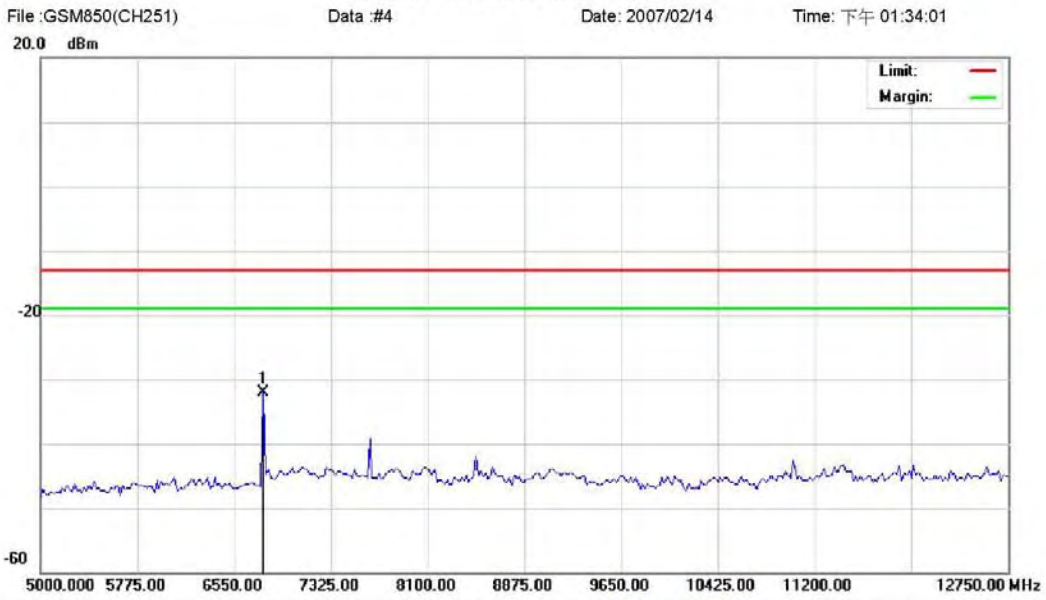
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2550.000	-42.96	4.45	-38.51	-13.0	-25.51	peak	

*:Maximum data x:Over limit l:over margin ●Reference Only

File :GSM850(CH251)\Data :#3 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH251(848.8MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6782.500	-36.97	4.94	-32.03	-13.0	-19.03	peak	

*:Maximum data x:Over limit l:over margin ●Reference Only

File :GSM850(CH251)\Data :#4 Page: 1 Engineer Signature:

4.5.4.2 GSM 850 + GPRS Test Result

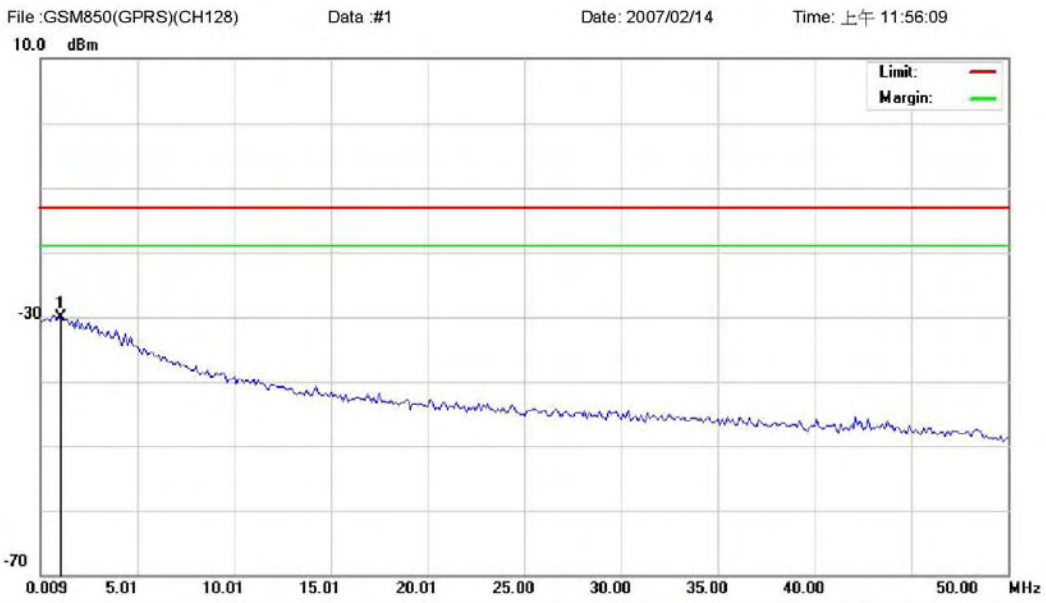
Applicant	: GoPass Technology Corp.
Model No	: AVL-900
EUT	: GPS Tracker
Test Mode	: GSM 850 + GPRS (Low CH128 / Middle CH190 / High CH 251)
Test Date	: 02/14/2007

Please refer to next pager of detail testing data.

Note: Amplitude= Reading Amplitude + Factor (Cable loss + Filter Amplitude= Insertion loss)

(Auto calculate in spectrum analyzer)

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH128(824.2MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1.0087	-62.22	32.05	-30.17	-13.0	-17.17	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH128)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz

Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH128(824.2MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

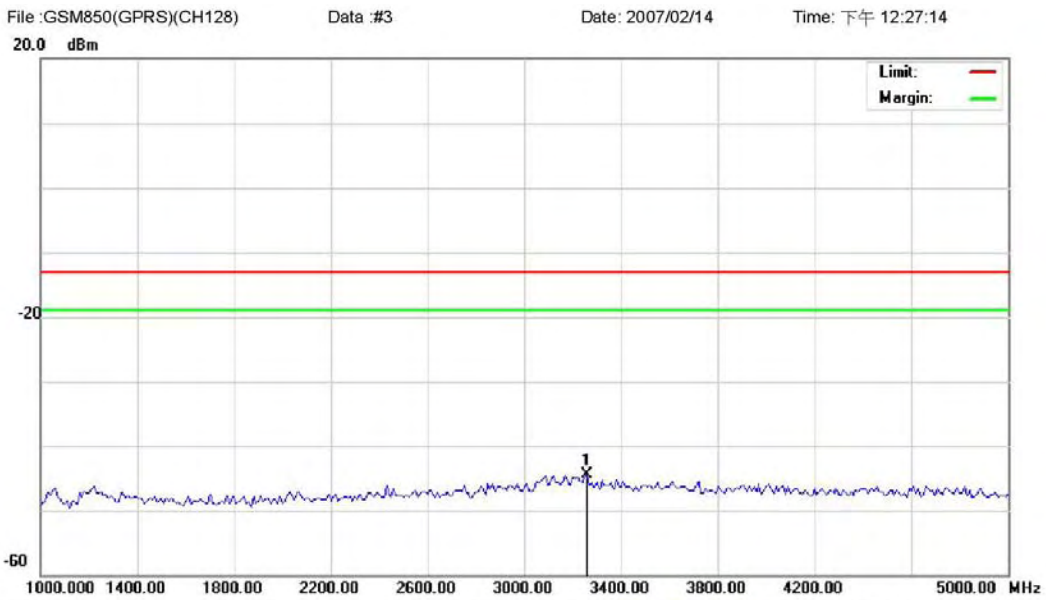
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	1.0087	-62.22	32.05	-30.17	-13.0	-17.17	peak	

*:Maximum data x:Over limit !:over margin •Reference Only

File :GSM850(GPRS)(CH128)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH128(824.2MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

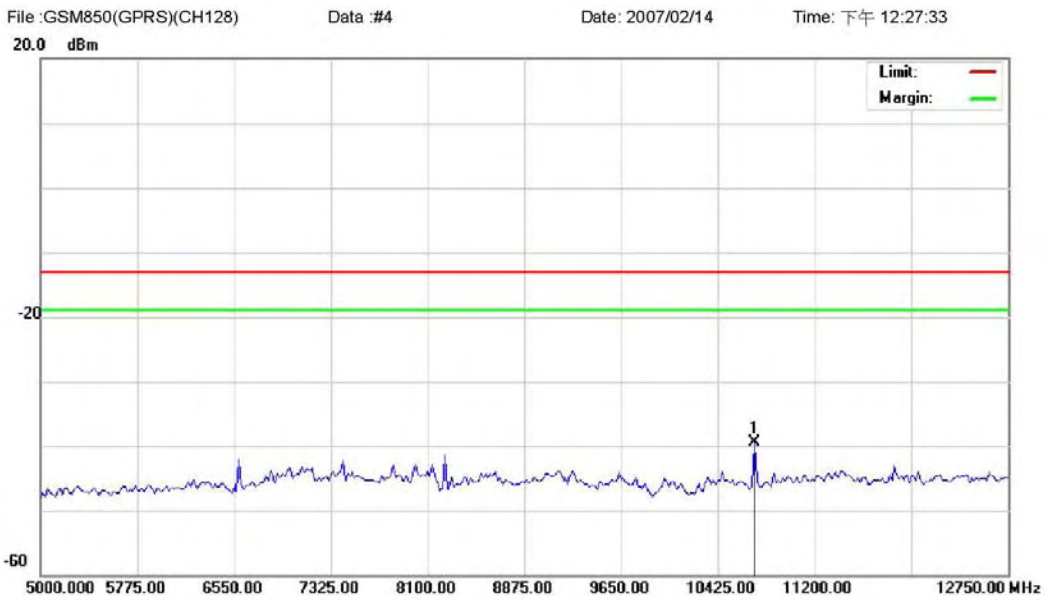
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	3260.000	-49.09	4.64	-44.45	-13.0	-31.45	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH128)\Data :#3 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH128(824.2MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

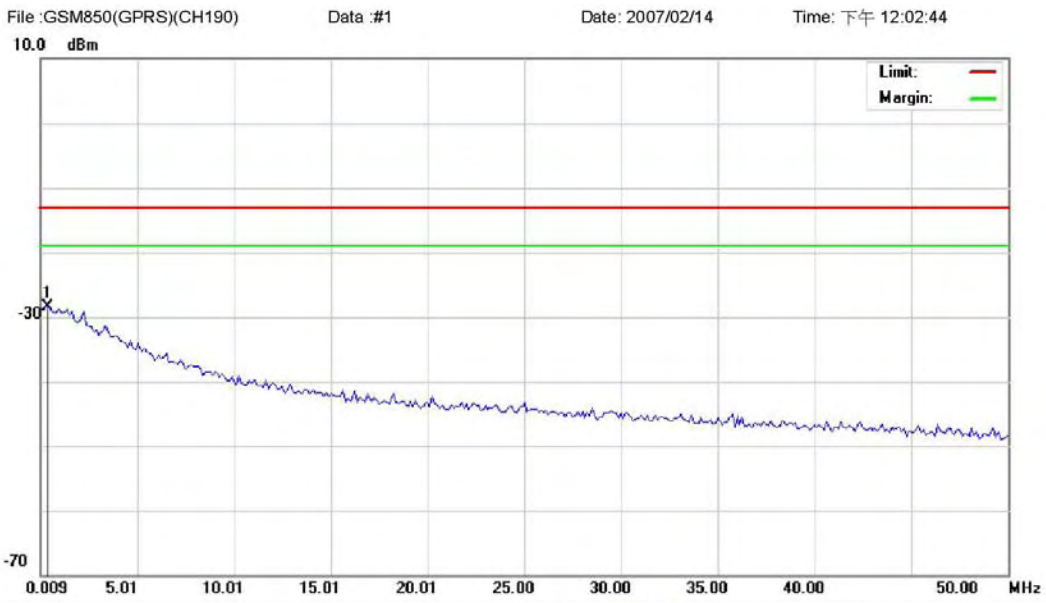
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10715.62	-43.71	4.28	-39.43	-13.0	-26.43	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH128)\Data :#4 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH190(836.6MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

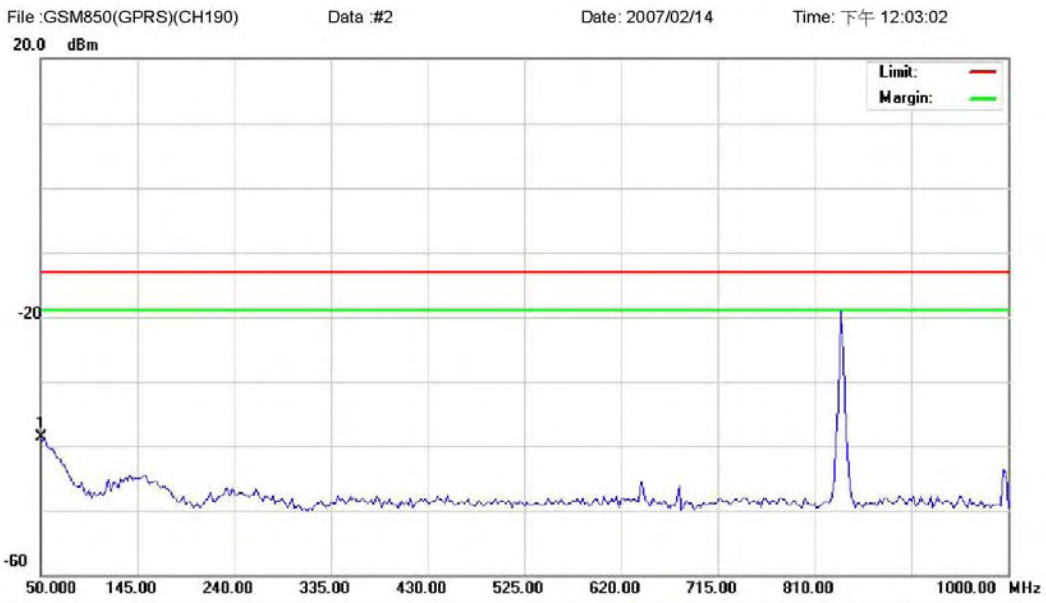
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	0.3839	-60.20	31.64	-28.56	-13.0	-15.56	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH190)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH190(836.6MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

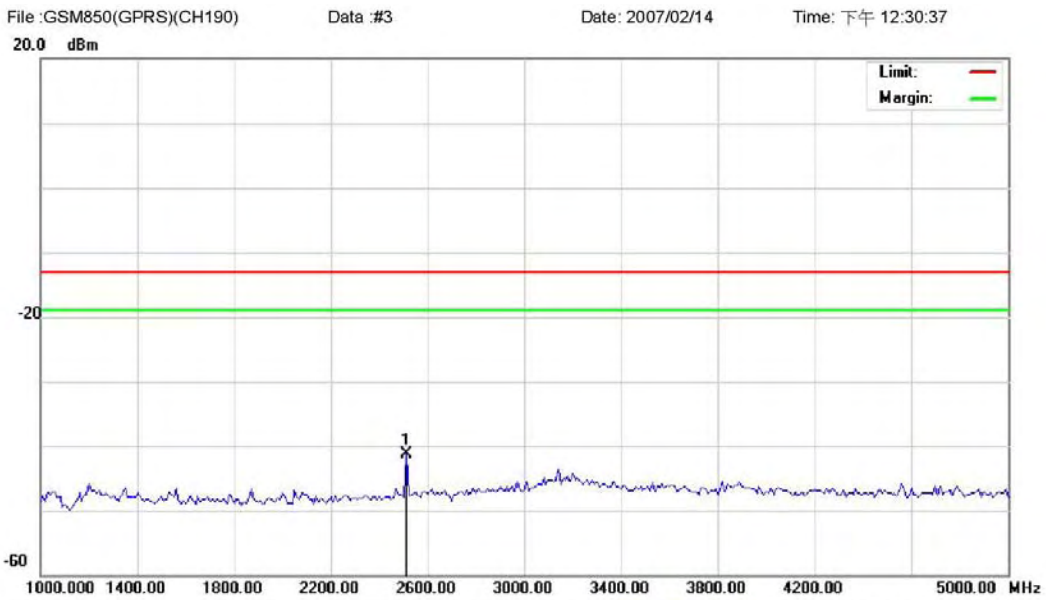
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	50.0000	-53.46	14.69	-38.77	-13.0	-25.77	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH190)\Data :#2 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH190(836.6MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

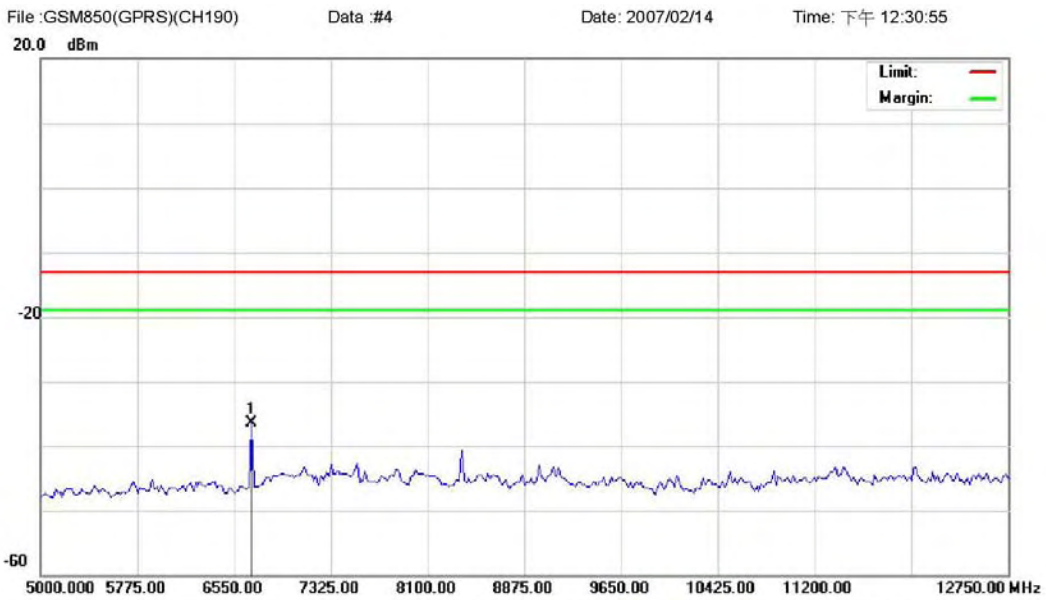
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2510.000	-45.72	4.36	-41.36	-13.0	-28.36	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH190)\Data :#3 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH190(836.6MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

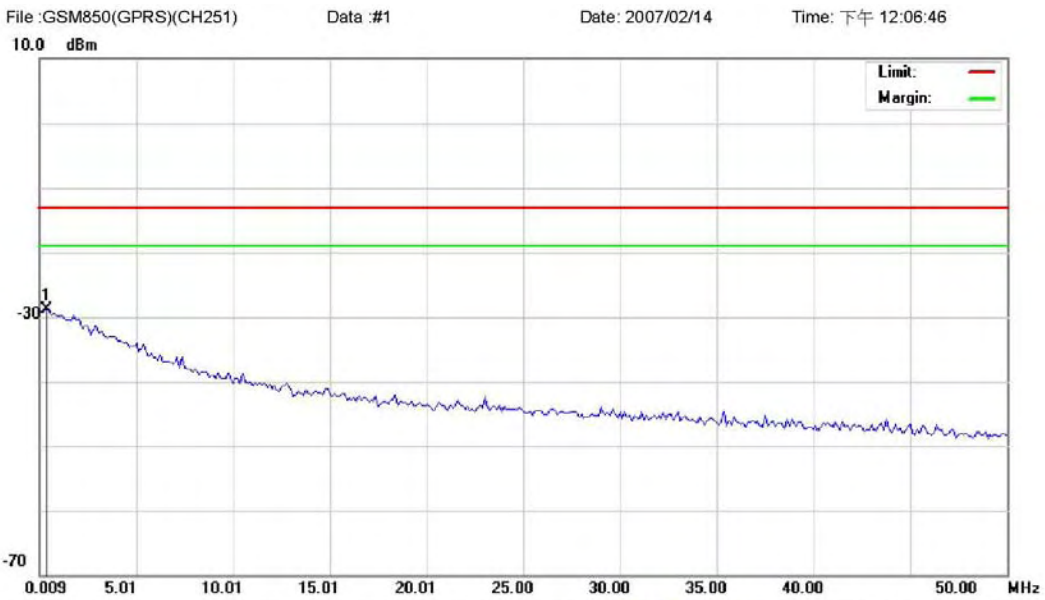
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6685.625	-40.95	4.49	-36.46	-13.0	-23.46	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH190)\Data :#4 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH251(848.8MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

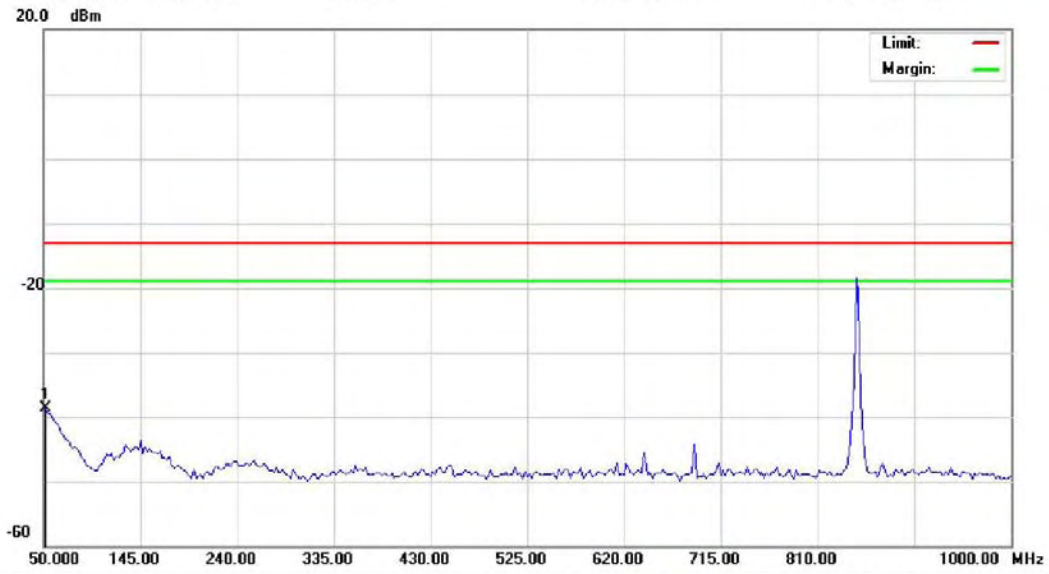
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	0.3839	-60.56	31.64	-28.92	-13.0	-15.92	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH251)\Data :#1 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz

File :GSM850(GPRS)(CH251) Data :#2 Date: 2007/02/14 Time: 下午 12:07:05



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH251(848.8MHz)
加Notch(3TNF-800)

Polarization: Conducted po
Power: DC 12V
Distance:

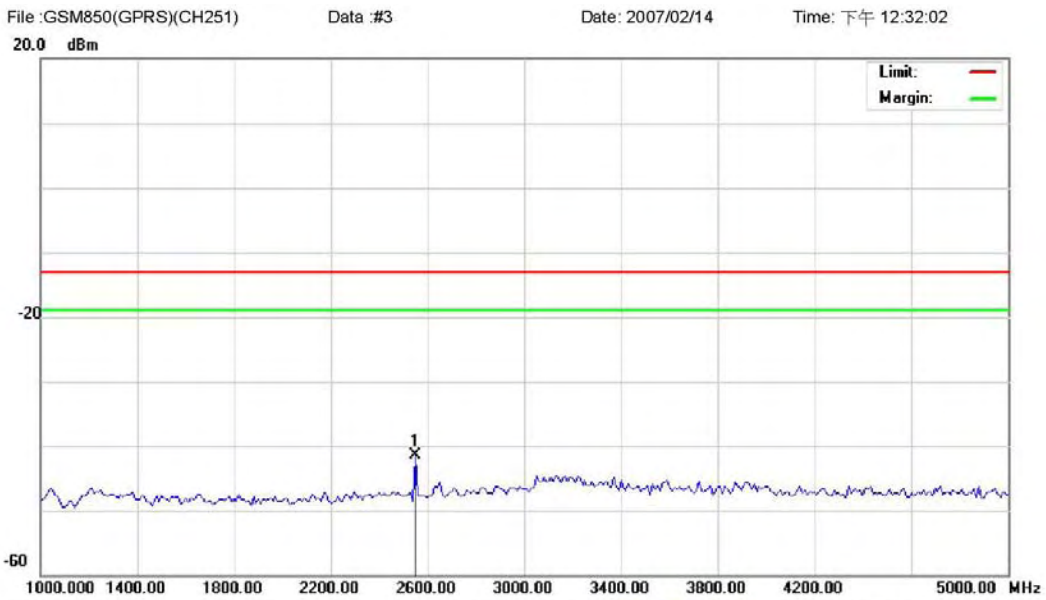
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	52.3750	-53.02	14.27	-38.75	-13.0	-25.75	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH251)\Data :#2 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH251(848.8MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

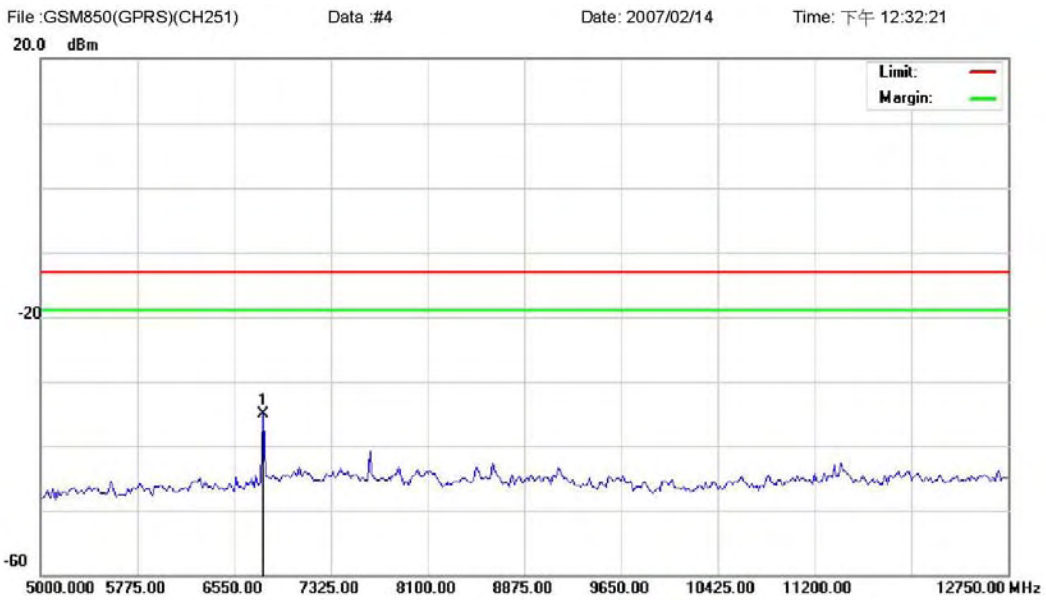
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2550.000	-45.87	4.45	-41.42	-13.0	-28.42	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH251)\Data :#3 Page: 1 Engineer Signature:

RB=100kHz ; VB=100kHz



Site site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode: GPRS
Note: CH251(848.8MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6782.500	-40.05	4.94	-35.11	-13.0	-22.11	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :GSM850(GPRS)(CH251)\Data :#4 Page: 1 Engineer Signature:

4.5.4.3 PCS 1900 Test Result

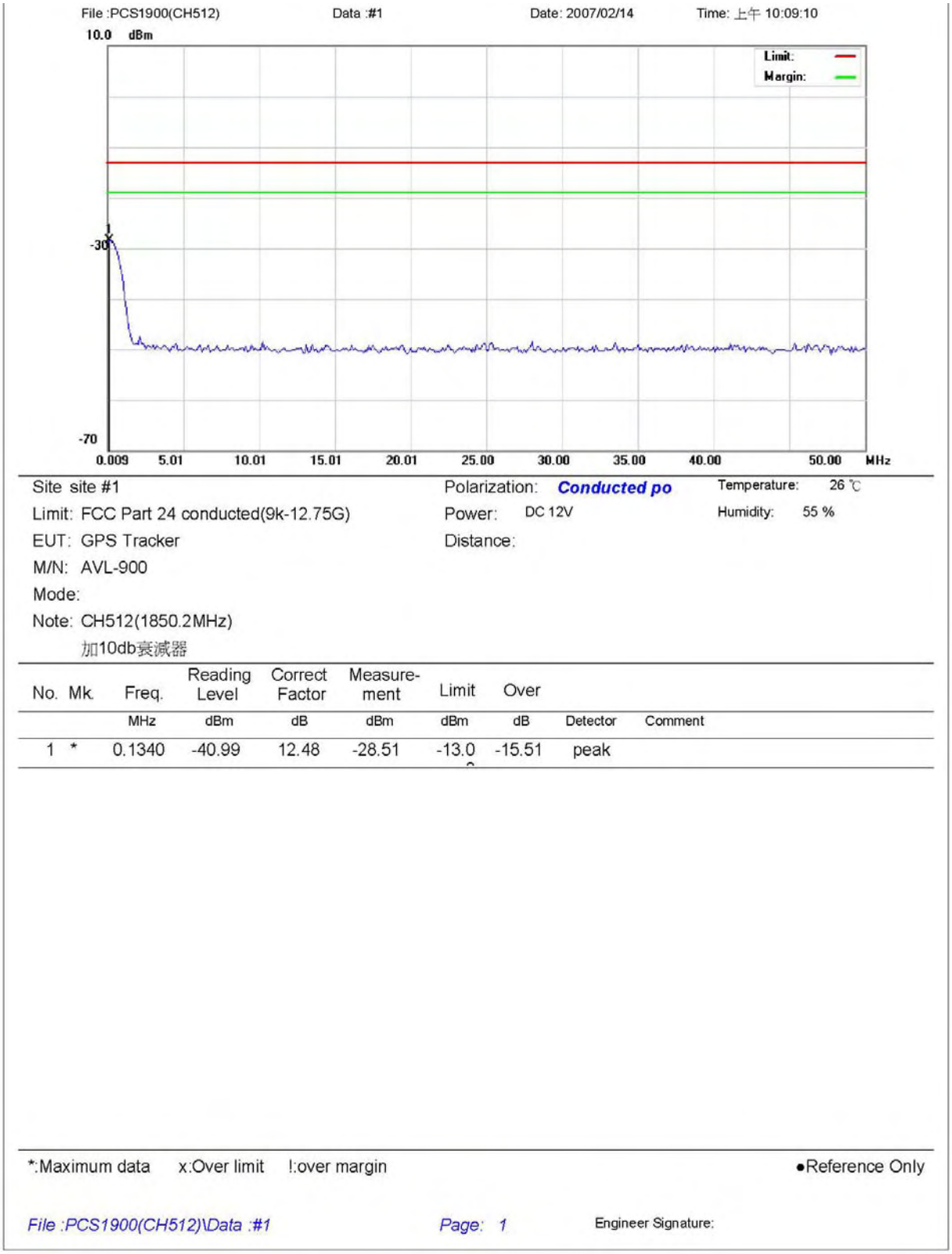
Applicant	: GoPass Technology Corp.
Model No	: AVL-900
EUT	: GPS Tracker
Test Mode	: PCS 1900 (Low CH512 / Middle CH661 / High CH 810)
Test Date	: 02/14/2007

Please refer to next pager of detail testing data.

Note: Amplitude= Reading Amplitude + Factor (Cable loss + Filter Amplitude= Insertion loss)

(Auto calculate in spectrum analyzer)

RB=1MHz ; VB=1MHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH512(1850.2MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

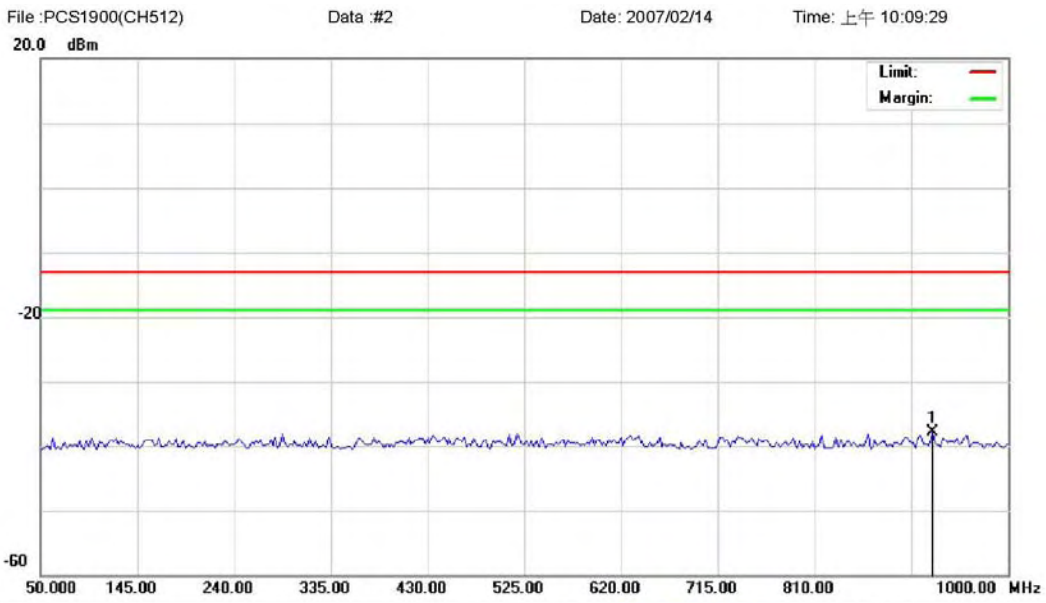
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	0.1340	-40.99	12.48	-28.51	-13.0	-15.51	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :PCS1900(CH512)\Data :#1 Page: 1 Engineer Signature:

RB=1MHz ; VB=1MHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH512(1850.2MHz)
加10db衰減器

Polarization: Conducted po
Power: DC 12V
Distance:

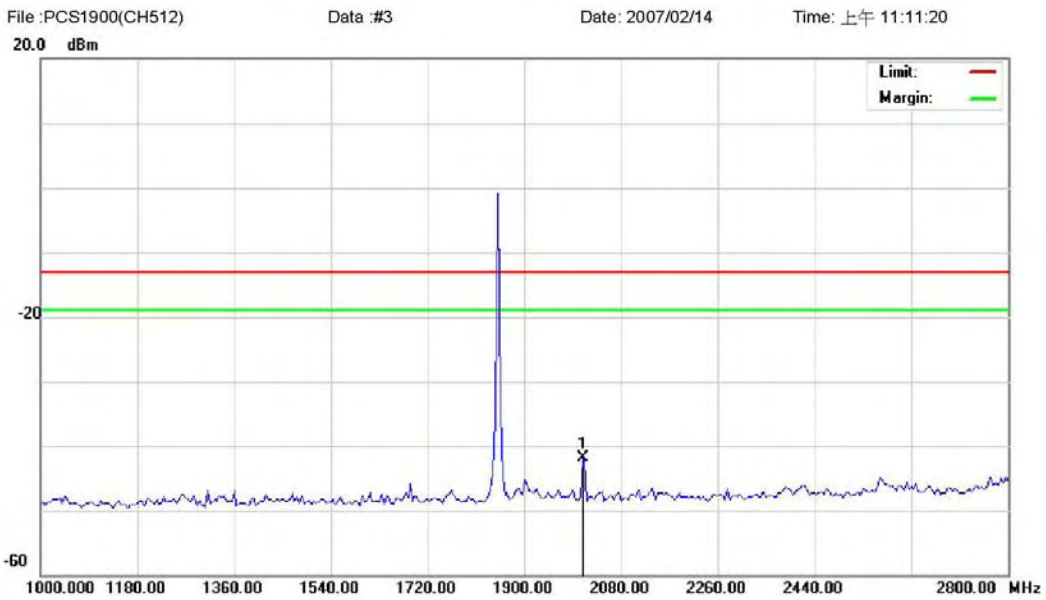
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	926.3750	-51.11	13.19	-37.92	-13.0	-24.92	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :PCS1900(CH512)\Data :#2 Page: 1 Engineer Signature:

RB=1MHz ; VB=1MHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH512(1850.2MHz)
加Notch(5TNF-1700)

Polarization: Conducted po
Power: DC 12V
Distance:

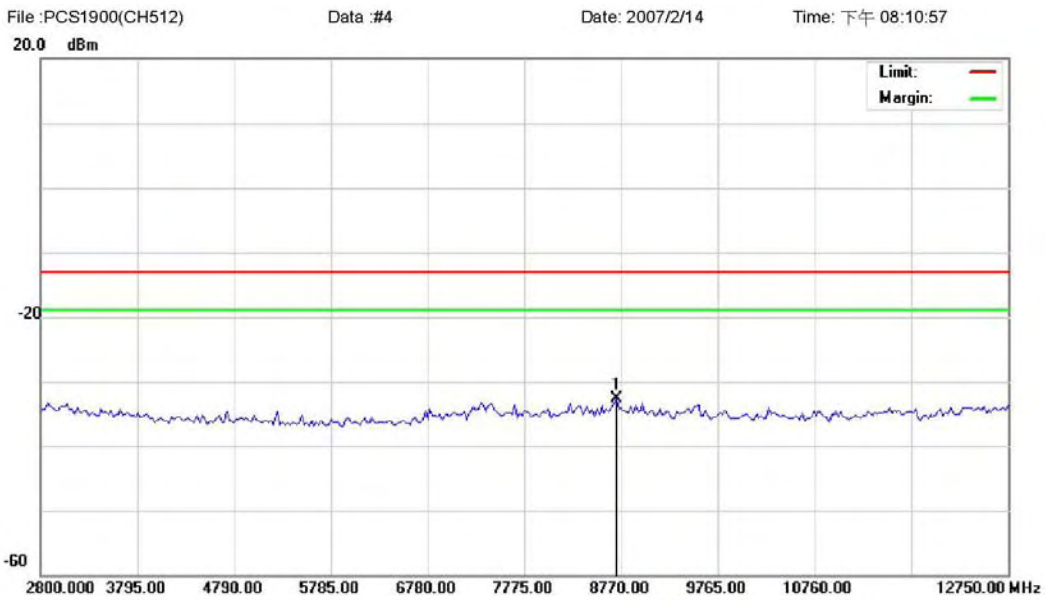
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	2008.000	-46.40	4.44	-41.96	-13.0	-28.96	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :PCS1900(CH512)\Data :#3 Page: 1 Engineer Signature:

RB=1MHz ; VB=1MHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH512(1850.2MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

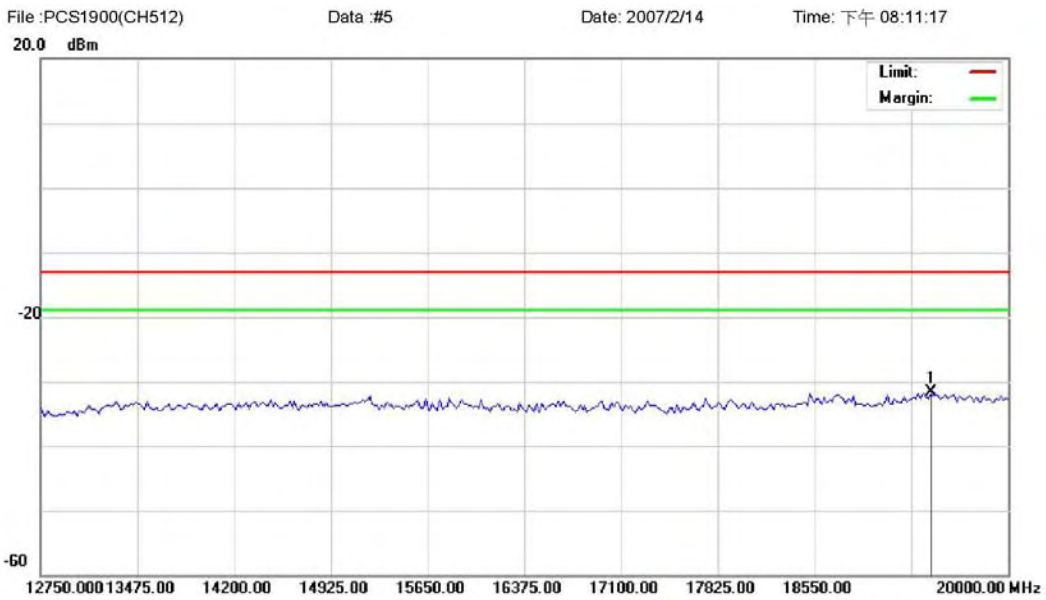
Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	8720.250	-38.16	5.47	-32.69	-13.0	-19.69	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :PCS1900(CH512)\Data :#4 Page: 1 Engineer Signature:

RB=1MHz ; VB=1MHz



Site site #1
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: GPS Tracker
M/N: AVL-900
Mode:
Note: CH512(1850.2MHz)

Polarization: Conducted po
Power: DC 12V
Distance:

Temperature: 26 ℃
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	19420.00	-39.02	7.27	-31.75	-13.0	-18.75	peak	

*:Maximum data x:Over limit !:over margin ●Reference Only

File :PCS1900(CH512)\Data :#5 Page: 1 Engineer Signature: