

Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker

M/N: AVL-900

Mode:

Note: CH661(1880MHz) 加10db衰減器

No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	0.1340	-40.95	12.48	-28.47	-13.0	-15.47	peak		

Power:

Distance:

DC 12V

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

File: PCS1900(CH661)\Data:#1

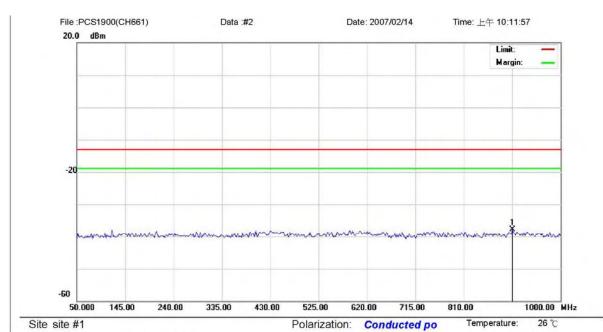
Page: 1

Engineer Signature:

Humidity:

55 %





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode: Note: CH661(1880MHz)

加10db衰減器

No.	MH	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	905.0000	-51.07	13.23	-37.84	-13.0	-24.84	peak		

Power:

Distance:

DC 12V

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

File: PCS1900(CH661)\Data:#2

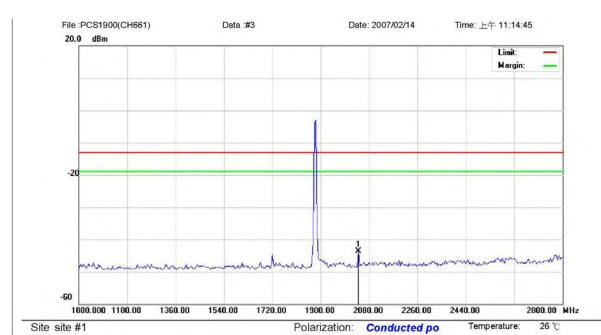
Page: 1

Engineer Signature:

Humidity:

55 %





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH661(1880MHz)

加Notch(5TNF-1700)

No.	MH	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	2039.500	-48.20	4.51	-43.69	-13.0	-30.69	peak		

Power:

Distance:

DC 12V

Humidity:

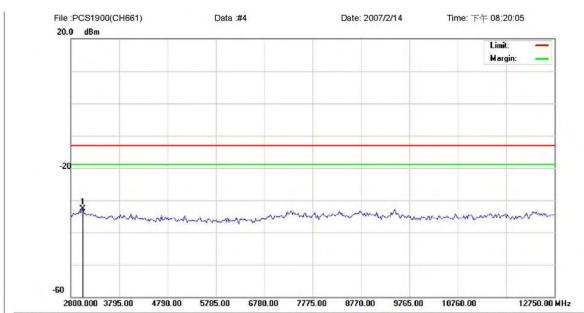
55 %

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

File: PCS1900(CH661)\Data:#3

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker

M/N: AVL-900

Mode:

Note: CH661(1880MHz)

Polarizat	ion: Conducted po	Temperature:	26 ℃
Power:	DC 12V	Humidity: 5	5 %

Distance:

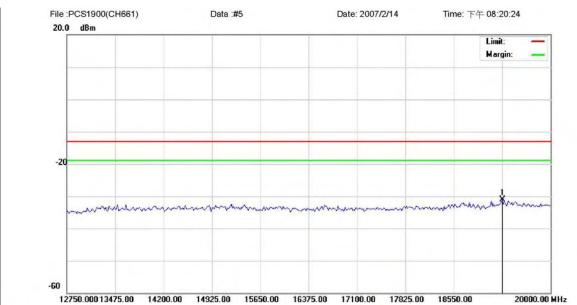
No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	3048.750	-38.13	5.47	-32.66	-13.0	-19.66	peak		

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

File: PCS1900(CH661)\Data:#4

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH661(1880MHz)

.00 16375.00 17100.00 17825.00 18550.00 20000.0	10 MHz

No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	19275.00	-38.31	7.23	-31.08	-13.0	-18.08	peak		

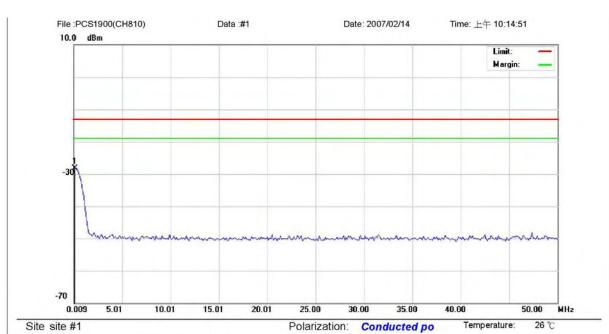
Distance:

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

File: PCS1900(CH661)\Data:#5

Page: 1





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH810(1909.8MHz) 加10db衰減器

No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	0.1340	-40.76	12.48	-28.28	-13.0	-15.28	peak		

Power:

Distance:

DC 12V

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

File: PCS1900(CH810)\Data:#1

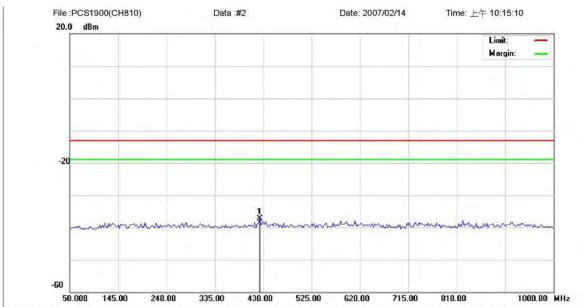
Page: 1

Engineer Signature:

Humidity:

55 %





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH810(1909.8MHz) 加10db衰減器

Power:

Polarization: Conducted po DC 12V

Temperature:

26 ℃ Humidity: 55 %

Distance:

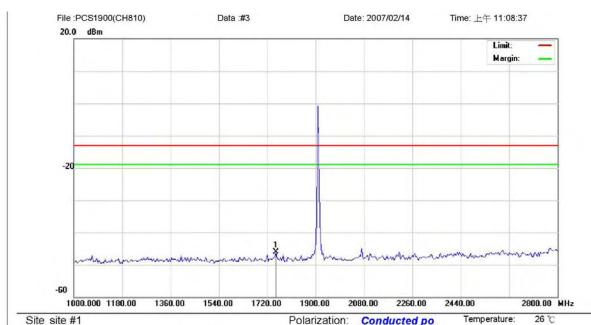
No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	422.8750	-50.45	13.24	-37.21	-13.0	-24.21	peak		

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

File: PCS1900(CH810)\Data:#2

Page: 1





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH810(1909.8MHz) 加Notch(5TNF-1700)

Polarization: Conducted po Temperature: DC 12V Humidity: Power: 55 %

Distance:

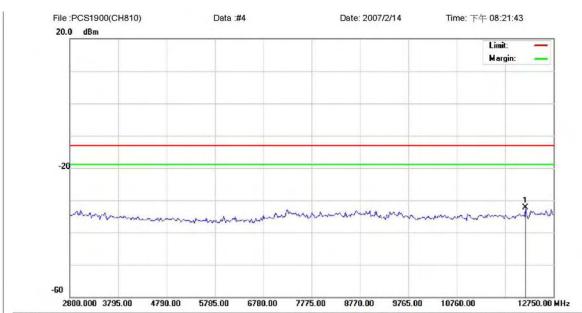
No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	1751.500	-50.69	4.63	-46.06	-13.0	-33.06	peak		

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

File: PCS1900(CH810)\Data:#3

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH810(1909.8MHz)

Polarization: Conducted po Temperature: 26 °C Power: DC 12V Humidity: 55 %

Distance:

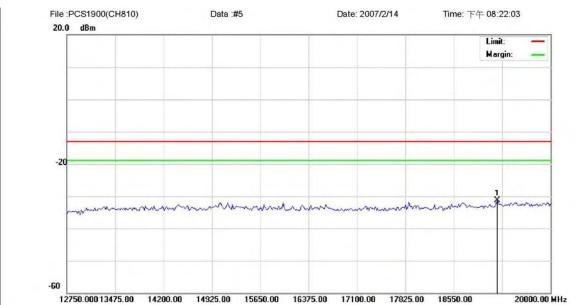
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	12177.87	-37.59	5.26	-32.33	-13.0	-19.33	peak		

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

File: PCS1900(CH810)\Data:#4

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode:

Note: CH810(1909.8MHz)

.00	16375.00	1	7100.00	17825.00	18550.00	20000.00
	Polarizati	on:	Cond	ucted po	Temperatur	re: 26 °C
	Power:	DC	12V		Humidity:	55 %

Distance:

No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	19202.50	-38.60	7.21	-31.39	-13.0	-18.39	peak		

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

File: PCS1900(CH810)\Data:#5

Page: 1



4.5.4.4 PCS 1900 + GPRS Test Result

Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

Test Mode : PCS 1900 + GPRS (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)





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900 Mode: GPRS

Note: CH512(1850.2MHz) 加10db衰減器 Polarization: Conducted po Temperature: 26 °C Power: DC 12V Humidity: 55 %

Distance:

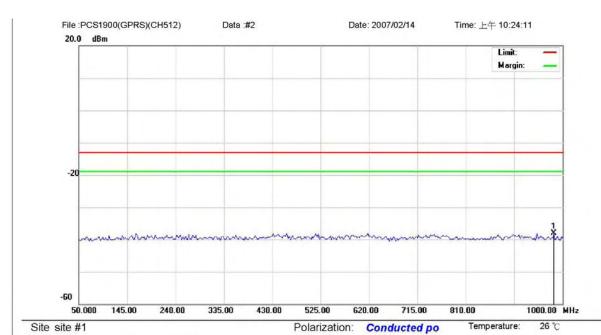
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	0.1340	-41.04	12.48	-28.56	-13.0	-15.56	peak		

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

File: PCS1900(GPRS)(CH512)\Data:#1

Page: 1





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900 Mode: GPRS

Note: CH512(1850.2MHz) 加10db衰減器

No.	MH	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	983.3750	-51.28	13.21	-38.07	-13.0	-25.07	peak		

Power:

Distance:

DC 12V

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

File: PCS1900(GPRS)(CH512)\Data:#2

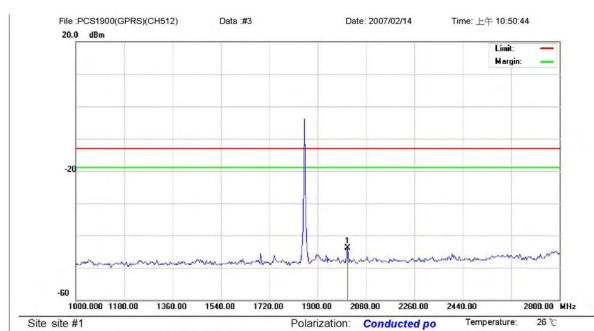
Page: 1

Engineer Signature:

Humidity:

55 %





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900 Mode: GPRS

Note: CH512(1850.2MHz)

加Notch(5TNF-1700) Reading Measure-

No.	M	k. Freq.	Level	Factor	ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	2012.500	-48.29	4.43	-43.86	-13.0	-30.86	peak		

Power:

Distance:

DC 12V

Humidity:

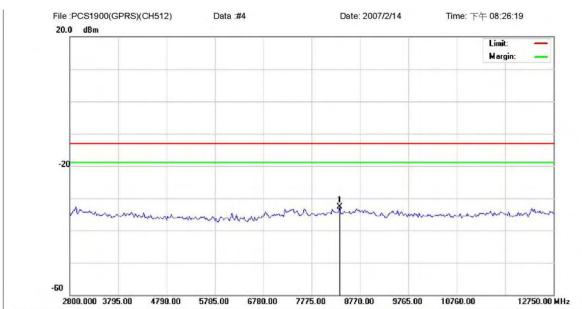
55 %

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

File: PCS1900(GPRS)(CH512)\Data:#3

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900 Mode: GPRS

Note: CH512(1850.2MHz)

Polarization:		Conducted po	Temperatur	e: 26 ℃
Power:	DC	12V	Humidity:	55 %

Distance:

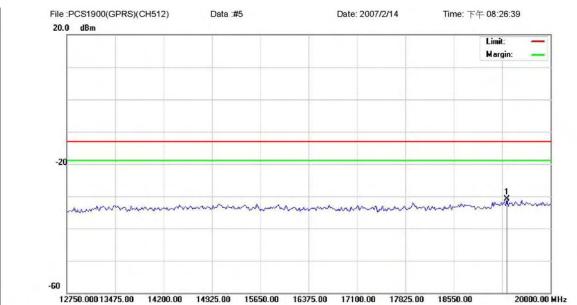
Reading Correct Measure-Freq. Limit Over No. Mk. Level Factor ment MHz dBm dB dBm dBm dB Detector Comment 5.76 1 * 8347.125 -38.44 -32.68 -13.0 -19.68 peak

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

File: PCS1900(GPRS)(CH512)\Data:#4

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode: GPRS

Note: CH512(1850.2MHz)

00	16375.00	5.00 17100.00 17825.00 1855		18550.00	20000.00
F	olarizatio	on: Cond	ucted po	Temperature:	26 ℃
F	Power:	DC 12V		Humidity:	55 %

Distance:

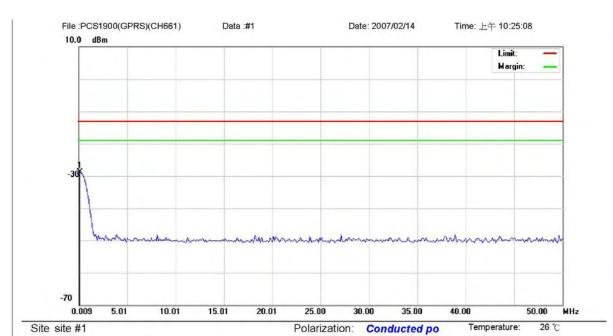
No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	19347.50	-38.18	7.25	-30.93	-13.0	-17.93	peak		

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

File: PCS1900(GPRS)(CH512)\Data:#5

Page: 1





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode: GPRS

Note: CH661(1880MHz) 加10db衰減器

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	0.1340	-41.45	12.48	-28.97	-13.0	-15.97	peak		

Power:

Distance:

DC 12V

*: Maximum data x:Over limit !:over margin

File: PCS1900(GPRS)(CH661)\Data:#1

Page: 1

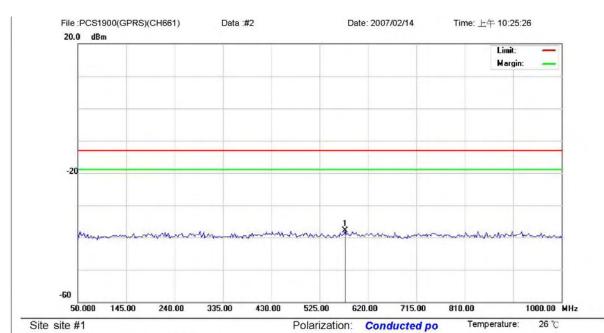
Engineer Signature:

Humidity:

55 %

•Reference Only





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900

Mode: GPRS Note: CH661(1880MHz) 加10db衰減器

Power:

DC 12V

Temperature: Humidity: 55 %

Distance:

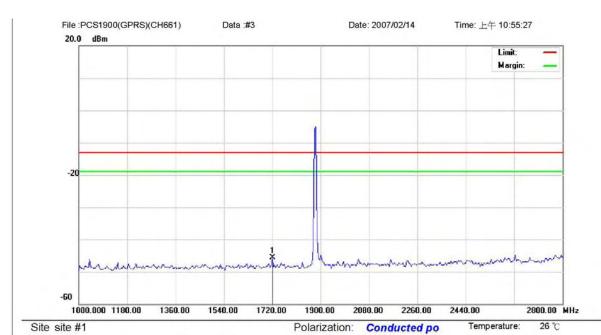
No.	MH	k. Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	574.8750	-51.05	13.18	-37.87	-13.0	-24.87	peak		

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

File: PCS1900(GPRS)(CH661)\Data:#2

Page: 1





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900 Mode: GPRS

Note: CH661(1880MHz) πNotch(5TNF-1700)

No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	1720.000	-50.05	4.38	-45.67	-13.0	-32.67	peak		

Power:

Distance:

DC 12V

Humidity:

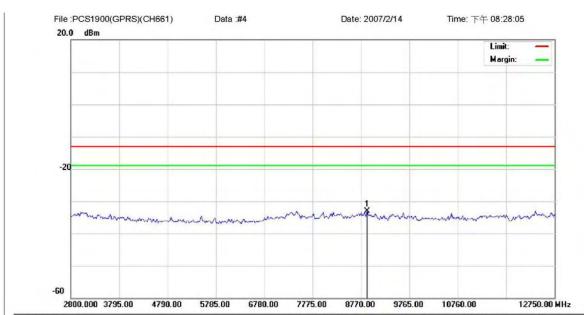
55 %

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

File: PCS1900(GPRS)(CH661)\Data:#3

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker M/N: AVL-900 Mode: GPRS

Note: CH661(1880MHz)

Polarization: **Conducted po**Temperature: 26 °C

Power: DC 12V

Humidity: 55 %

Distance:

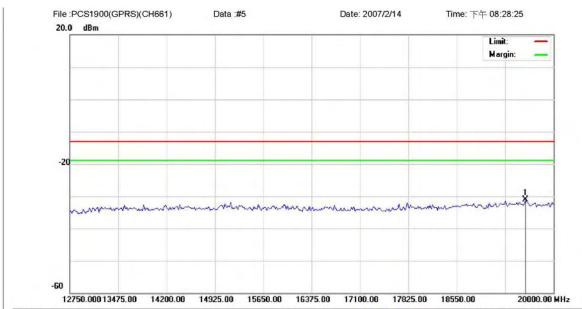
No.	Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	8894.375	-38.48	5.46	-33.02	-13.0	-20.02	peak		

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

File: PCS1900(GPRS)(CH661)\Data:#4

Page: 1





Site site #1 Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker

M/N: AVL-900 Mode: GPRS

Note: CH661(1880MHz)

Polarizat	ion: Conducted po	Temperature:	26 ℃
Power:	DC 12V	Humidity: 5	5 %

Distance:

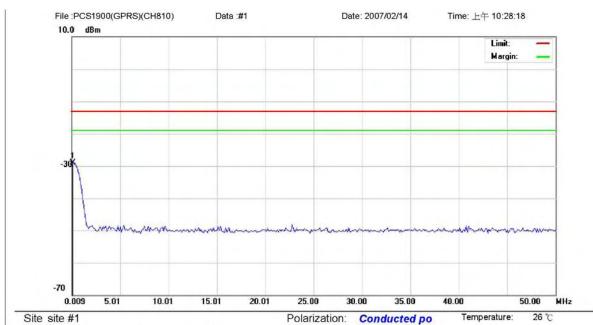
No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	19583.12	-38.45	7.32	-31.13	-13.0	-18.13	peak		

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

File: PCS1900(GPRS)(CH661)\Data:#5

Page: 1





Site site #1

Limit: FCC Part 24 conducted(9k-12.75G)

0.1340 -41.50

12.48

-29.02

EUT: GPS Tracker

M/N: AVL-900 Mode: GPRS

Note: CH810(1909.8MHz) 加10db豪減器

No. Mk.	1k.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	

-13.0 -16.02

Power:

Distance:

DC 12V

peak

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

File: PCS1900(GPRS)(CH810)\Data:#1

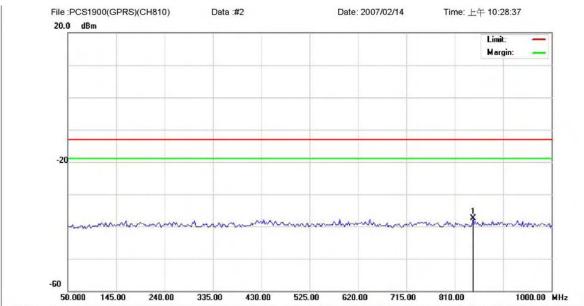
Page: 1

Engineer Signature:

Humidity:

55 %





Site site #1 Limit: FCC Part 24 conducted(9k-12.75G)

-50.80

EUT: GPS Tracker

M/N: AVL-900 Mode: GPRS

1 * 845.6250

Note: CH810(1909.8MHz) 加10db衰減器 Polarization: Conducted po Temperature: 26 °C
Power: DC 12V Humidity: 55 %

Distance:

加10db衰減器 Reading Correct Measure-No. Mk. Freq. Limit Over Level Factor ment MHz dBm dB dBm dBm dB Detector Comment

-37.58

-13.0

-24.58

peak

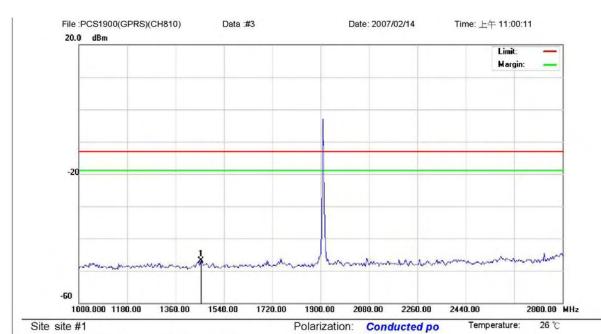
13.22

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

File: PCS1900(GPRS)(CH810)\Data:#2

Page: 1





Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker

M/N: AVL-900

Mode: GPRS Note: CH810(1909.8M

Note: CH810(1909.8MHz) 加Notch(5TNF-1700)

No.	Mk	c. Freq.	Reading Level		Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	1454.500	-51.54	4.59	-46.95	-13.0	-33.95	peak		

Power:

Distance:

DC 12V

Humidity:

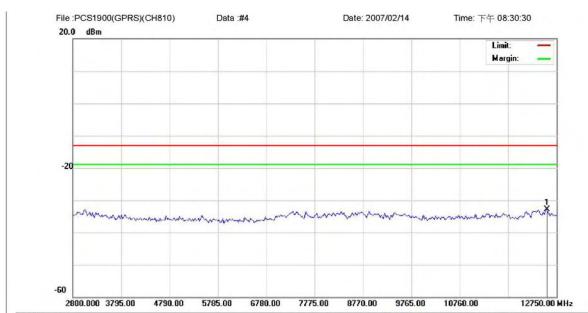
55 %

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

File:PCS1900(GPRS)(CH810)\Data:#3

Page: 1





Site site #1 Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker

M/N: AVL-900 Mode: GPRS

Note: CH810(1909.8MHz)

Polarizat	ion: Conducted po	Temperature:	26 ℃
Power:	DC 12V	Humidity: 5	5 %

Distance:

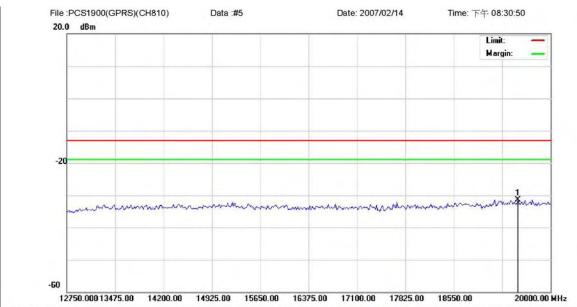
No.	Mk	c Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment	
1	*	12551.00	-37.92	5.05	-32.87	-13.0	-19.87	peak		

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

File:PCS1900(GPRS)(CH810)\Data:#4

Page: 1





Site site #1 Limit: FCC Part 24 conducted(9k-12.75G)

EUT: GPS Tracker

M/N: AVL-900 Mode: GPRS

1 * 19510.62

No. Mk.

Note: CH810(1909.8MHz)

Freq.

MHz

Polarization:		Conducted po	Temperature	26 ℃
Power:	DC 12	2V	Humidity:	55 %

Distance:

Reading Correct Measure-Limit Over Level Factor ment dBm dB dBm dBm dB Detector Comment 7.30 -38.73 -31.43 -13.0 -18.43 peak

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

File: PCS1900(GPRS)(CH810)\Data:#5

Page: 1



4.6 Field Strength of Spurious Radiation

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

4.6.1 Measurement Instruments

As described in chapter 5 of this test report.

4.6.2 Test Procedure

The equipment under test is placed inside the semi-anechoic chamber on a wooden table at the turntable center. For each spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum reading on the spectrum analyzer. This is repeated for both horizontal and vertical polarizations of the receive antenna.

The equipment under test is then replaced with a substitution antenna fed by a signal generator. With the signal generator tuned to a particular spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters to obtain a maximum reading at the spectrum analyzer. The output of the signal generator is then adjusted until a reading identical to that obtained with the actual transmitter is achieved.

The power in dBm of each spurious emission is calculated by correcting the signal generator level for cable loss and gain of the substitution antenna referenced to a dipole. A fully charged battery was used for the supply voltage.

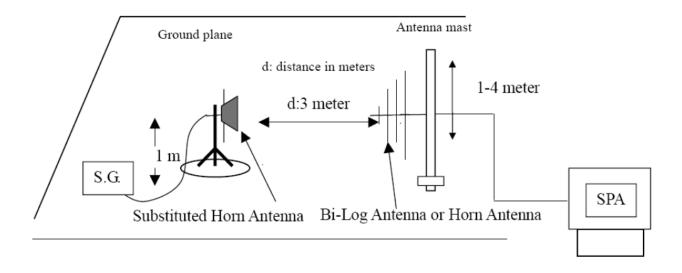
The settings of the receiver were as follows:

Units dBm
Resolution Bandwidth 1 MHz
Video Bandwidth Auto
Sweep Time Auto



4.6.3 Test Setup Layout

Substituted Method Test Set-up





4.6.4 Test Result

4.6.4.1 GSM 850 Test Result

Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

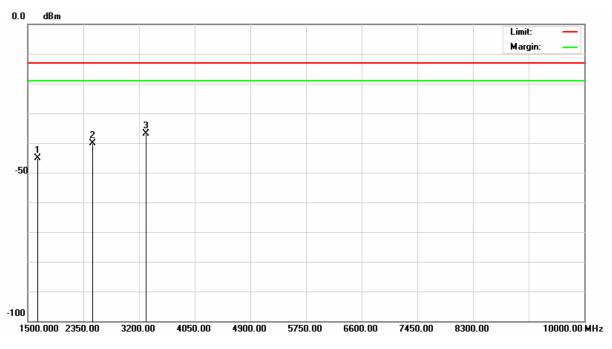
Test Mode : GSM 850 (Low CH128)

Test Date : 05/18/2007

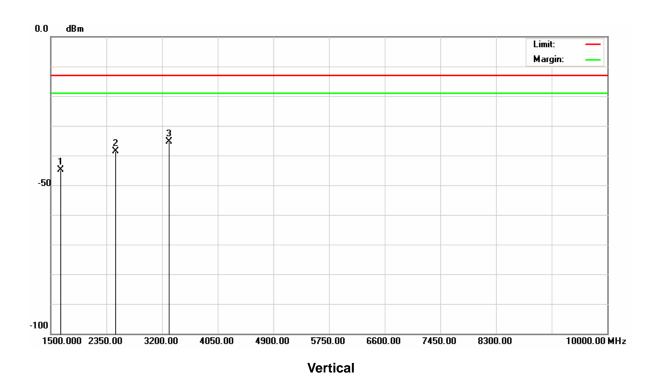
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-45.20	-44.84
3rd harmonic	-13	-40.07	-38.68
4th harmonic	-13	-36.75	-35.41
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

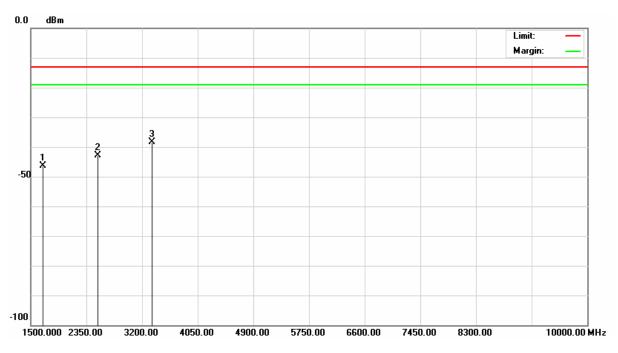
Test Mode : GSM 850 (Middle CH190)

Test Date : 05/18/2007

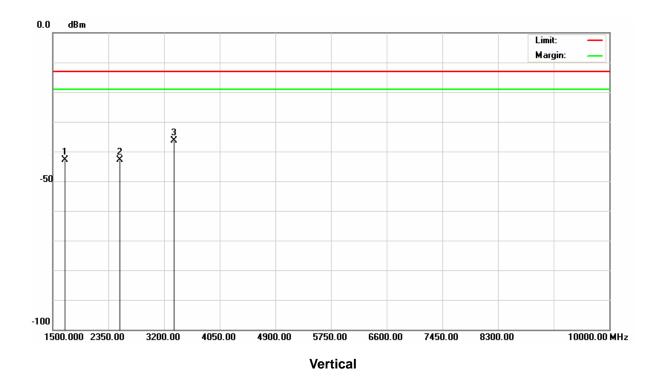
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-46.39	-42.97
3rd harmonic	-13	-42.93	-42.91
4th harmonic	-13	-38.47	-36.32
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

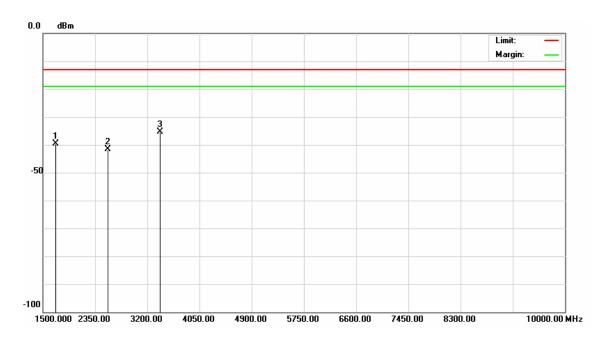
Test Mode : GSM 850 (High CH 251)

Test Date : 05/18/2007

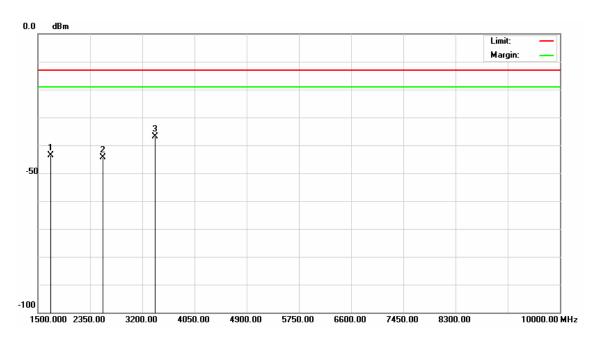
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-39.51	-43.70
3rd harmonic	-13	-41.55	-44.26
4th harmonic	-13	-35.48	-36.82
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.





Horizontal



Vertical



4.6.4.2 GSM 850 Test Result

Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

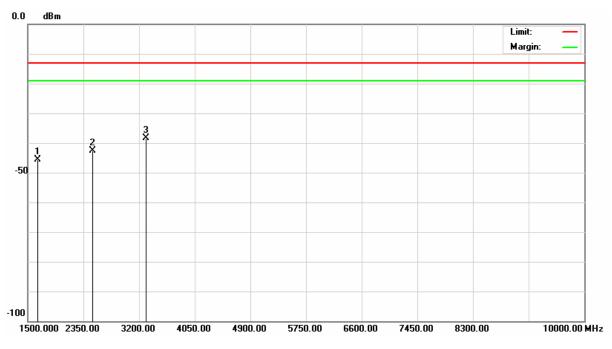
Test Mode : GSM 850 + GPRS (Low CH128)

Test Date : 05/18/2007

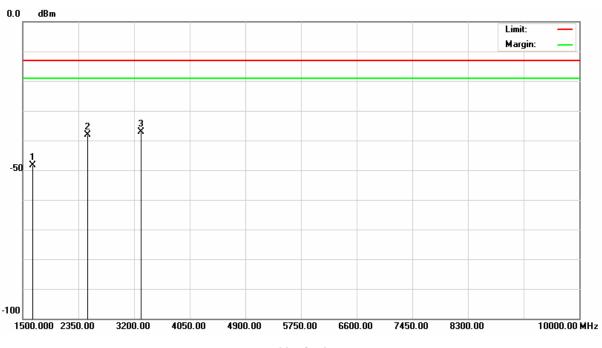
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-45.68	-48.26
3rd harmonic	-13	-42.66	-38.11
4th harmonic	-13	-38.45	-37.18
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.









Vertical



Model No : AVL-900

EUT : GPS Tracker

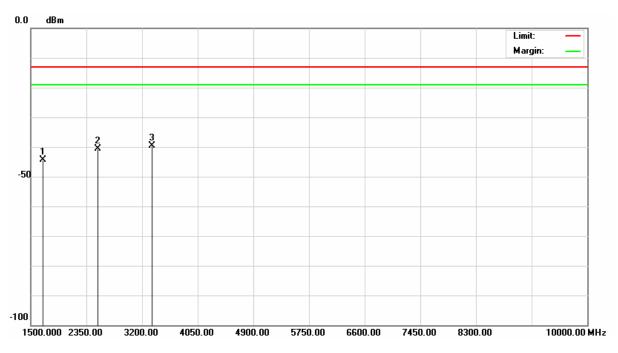
Test Mode : GSM 850 + GPRS (Middle CH190)

Test Date : 05/18/2007

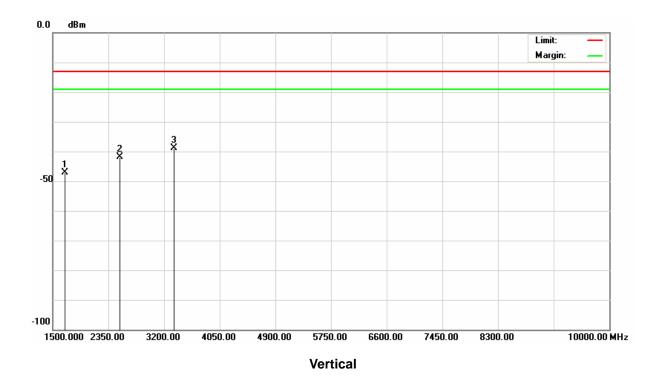
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-44.42	-47.12
3rd harmonic	-13	-40.65	-41.90
4th harmonic	-13	-39.58	-38.88
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Model No : AVL-900

EUT : GPS Tracker

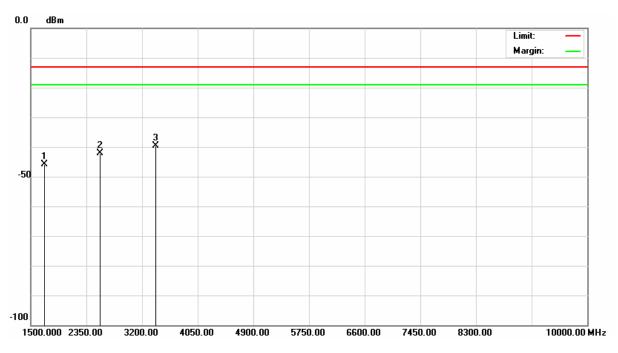
Test Mode : GSM 850 + GPRS (High CH 251)

Test Date : 05/18/2007

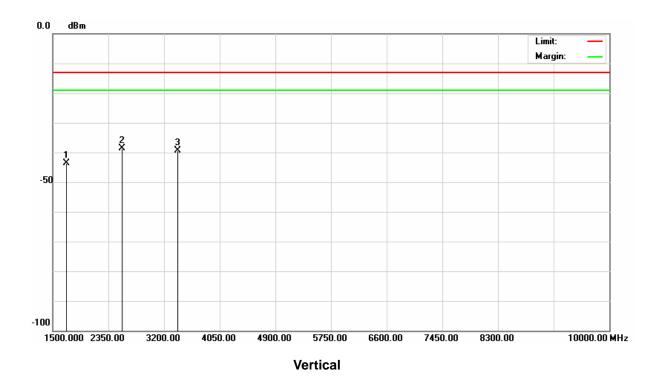
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-45.78	-43.70
3rd harmonic	-13	-42.21	-38.71
4th harmonic	-13	-39.51	-39.44
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











4.6.4.3 PCS 1900 Test Result

Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

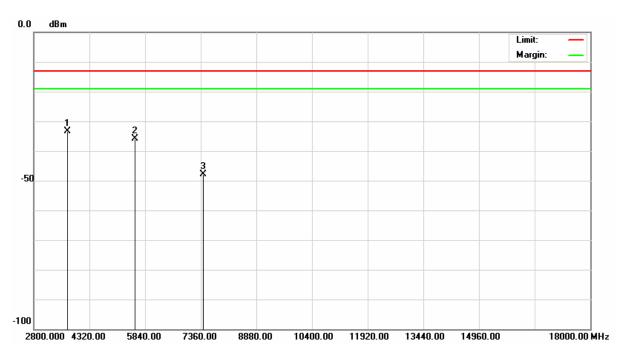
Test Mode : PCS 1900 (Low CH512)

Test Date : 05/18/2007

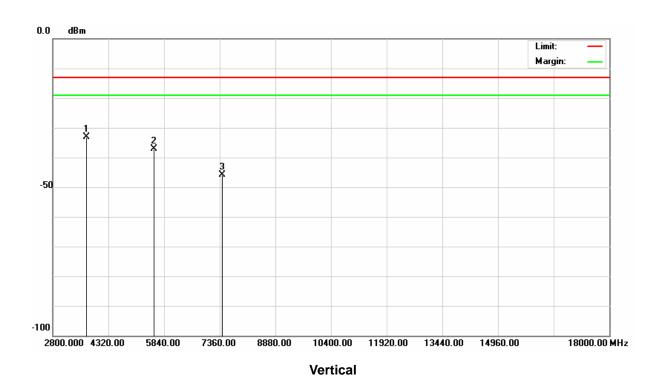
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-33.33	-33.18
3rd harmonic	-13	-35.76	-37.12
4th harmonic	-13	-47.79	-45.96
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Model No : AVL-900

EUT : GPS Tracker

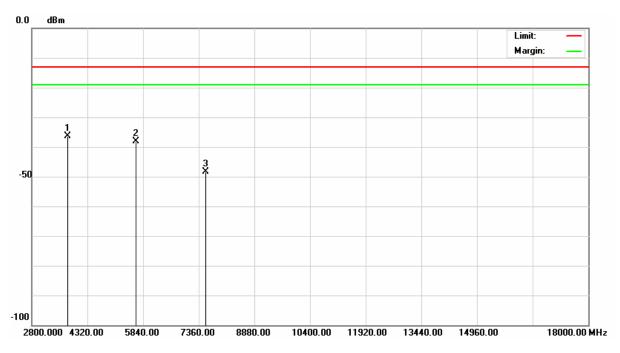
Test Mode : PCS 1900 (Middle CH661)

Test Date : 05/18/2007

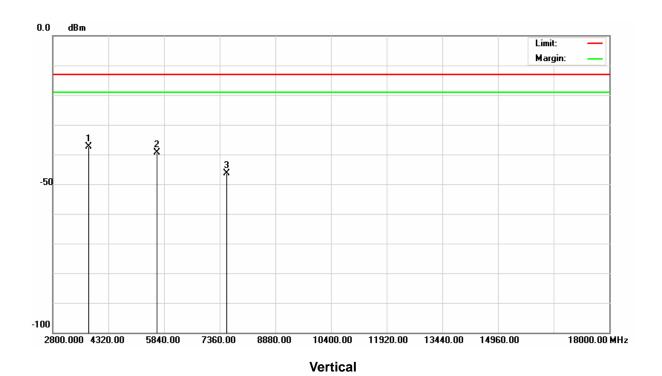
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-36.33	-37.40
3rd harmonic	-13	-38.12	-39.47
4th harmonic	-13	-48.48	-46.29
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Model No : AVL-900

EUT : GPS Tracker

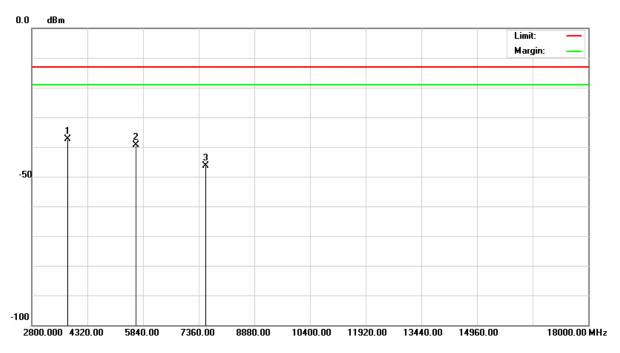
Test Mode : PCS 1900 (High CH 810)

Test Date : 05/18/2007

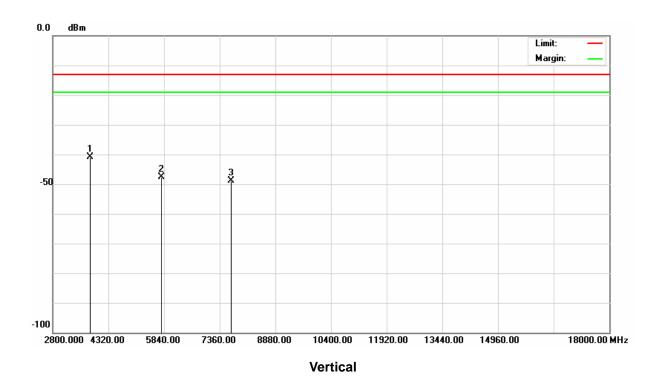
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-42.49	-40.84
3rd harmonic	-13	-49.85	-47.62
4th harmonic	-13	-48.77	-48.95
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











4.6.4.4 PCS 1900 + GPRS Test Result

Applicant : GoPass Technology Corp.

Model No : AVL-900

EUT : GPS Tracker

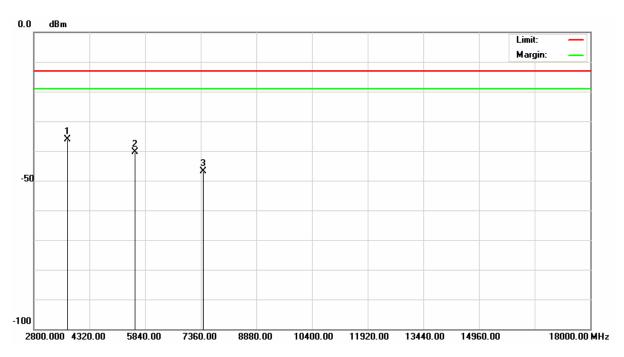
Test Mode : PCS 1900 + GPRS (Low CH512)

Test Date : 05/18/2007

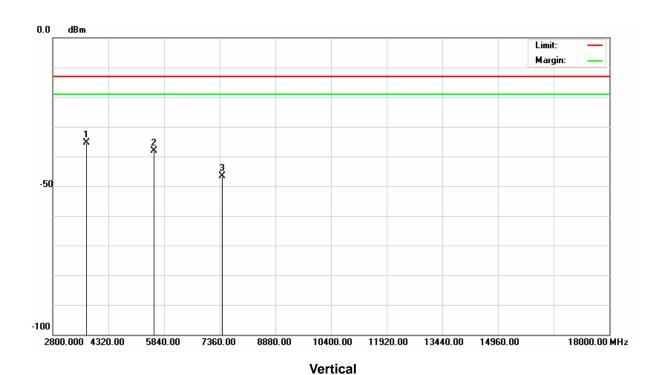
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-36.12	-35.45
3rd harmonic	-13	-40.40	-38.22
4th harmonic	-13	-46.83	-46.71
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Model No : AVL-900

EUT : GPS Tracker

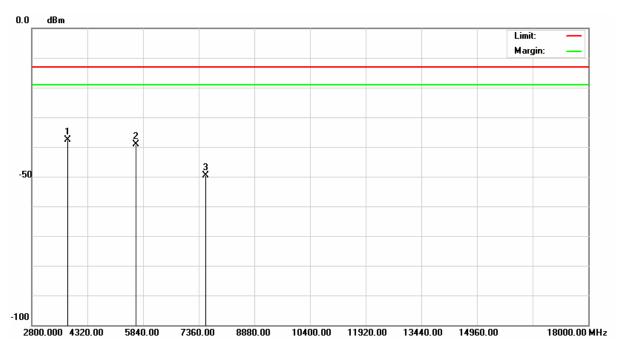
Test Mode : PCS 1900 + GPRS (Middle CH661)

Test Date : 05/18/2007

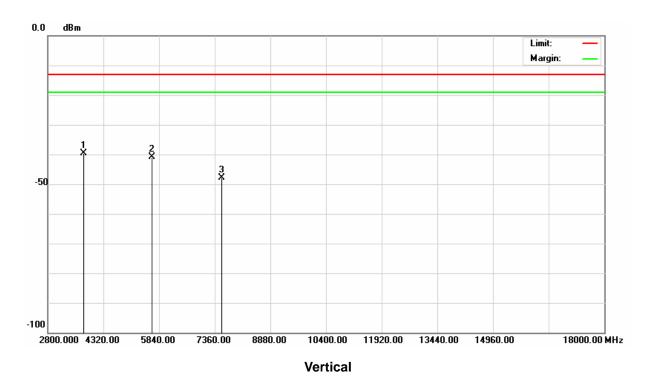
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-37.54	-39.53
3rd harmonic	-13	-39.22	-40.95
4th harmonic	-13	-49.58	-47.76
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











Model No : AVL-900

EUT : GPS Tracker

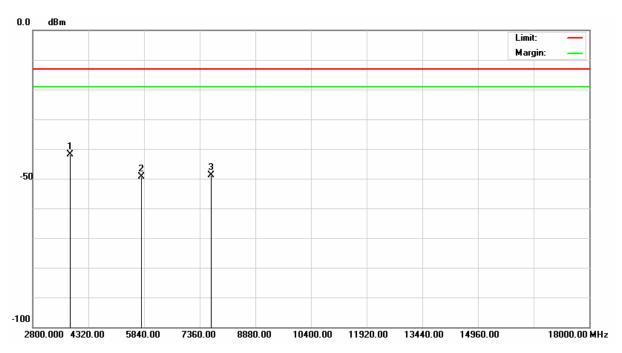
Test Mode : PCS 1900 + GPRS (High CH 810)

Test Date : 05/18/2007

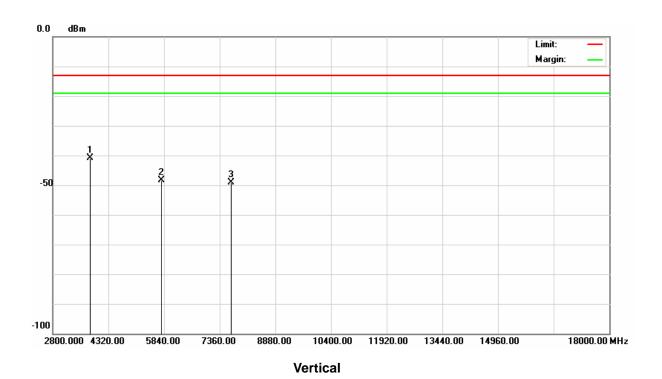
Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-41.94	-40.75
3rd harmonic	-13	-49.38	-48.32
4th harmonic	-13	-48.77	-49.12
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

- 1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- 2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- 3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.











4.7 Frequency Stability (Temperature Variation)

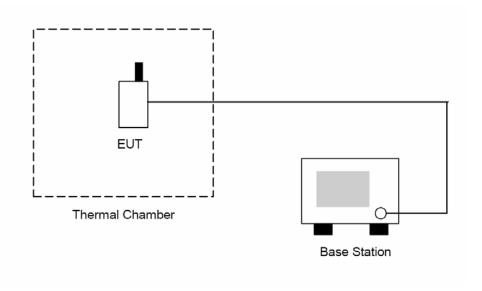
4.7.1 Measurement Instrument

As described in chapter 5 of this test report.

4.7.2 Test Procedure

- 1. The EUT and test equipment were set up as shown on the following section.
- 2. With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
- 3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
- 4. The temperature tests were performed for the worst case.
- 5. Test data was recorded.

4.7.3 Test Setup Layout





4.7.4 Test Result

Test Mode: GSM 850 CH190

Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
-30	43.72	0.052	0.1
-20	44.65	0.053	0.1
-10	41.68	0.050	0.1
0	39.25	0.047	0.1
10	42.36	0.051	0.1
20	31.33	0.037	0.1
30	34.62	0.041	0.1
40	37.61	0.045	0.1
50	35.48	0.042	0.1

Test Mode: GSM 850 + GPRS CH190

Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
-30	41.68	0.050	0.1
-20	48.12	0.057	0.1
-10	50.14	0.060	0.1
0	51.61	0.062	0.1
10	54.83	0.066	0.1
20	51.62	0.062	0.1
30	49.15	0.059	0.1
40	48.48	0.058	0.1
50	39.74	0.048	0.1



Test Mode: PCS 1900 CH661

Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
-30	41.63	0.022	1
-20	46.15	0.025	1
-10	38.22	0.020	1
0	35.13	0.019	1
10	41.66	0.022	1
20	48.44	0.026	1
30	50.71	0.027	1
40	34.62	0.018	1
50	31.58	0.017	1

Test Mode: PCS 1900 + GPRS CH661

Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
-30	47.19	0.025	1
-20	48.91	0.026	1
-10	41.63	0.022	1
0	39.19	0.021	1
10	36.12	0.019	1
20	38.47	0.020	1
30	45.93	0.024	1
40	44.16	0.023	1
50	48.19	0.026	1



4.8 Frequency Stability (Voltage Variation)

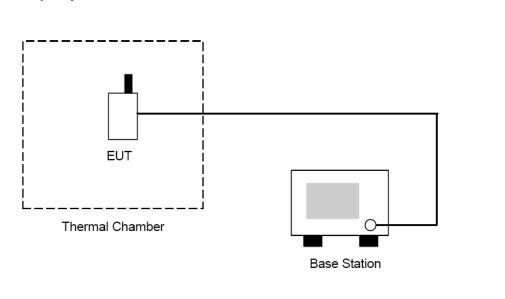
4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

4.8.2 Test Procedure

- 1. The EUT was placed in a temperature chamber at 25±5 $\,^{\circ}$ C and connected as the following section.
- 2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
- 3. The variation in frequency was measured for the worst case.

4.8.3 Test Setup Layout





4.8.4 Test Result

Test Mode: GSM 850 CH190

Level	Voltage [V]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]
Battery full point	13.8	39.19	0.047	0.1
Normal	12.0	35.48	0.042	0.1
Battery cut-off point	10.2	41.63	0.050	0.1

Test Mode: GSM 850 + GPRS CH190

Level	Voltage [V]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]
Battery full point	13.8	44.13	0.053	0.1
Normal	12.0	48.22	0.058	0.1
Battery cut-off point	10.2	49.15	0.059	0.1

Test Mode: PCS 1900 CH661

Level	Voltage [V]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]
Battery full point	13.8	41.55	0.022	1
Normal	12.0	39.61	0.021	1
Battery cut-off point	10.2	38.12	0.020	1

Test Mode: PCS 1900 + GPRS CH661

Level	Voltage [V]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]
Battery full point	13.8	31.60	0.019	1
Normal	12.0	38.54	0.021	1
Battery cut-off point	10.2	39.13	0.021	1

Remark:

1. Normal Voltage=12.0V.

2. Battery cut-off point=10.2 V.



5. <u>List of Measurement Equipments</u>

				Calibration		
Manufacturer	Name of Equipment	Type/Model	Serial Number	Last Cal.	Due Date	
Agilent	Spectrum analyzer	E4408B	MY45107753	May. 03, 2006	May. 03, 2007	
R&S	Receiver	ESCI	100367	May. 03, 2006	May. 03, 2007	
SCHWARZBECK	Trilog Broadband Antenna	VULB 9163	9163-270	Jun. 26, 2006	Jun. 26, 2007	
SCHWARZBECK	Broadband Horn Antenna	BBHA 9120D	9120D-550	Jun. 26, 2006	Jun. 26, 2007	
SCHWARZBECK	Broadband Horn Antenna	BBHA 9170	9170-320	May. 02, 2006	May. 02, 2007	
Agilent	Amplifier	8447D	2944A10961	Jul. 18, 2006	Jul. 18, 2007	
Pattern Measurement Software	ETS-Lindgren	EMQuest TM EMQ-100	NA	NA	NA	
Desktop Computer with Windows XP		Dell Computers	NA	NA	NA	
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	109021	Mar. 01, 2006	Mar. 01, 2007	
Spectrum Analyzer	Agilent	E4445A	MY45300744	Nov. 01, 2006	Nov. 01, 2007	
Loop Dipole	ETS-Lindgren	3127-1880	00052640	Oct. 03, 2005	Oct. 03, 2007	
Loop Dipole	ETS-Lindgren	3127-836	00055272	Oct. 03, 2005	Oct. 03, 2007	
Sleeve Dipole	ETS-Lindgren	3126-1845	00056670	Oct. 31, 2005	Oct. 31, 2007	
Sleeve Dipole	ETS-Lindgren	3126-880	00052705	Nov. 17, 2005	Nov. 17, 2007	
Anechoic Chamber	ETS-Lindgren	AMS 8500	S/N 102165	Mar. 16, 2006	Mar. 16, 2007	
Circularly Polarized Communication Antennas	EMCO	3102	00051714	Mar. 29, 2006	Mar. 29, 2007	
Antenna Positioner Controller	EMCO	2090	00052447	NA	NA	
MAPS Positioner	EMCO	2010/2015	NA	NA	NA	
High Pass Filter	MICRO-TRONICS	HPM50108	020	Sep. 01, 2006	Sep. 01, 2007	
High Pass Filter	MICRO-TRONICS	HPM50111	021	Sep. 01, 2006	Sep. 01, 2007	
Filter	K&L	5TNF-1700/ 2000-0.1N/N	166	NA	NA	
Filter	K&L	3TNF-800/ 1000-0.2N/N	274	NA	NA	
Attenuator	RADIALL	R41572000	0603033073	NA	NA	
Splitter	Powercom	SGR-GFQ-2-D	41106609	NA	NA	
Power divider	Agilent	87302C	3239A00760	NA	NA	



6. <u>Uncertainty Evaluation</u>

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

	Uncert	Uncertainty of χi		
Contribution	dB	Probability Distribution	U(Xi)	
Receiver reading	0.41	Normal(k=2)	0.21	
Antenna factor calibration	0.83	Normal(k=2)	0.42	
Cable loss calibration	0.25	Normal(k=2)	0.13	
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14	
RCV/SPA specification	2.50	Rectangular	0.72	
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29	
Site imperfection	1.43	Rectangular	0.83	
Mismatch	+0.39/-0.41	U-shaped	0.28	
combined standard uncertainty Uc(y)	1.27			
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)		2.54		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

	Uncertainty of ^{Xi}				
Contribution	dB	Probability Distributio	U(Xi)	Ci	$Ci * \mathcal{U}(Xi)$
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\sqrt{1}$ = 0.197 Antenna VSWR $\sqrt{2}$ = 0.194 Uncertainty=20log(1- $\sqrt{1}$ * $\sqrt{2}$ * $\sqrt{3}$)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	4.72				