

Produkte  
Products



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                          |                                                                                                                                    |                                                                                                      |                                              |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------|
| <b>Prüfbericht - Nr.:</b> 17025740 001                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                          | <b>Seite 1 von 19</b>                                                                                                              |                                                                                                      |                                              |                                         |
| <i>Test Report No.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                          | <i>Page 1 of 19</i>                                                                                                                |                                                                                                      |                                              |                                         |
| <b>Auftraggeber:</b><br><i>Client:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            | Shenzhen Flycomos New Technology Co., Ltd.<br>4F. BLDG.10, CHANGFENG INDUSTRIAL PARK, DONGKENG VILLAGE, GONGMING STREET, GUANGMING NEW DISTRICT, SHENZHEN, GUANGDONG, CHINA              |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>Gegenstand der Prüfung:</b><br><i>Test item:</i>                                                                                                                                                                                                                                                                                                                                                                                                                               | GPS Tracker                                                                                                                                                                              |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>Bezeichnung:</b><br><i>Identification:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                     | TK103, TK105, TK106, TK107, TK109                                                                                                                                                        | <b>Serien-Nr.:</b><br><i>Serial No.:</i>                                                                                           | n.a.                                                                                                 |                                              |                                         |
| <b>Wareneingangs-Nr.:</b><br><i>Receipt No.:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                  | 163091623                                                                                                                                                                                | <b>Eingangsdatum:</b><br><i>Date of receipt:</i>                                                                                   | 2012-07-04                                                                                           |                                              |                                         |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br><i>Condition of test item at delivery:</i>                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                          | Test samples received are sufficient for testing and not damaged.                                                                  |                                                                                                      |                                              |                                         |
| <b>Prüfört:</b><br><i>Testing location:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                       | TÜV Rheinland (Guangdong) Ltd.<br>EMC Laboratory<br>Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou, P.R. China<br>FCC Registration No.: 833845                    |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>Prüfgrundlage:</b><br><i>Test specification:</i>                                                                                                                                                                                                                                                                                                                                                                                                                               | FCC CFR47 Part 22: Subpart H Section 22.917<br>FCC CFR47 Part 24: Subpart E Section 24.238<br>FCC CFR47 Part 15: Subpart B Section 15.107<br>FCC CFR47 Part 15: Subpart B Section 15.109 |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>Prüfergebnis:</b><br><i>Test Result:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                       | Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).<br><i>The test item passed the test specification(s).</i>                                                                 |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>Prüflaboratorium:</b><br><i>Testing Laboratory:</i>                                                                                                                                                                                                                                                                                                                                                                                                                            | TÜV Rheinland (Shenzhen) Co., Ltd.                                                                                                                                                       |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>geprüft/ tested by:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                          | <b>kontrolliert/ reviewed by:</b>                                                                                                  |                                                                                                      |                                              |                                         |
| <br>2012-07-04 Owen Tian/ Project Manager                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                          | <br>2012-07-20 Winnie Hou/ Technical Certifier |                                                                                                      |                                              |                                         |
| <b>Datum</b><br><i>Date</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Name/Stellung</b><br><i>Name/Position</i>                                                                                                                                             | <b>Unterschrift</b><br><i>Signature</i>                                                                                            | <b>Datum</b><br><i>Date</i>                                                                          | <b>Name/Stellung</b><br><i>Name/Position</i> | <b>Unterschrift</b><br><i>Signature</i> |
| <b>Sonstiges/ Other Aspects:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                          |                                                                                                                                    |                                                                                                      |                                              |                                         |
| <b>Abkürzungen:</b> P(ass) = entspricht Prüfgrundlage<br>F(ail) = entspricht nicht Prüfgrundlage<br>N/A = nicht anwendbar<br>NIT = nicht getestet                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                          |                                                                                                                                    | <b>Abbreviations:</b> P(ass) = passed<br>F(ail) = failed<br>N/A = not applicable<br>NIT = not tested |                                              |                                         |
| <b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b><br><i>This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i> |                                                                                                                                                                                          |                                                                                                                                    |                                                                                                      |                                              |                                         |

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## TEST SUMMARY

### **5.1.1 SPURIOUS EMISSION**

*RESULT: Passed*

### **5.1.2 CONDUCTED EMISSIONS**

*RESULT: Passed*

### **5.1.3 RADIATED EMISSIONS**

*RESULT: Passed*

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## **1. General Remarks**

### **1.1 Complementary Materials**

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test Result

## **2. Test Sites**

### **2.1 Test Facilities**

TÜV Rheinland (Guangdong) Ltd.  
EMC Laboratory

Guangzhou Auto Market,  
Yuan Gang Section of Guangshan Road,  
Guangzhou, P.R. China

FCC Registration No.: 833845

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

| Kind of Equipment                              | Manufacturer                   | Type                    | S/N     | Calibrated until |
|------------------------------------------------|--------------------------------|-------------------------|---------|------------------|
| <b>Spurious emission and Radiated emission</b> |                                |                         |         |                  |
| EMI Test Receiver                              | Rohde & Schwarz                | ESCI-3                  | 100216  | 2012-11-26       |
| Spectrum Analyzer                              | Rohde & Schwarz                | FSP30                   | 100286  | 2012-08-24       |
| Trilog-Broadband Antenna                       | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB9168                | 209     | 2012-11-07       |
| Double-Ridged Waveguide Horn Antenna           | Rohde & Schwarz                | HF906                   | 100385  | 2012-08-18       |
| Pre-amplifier                                  | MITEQ                          | AFS42-00101800-25-S-42  | 1101599 | 2012-07-31       |
| Standard Gain Horn Antenna                     | EMCO                           | 3160-09                 | 21642   | N/A              |
| Pre-amplifier                                  | MITEQ                          | AFS33-18002650-30-8P-44 | 1108282 | 2012-07-31       |
| 3m Anechoic Chamber                            | Albatross Project GmbH         | N/A                     | N/A     | 2013-04-16       |
| Loop Antenna                                   | Rohde & Schwarz                | HFH2-Z2                 | 100111  | 2012-12-11       |
| <b>Conducted Emission</b>                      |                                |                         |         |                  |
| EMI Test Receiver                              | Rohde & Schwarz                | ESCS30                  | 100316  | 2013-03-16       |
| Artificial Mains Network                       | Rohde & Schwarz                | ESH2-Z5                 | 100114  | 2013-03-16       |

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

**Table 2: Measurement Uncertainty**

| Items                                         | Expanded Uncertainty        |        |
|-----------------------------------------------|-----------------------------|--------|
|                                               | ULab                        | UCISPR |
| Conducted Emission 9 to 150 kHz, mains port   | 4.0                         |        |
| Conducted Emission 0.15 to 30 MHz, mains port | 2.68                        | 3.6    |
| Radiated Emission 9kHz to 30MHz               | 4.42<br>Under consideration |        |
| Radiated Emission 30 to 1000MHz               | 4.94                        | 5.2    |
| Radiated Emission above 1000MHz               | 2.22<br>Under consideration |        |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

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## **2.7 Status of Facility Used for Testing**

The TÜV Rheinland (Guangdong) Ltd. test facility located at Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUTs are GPS tracker which working based on existing GSM/GPRS network and GPS satellites, this product can locate and monitor any remote targets by SMS or GPRS. All models are identical in function, circuit design and components employed, except different enclosure and color. For details refer to the User Manual and Circuit Diagram.

#### 3.2 Ratings and System Details

**Table 3: Rating of EUT**

|                    |                                   |
|--------------------|-----------------------------------|
| Kind of Equipment: | GPS Tracker                       |
| Type Designation:  | TK103, TK105, TK106, TK107, TK109 |
| FCC ID:            | AZTTK103-TK109                    |
| Antenna gain       | 1dBi                              |

**Table 4: Technical Specification of EUT**

| mode |          | Work Frequency (MHz)   |                           |
|------|----------|------------------------|---------------------------|
|      |          | Transmitting frequency | Receiving frequency (MHz) |
| GSM  | GSM850   | 824-849                | 869-894                   |
|      | PCS 1900 | 1850-1910              | 1930-1990                 |
| GPS  |          | 1575.42                |                           |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. Traffic mode GSM 850
- B. Traffic mode PCS 1900
- C. Idle mode GSM 850
- D. Idle mode PCS 1900
- E. GPS receiving
- F. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

### 3.5 Submitted Documents

- |                         |                      |
|-------------------------|----------------------|
| - Bill of Material      | - Circuit Diagram    |
| - PCB Layout            | - Instruction Manual |
| - Photo Document        | - Rating Label       |
| - Technical Description |                      |

## 4. Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2003.

Due to models' difference indicated in clause 3.1, full test was applied on model TK103 only.

Full test was applied on all test modes, but only worst case was shown.

### 4.3 Special Accessories and Auxiliary Equipment

Auxiliary equipment:

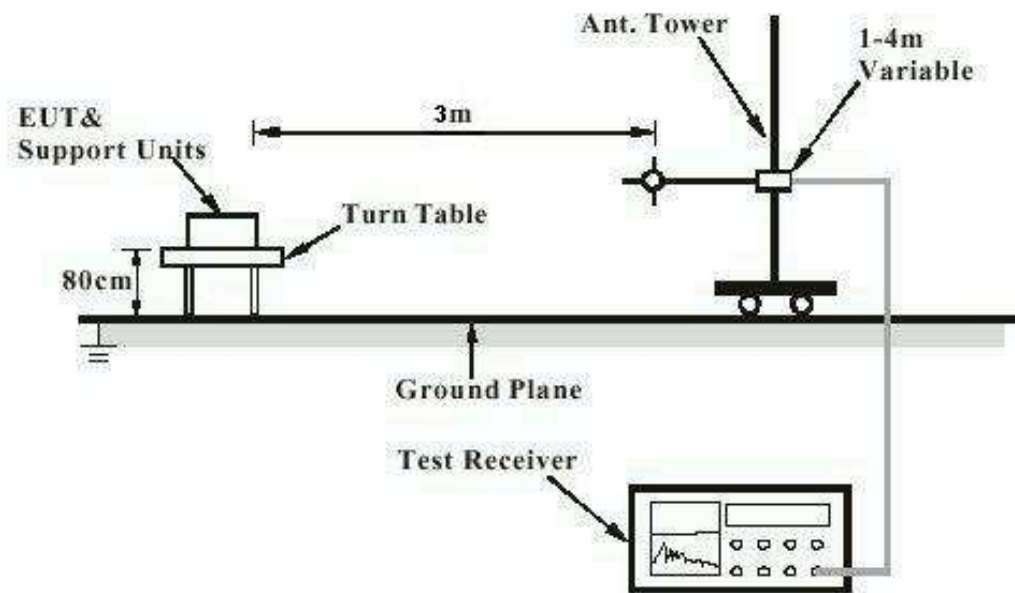
| Description                      | Manufacturer | Model  | S/N    |
|----------------------------------|--------------|--------|--------|
| Radio<br>Communication<br>Tester | R&S          | CMU200 | 112016 |

### 4.4 Countermeasures to achieve EMC Compliance

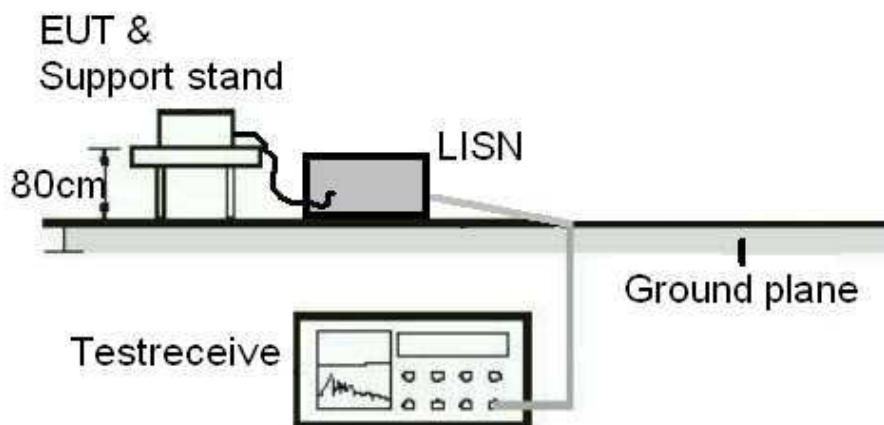
The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

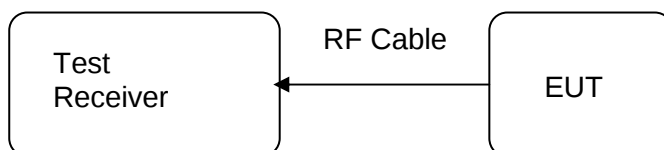
Diagram of Measurement Configuration for Radiation Test



### Diagram of Measurement Equipment Configuration for Mains Conduction Measurement



### Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement



## 5. Test Results

The EUT employs one FCC approved "Limited Single Modular" with FCC ID UDV-1005242010007 already.

As all conditions listed in the FCC Grant are fulfilled, hence only Radiated Spurious Emission test according to FCC part 22.917 and part 24.238, and was carried out for such modular. For other testing data of the modular, refer to test report SHEMA10050067102 issued by SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. dated on Jun 17, 2010.

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Spurious Emission

**RESULT:****Passed**

|                   |   |                                     |
|-------------------|---|-------------------------------------|
| Date of testing   | : | 2012-05-24                          |
| Test standard     | : | FCC part 22.917<br>FCC Part 24.238  |
| Basic standard    | : | ANSI C63.4: 2003                    |
| Limits            | : | Refer to FCC part 22.917 and 24.238 |
| Kind of test site | : | 3m Semi-Anechoic Chamber            |

**Test setup**

|                      |   |         |
|----------------------|---|---------|
| Operation mode       | : | A, B    |
| Ambient temperature  | : | 23°C    |
| Relative humidity    | : | 50%     |
| Atmospheric pressure | : | 101 kPa |

**Remark:**

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test setup photos.

For details refer to Appendix 1.

## 5.1.2 Conducted emissions

**RESULT:****Passed**

|                   |   |                    |
|-------------------|---|--------------------|
| Date of testing   | : | 2012-05-11         |
| Test standard     | : | FCC Part 15.107(a) |
| Basic standard    | : | ANSI C63.4: 2003   |
| Frequency range   | : | 0.15 – 30MHz       |
| Limits            | : | FCC Part 15.107(a) |
| Kind of test site | : | Shield room        |

**Test setup**

|                      |   |               |
|----------------------|---|---------------|
| Input Voltage        | : | DC 12V        |
| Operation Mode       | : | A,B,C,D       |
| Earthing             | : | Not connected |
| Ambient temperature  | : | 22°C          |
| Relative humidity    | : | 55%           |
| Atmospheric pressure | : | 101 kPa       |

For details refer to Appendix 1.

Testing was performed in all modes, the worst-case was recorded in this test report.

### 5.1.3 Radiated emissions

**RESULT:****Passed**

|                   |   |                          |
|-------------------|---|--------------------------|
| Date of testing   | : | 2012-05-14               |
| Test standard     | : | FCC Part 15.109          |
| Basic standard    | : | ANSI C63.4: 2003         |
| Test frequency    | : | 30 - 6000MHz             |
| Limits            | : | FCC Part 15.109(a)       |
| Kind of test site | : | 3m Semi-Anechoic Chamber |

**Test Setup**

|                      |   |               |
|----------------------|---|---------------|
| Input Voltage        | : | DC 12V        |
| Operation Mode       | : | C,D,E         |
| Earthing             | : | Not connected |
| Ambient temperature  | : | 23°C          |
| Relative humidity    | : | 50%           |
| Atmospheric pressure | : | 101 kPa       |

For details refer to Appendix 1.

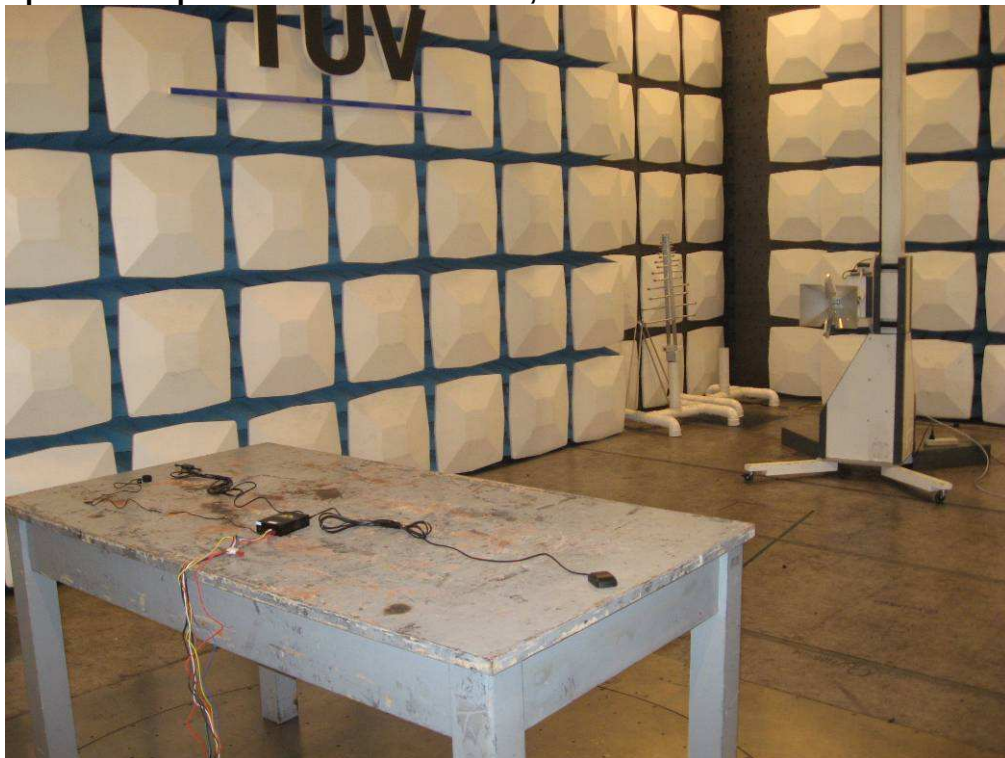
The Radiated Emissions testing was performed in the X and Z axis mode. The X Axis mode is the worst-case recorded in this test report.

## 6. Photographs of the Test Set-Up

Photograph 1: Set-up for Radiated Emissions, below 1GHz



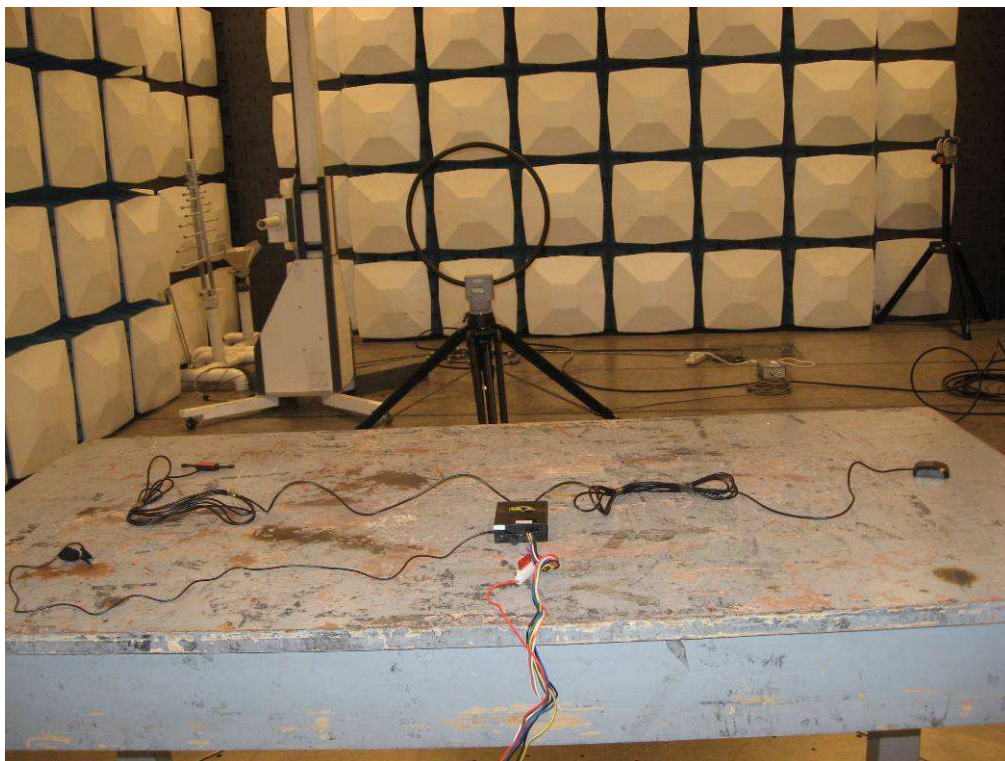
Photograph 2: Set-up for Radiated Emissions, above 1GHz



**Photograph 3: Set-up for Coducted Emissions**



**Photograph 4: Set-up for Spurious Emissions, below 30MHz**



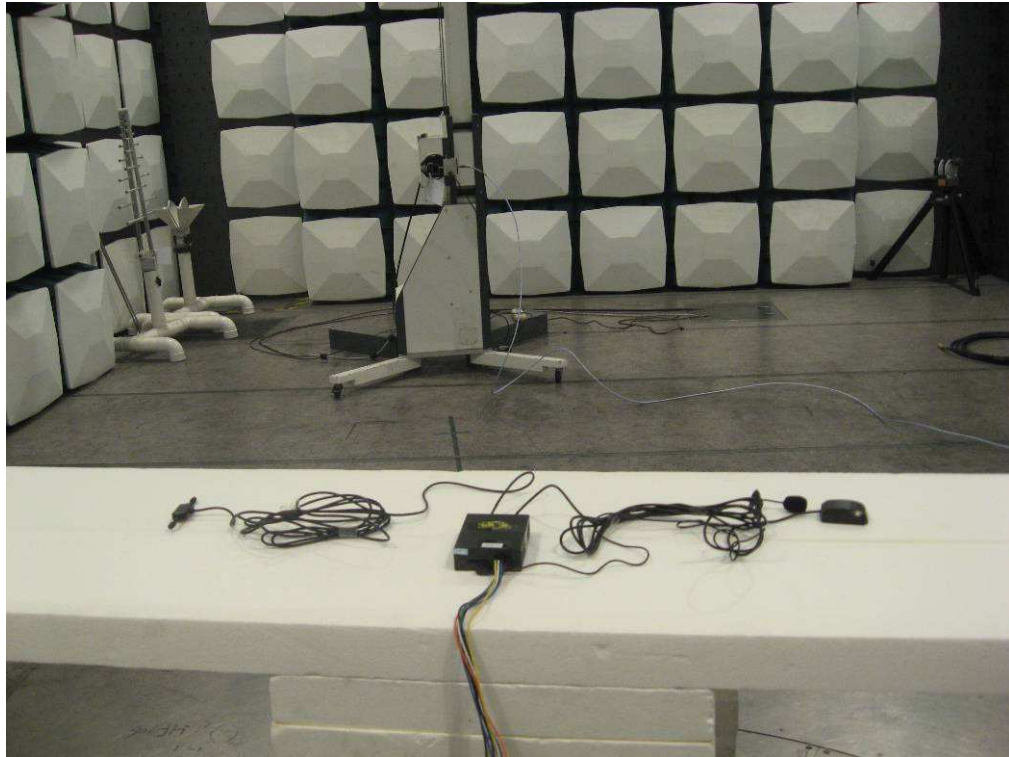
**Photograph 5: Set-up for Spurious Emissions (30MHz-1GHz)**



**Photograph 6: Set-up for Spurious Emissions (1GHz-18GHz)**



**Photograph 7: Set-up for Spurious Emissions (18GHz-26GHz)**



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**Figure 1: Test figure of spurious emissions, mode A, Horizontal polarity  
(9kHz – 30MHz)**

TUV Rheinland (Guangdong) Ltd.

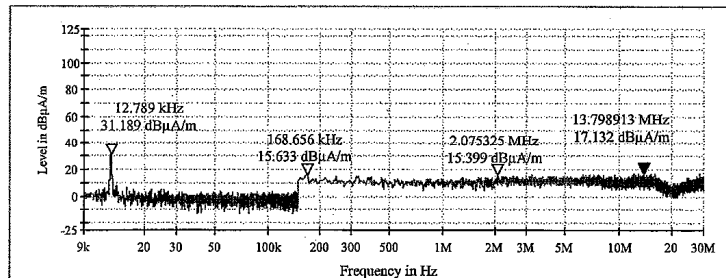
EMC Test Service Hotline: +86-20-28391188

## EMC Test Record (Emission)

### Common Information

|                     |                                 |
|---------------------|---------------------------------|
| Manufacturer:       | Flycomos                        |
| Test Item:          | GPS Tracker                     |
| Identification:     | TK103                           |
| Test Standard:      | FCC Part 22/24                  |
| Test Detail:        | Radiated Emission               |
| Operation Mode:     | A                               |
| Climate Condition:  | 23 °C; 50 %RH; 101 kPa.         |
| Test Voltage/ Freq: | DC 12V                          |
| Receipt No:         | 163091623 100                   |
| Report No:          | 17025740 001                    |
| Result:             | Pass                            |
| Comment:            | Test distance is 3m, Horizontal |

|                  |                   |
|------------------|-------------------|
| Subrange 1       |                   |
| Frequency Range: | 9K-30MHz          |
| Receiver:        | TUV ESCI 3        |
| Transducer:      | 9K to 30M HFH2-Z2 |



Date: 5/24/2012 - Time: 18:55:12

Tested by:  Reviewed by: 

**Figure 2: Test figure of spurious emissions, mode A, Vertical polarity  
(9kHz – 30MHz)**

TUV Rheinland (Guangdong) Ltd.

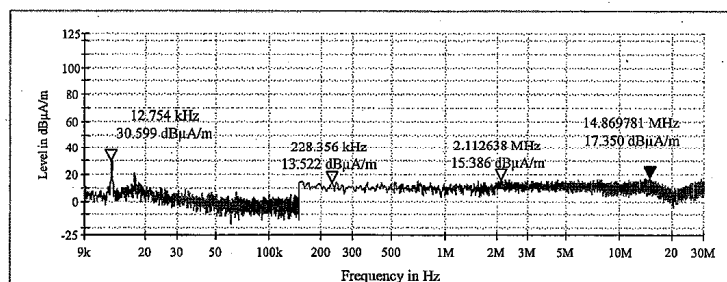
EMC Test Service Hotline: +86-20-28391188

## EMC Test Record (Emission)

### Common Information

|                     |                               |
|---------------------|-------------------------------|
| Manufacturer:       | Flycomos                      |
| Test Item:          | GPS Tracker                   |
| Identification:     | TK103                         |
| Test Standard:      | FCC Part 22/24                |
| Test Detail:        | Radiated Emission             |
| Operation Mode:     | A                             |
| Climate Condition:  | 23. °C; 50 %RH; 101 kPa.      |
| Test Voltage/ Freq: | DC 12V                        |
| Receipt No:         | 163091623 100                 |
| Report No:          | 17025740 001                  |
| Result:             | Pass                          |
| Comment:            | Test distance is 3m, Vertical |

|                  |                   |
|------------------|-------------------|
| Subrange 1       |                   |
| Frequency Range: | 9K-30MHz          |
| Receiver:        | TUV ESCI 3        |
| Transducer:      | 9K to 30M HFH2-Z2 |



Date: 5/24/2012 - Time: 19:11:45

Tested by:  Reviewed by: 

**Figure 3: Test figure of spurious emissions, mode A, Horizontal polarity (30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

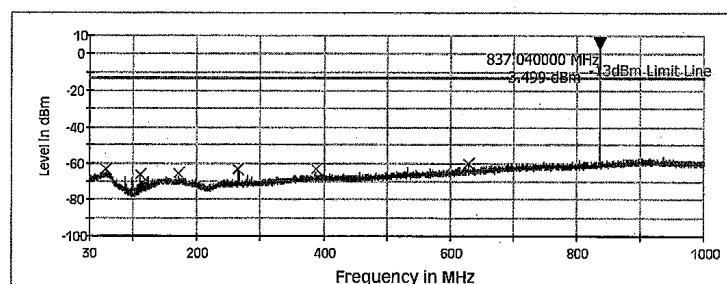
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: A  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

Spurious TUV 30MHz to 1GHz Hor



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK (dB) | Limit PK (dBm) |
|-----------------|---------------|----------------|-----------------|--------------|------------|----------------|----------------|
| 55.350000       | -63.5         | 1000.0         | 100.000         | H            | -79.3      | 50.5           | -13.0          |
| 110.050000      | -66.2         | 1000.0         | 100.000         | H            | -88.1      | 53.2           | -13.0          |
| 171.150000      | -65.7         | 1000.0         | 100.000         | H            | -82.3      | 52.7           | -13.0          |
| 265.350000      | -63.6         | 1000.0         | 100.000         | H            | -83.7      | 50.6           | -13.0          |
| 387.100000      | -63.7         | 1000.0         | 100.000         | H            | -80.1      | 50.7           | -13.0          |
| 629.200000      | -60.5         | 1000.0         | 100.000         | H            | -76.4      | 47.5           | -13.0          |

Date: 5/25/2012 - Time: 12:17:25

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_



**Figure 4: Test figure of spurious emissions, mode A, Vertical polarity (30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

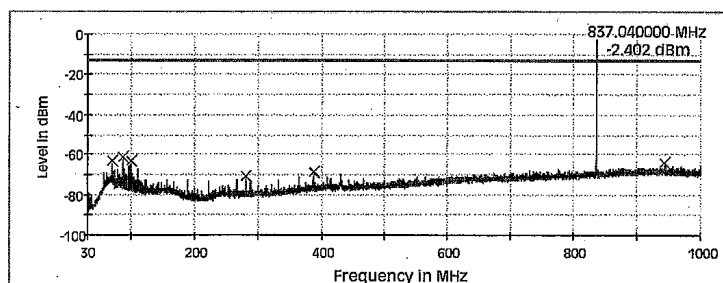
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: A  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

Spurious TUV 30MHz to 1GHz Ver



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin PK+ (dB) | Limit PK+ (dBm) |
|-----------------|---------------|----------------|-----------------|--------------|-----------|-----------------|-----------------|
| 69.700000       | -63.5         | 1000.0         | 100.000         | V            | -77.7     | 50.5            | -13.0           |
| 85.600000       | -61.5         | 1000.0         | 100.000         | V            | -79.9     | 48.5            | -13.0           |
| 99.400000       | -63.4         | 1000.0         | 100.000         | V            | -81.3     | 50.4            | -13.0           |
| 280.000000      | -70.7         | 1000.0         | 100.000         | V            | -83.7     | 57.7            | -13.0           |
| 387.100000      | -68.7         | 1000.0         | 100.000         | V            | -80.2     | 55.7            | -13.0           |
| 944.500000      | -64.2         | 1000.0         | 100.000         | V            | -72.1     | 51.2            | -13.0           |

Date: 5/25/2012 - Time: 12:11:53

Tested by:  Reviewed by: 

**Figure 5: Test figure of spurious emissions, mode A, Horizontal polarity (1GHz –18GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

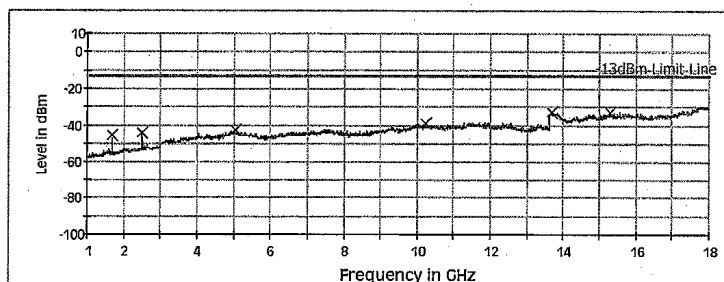
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: A  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 1GHz-18GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Spurious TUV 1 to 18GHz HF907.364 Hor



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin -PK+ (dB) | Limit PK+ (dBm) |
|-----------------|---------------|----------------|-----------------|--------------|-----------|------------------|-----------------|
| 1671.520000     | -45.2         | 1000.0         | 1000.000        | H            | -98.2     | 32.2             | -13.0           |
| 2513.020000     | -43.8         | 1000.0         | 1000.000        | H            | -94.6     | 30.8             | -13.0           |
| 5037.520000     | -42.3         | 1000.0         | 1000.000        | H            | -84.3     | 29.3             | -13.0           |
| 10214.020000    | -38.7         | 1000.0         | 1000.000        | H            | -75.9     | 25.7             | -13.0           |
| 13690.480000    | -32.4         | 1000.0         | 1000.000        | H            | -78.9     | 19.4             | -13.0           |
| 15305.500000    | -32.7         | 1000.0         | 1000.000        | H            | -78.3     | 19.7             | -13.0           |

Date: 5/24/2012 - Time: 11:08:40

Tested by:



Reviewed by:



**Figure 6: Test figure of spurious emissions, mode A, Vertical polarity (1GHz – 18GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

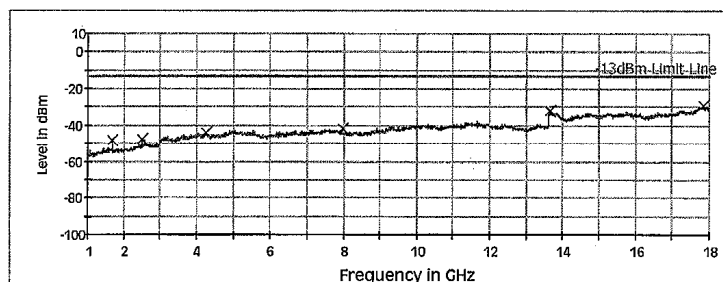
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: A  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 1GHz-18GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Spurious TUV 1 to 18GHz HF907.364 Ver



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin PK (dB) | Limit PK (dBm) |
|-----------------|---------------|----------------|-----------------|--------------|-----------|----------------|----------------|
| 1671.520000     | -48.5         | 1000.0         | 1000.000        | V            | -97.3     | 35.5           | -13.0          |
| 2495.980000     | -47.8         | 1000.0         | 1000.000        | V            | -93.4     | 34.8           | -13.0          |
| 4264.000000     | -43.9         | 1000.0         | 1000.000        | V            | -86.4     | 30.9           | -13.0          |
| 7970.020000     | -41.5         | 1000.0         | 1000.000        | V            | -81.6     | 28.5           | -13.0          |
| 13664.980000    | -32.2         | 1000.0         | 1000.000        | V            | -78.5     | 19.2           | -13.0          |
| 17838.520000    | -28.7         | 1000.0         | 1000.000        | V            | -74.0     | 15.7           | -13.0          |

Date: 5/24/2012 - Time: 11:01:27

Tested by:

Reviewed by:



**Figure 7: Test figure of spurious emissions, mode A, Horizontal polarity (18GHz – 26GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

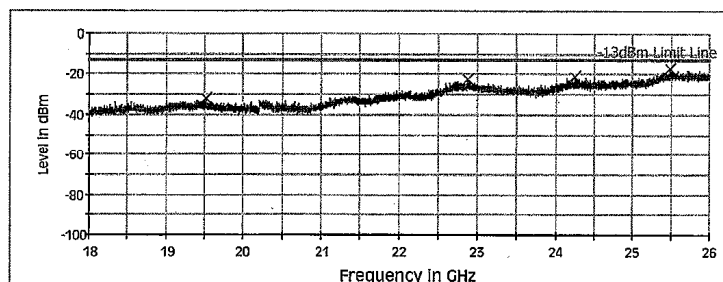
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: A  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 18GHz-26.5GHz  
Receiver: TUV 3160-09  
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09

Spurious TUV 18 to 26GHz Hor



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin - PK+ (dB) | Limit- PK+ (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|------------|-------------------|------------------|
| 19520.000000    | -31.8         | 1000.0          | 1000.000        | H            | -75.9      | 18.8              | -13.0            |
| 22882.000000    | -22.4         | 1000.0          | 1000.000        | H            | -68.1      | 9.4               | -13.0            |
| 24250.000000    | -20.8         | 1000.0          | 1000.000        | H            | -68.0      | 7.8               | -13.0            |
| 25484.000000    | -19.1         | 1000.0          | 1000.000        | H            | -63.0      | 6.1               | -13.0            |

Date: 5/24/2012 - Time: 11:38:50

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_



**Figure 8: Test figure of spurious emissions, mode A, Vertical polarity  
(18GHz – 26GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

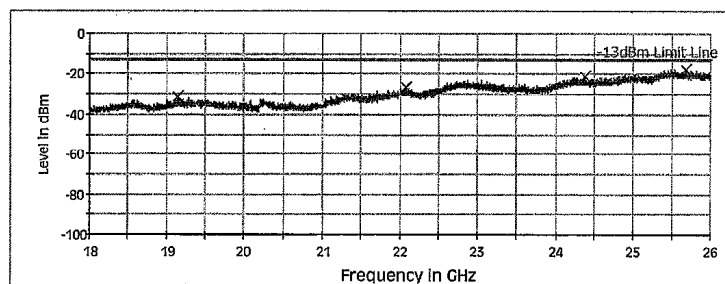
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: A  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 18GHz-26.5GHz  
Receiver: TUV 3160-09  
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09

Spurious TUV 18 to 26GHz Ver



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK+ (dB) | Limit PK+ (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|------------|-----------------|-----------------|
| 19148.000000    | -31.2         | 1000.0          | 1000.000        | V            | -75.5      | 18.2            | -13.0           |
| 22075.000000    | -26.3         | 1000.0          | 1000.000        | V            | -70.3      | 13.3            | -13.0           |
| 24367.000000    | -21.2         | 1000.0          | 1000.000        | V            | -67.4      | 8.2             | -13.0           |
| 25682.000000    | -19.7         | 1000.0          | 1000.000        | V            | -64.2      | 6.7             | -13.0           |

Date: 5/24/2012 - Time: 11:41:35

Tested by:  Reviewed by: 

**Figure 9: Test figure of spurious emissions, mode B, Horizontal polarity  
(9kHz – 30MHz)**

TUV Rheinland (Guangdong) Ltd.

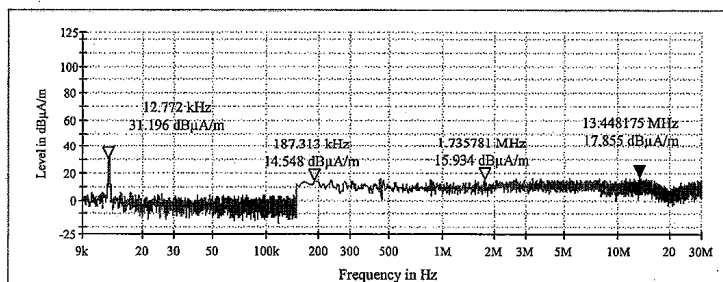
EMC Test Service Hotline: +86-20-28391188

## EMC Test Record (Emission)

### Common Information

|                     |                                 |
|---------------------|---------------------------------|
| Manufacturer:       | Flycomos                        |
| Test Item:          | GPS Tracker                     |
| Identification:     | TK103                           |
| Test Standard:      | FCC Part 22/24                  |
| Test Detail:        | Radiated Emission               |
| Operation Mode:     | B                               |
| Climate Condition:  | 23 °C: 50 %RH: 101 kPa.         |
| Test Voltage/ Freq: | DC 12V                          |
| Receipt No:         | 163091623 100                   |
| Report No:          | 17025740 001                    |
| Result:             | Pass                            |
| Comment:            | Test distance is 3m, Horizontal |

|                  |                   |
|------------------|-------------------|
| Subrange 1       |                   |
| Frequency Range: | 9K-30MHz          |
| Receiver:        | TUV ESCI 3        |
| Transducer:      | 9K to 30M HFH2-Z2 |



Date: 5/24/2012 - Time: 19:18:51

Tested by:  Reviewed by: 

**Figure 10: Test figure of spurious emissions, mode B, Vertical polarity  
(9kHz – 30MHz)**

TUV Rheinland (Guangdong) Ltd.

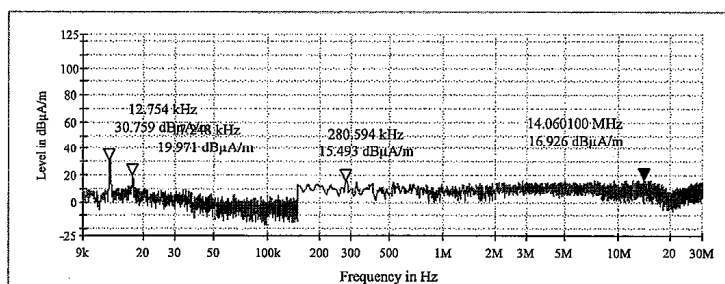
EMC Test Service Hotline: +86-20-28391188

## EMC Test Record (Emission)

### Common Information

|                     |                               |
|---------------------|-------------------------------|
| Manufacturer:       | Flycomos                      |
| Test Item:          | GPS Tracker                   |
| Identification:     | TK103                         |
| Test Standard:      | FCC Part 22/24                |
| Test Detail:        | Radiated Emission             |
| Operation Mode:     | B                             |
| Climate Condition:  | 23 °C; 50 %RH; 101 kPa.       |
| Test Voltage/ Freq: | DC 12V                        |
| Receipt No:         | 163091623 100                 |
| Report No:          | 17025740 001                  |
| Result:             | Pass                          |
| Comment:            | Test distance is 3m, Vertical |

|                  |                   |
|------------------|-------------------|
| Subrange 1       |                   |
| Frequency Range: | 9K-30MHz          |
| Receiver:        | TUV ESCI 3        |
| Transducer:      | 9K to 30M HFH2-Z2 |



Date: 5/24/2012 - Time: 19:13:50

Tested by:  Reviewed by: 

**Figure 11: Test figure of spurious emissions, mode B, Horizontal polarity (30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

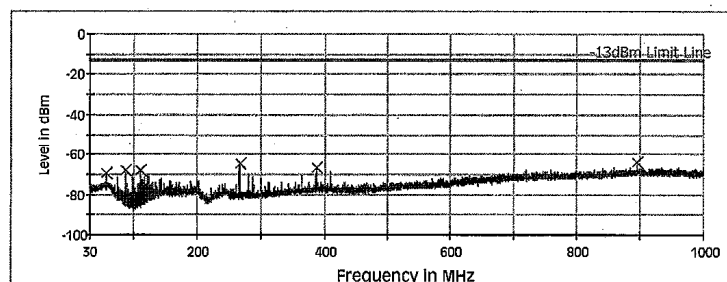
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: B  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

Spurious TUV 30MHz to 1GHz Hor



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin PK+ (dB) | Limit PK+ (dBm) |
|-----------------|---------------|----------------|-----------------|--------------|-----------|-----------------|-----------------|
| 55.200000       | -69.4         | 1000.0         | 100.000         | H            | -79.3     | 56.4            | -13.0           |
| 85.550000       | -68.3         | 1000.0         | 100.000         | H            | -87.4     | 55.3            | -13.0           |
| 110.050000      | -67.7         | 1000.0         | 100.000         | H            | -88.1     | 54.7            | -13.0           |
| 265.450000      | -64.7         | 1000.0         | 100.000         | H            | -83.7     | 51.7            | -13.0           |
| 387.100000      | -66.4         | 1000.0         | 100.000         | H            | -80.1     | 53.4            | -13.0           |
| 896.200000      | -64.2         | 1000.0         | 100.000         | H            | -72.1     | 51.2            | -13.0           |

Date: 5/25/2012 - Time: 12:00:19

Tested by:  Reviewed by: 

LDX  
2012-05-25  
Checked

**Figure 12: Test figure of spurious emissions, mode B, Vertical polarity  
(30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

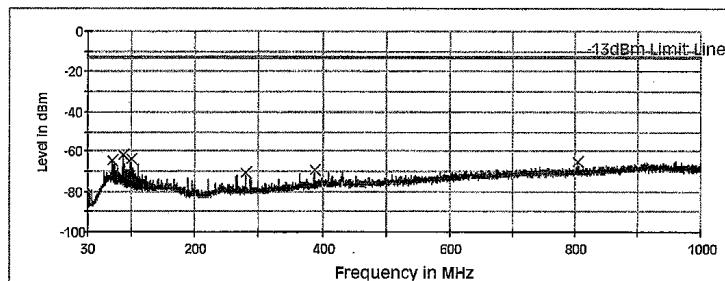
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: B  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

Spurious TUV 30MHz to 1GHz Ver



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin PK+ (dB) | Limit PK+ (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|-----------|-----------------|-----------------|
| 69.700000       | -64.3         | 1000.0          | 100.000         | V            | -77.7     | 51.3            | -13.0           |
| 85.600000       | -61.6         | 1000.0          | 100.000         | V            | -79.9     | 48.6            | -13.0           |
| 99.400000       | -64.1         | 1000.0          | 100.000         | V            | -81.3     | 51.1            | -13.0           |
| 280.000000      | -70.9         | 1000.0          | 100.000         | V            | -83.7     | 57.9            | -13.0           |
| 387.100000      | -69.5         | 1000.0          | 100.000         | V            | -80.2     | 56.5            | -13.0           |
| 805.000000      | -65.1         | 1000.0          | 100.000         | V            | -74.1     | 52.1            | -13.0           |

Date: 5/25/2012 - Time: 12:04:46

Tested by:

Reviewed by:



**Figure 13: Test figure of spurious emissions, mode B, Horizontal polarity (1GHz –18GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

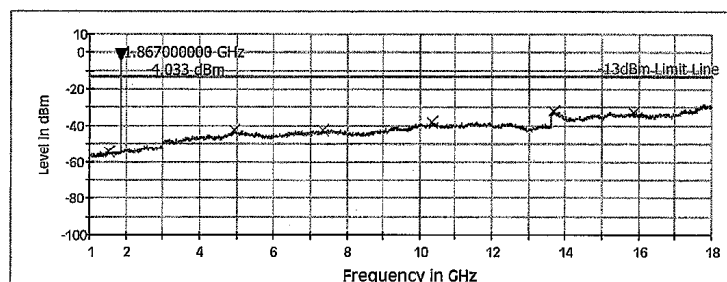
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: B  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 1GHz-18GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Spurious TUV 1 to 18GHz HF907.364 Hor



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK+ (dB) | Limit PK+ (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|------------|-----------------|-----------------|
| 1526.980000     | -54.3         | 1000.0          | 1000.000        | H            | -98.7      | 41.3            | -13.0           |
| 4952.500000     | -42.1         | 1000.0          | 1000.000        | H            | -84.4      | 29.1            | -13.0           |
| 7324.000000     | -42.1         | 1000.0          | 1000.000        | H            | -81.8      | 29.1            | -13.0           |
| 10349.980000    | -37.9         | 1000.0          | 1000.000        | H            | -75.9      | 24.9            | -13.0           |
| 13673.500000    | -31.8         | 1000.0          | 1000.000        | H            | -78.8      | 18.8            | -13.0           |
| 15857.980000    | -33.0         | 1000.0          | 1000.000        | H            | -77.3      | 20.0            | -13.0           |

Date: 5/24/2012 - Time: 10:21:29

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_



**Figure 14: Test figure of spurious emissions, mode B, Vertical polarity (1GHz – 18GHz)**

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

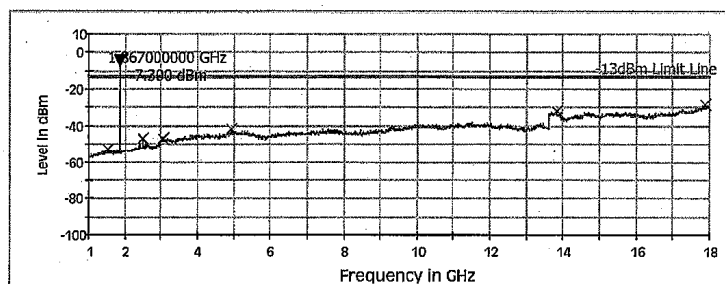
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: B  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 1GHz-18GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Spurious TUV 1 to 18GHz HF907.364 Ver



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK (dB) | Limit PK (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|------------|----------------|----------------|
| 1526.980000     | -52.6         | 1000.0          | 1000.000        | V            | -97.5      | 39.6           | -13.0          |
| 2495.980000     | -47.2         | 1000.0          | 1000.000        | V            | -93.4      | 34.2           | -13.0          |
| 3048.520000     | -46.5         | 1000.0          | 1000.000        | V            | -90.4      | 33.5           | -13.0          |
| 4943.980000     | -41.3         | 1000.0          | 1000.000        | V            | -84.4      | 28.3           | -13.0          |
| 13817.980000    | -31.6         | 1000.0          | 1000.000        | V            | -78.8      | 18.6           | -13.0          |
| 17897.980000    | -28.0         | 1000.0          | 1000.000        | V            | -73.8      | 15.0           | -13.0          |

Date: 5/24/2012 - Time: 10:30:15

Tested by:  Reviewed by: 

**Figure 15: Test figure of spurious emissions, mode B, Horizontal polarity (18GHz – 26GHz)**

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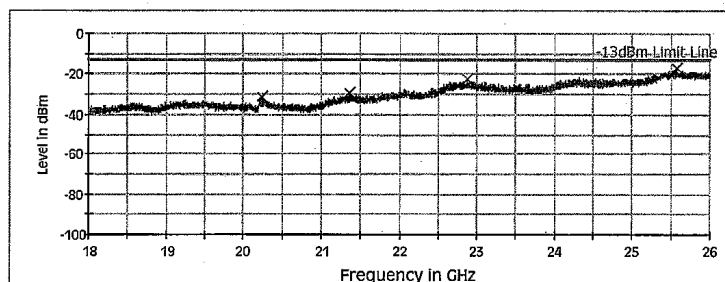
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: B  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 18GHz-26GHz  
Receiver: TUV 3160-09  
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09

Spurious TUV 18 to 26GHz Hor



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK (dB) | Limit PK (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|------------|----------------|----------------|
| 20237.000000    | -31.0         | 1000.0          | 1000.000        | H            | -76.3      | 18.0           | -13.0          |
| 21351.000000    | -29.2         | 1000.0          | 1000.000        | H            | -74.3      | 16.2           | -13.0          |
| 22880.000000    | -22.2         | 1000.0          | 1000.000        | H            | -68.1      | 9.2            | -13.0          |
| 25577.000000    | -19.3         | 1000.0          | 1000.000        | H            | -63.3      | 6.3            | -13.0          |

Date: 5/24/2012 - Time: 11:50:29

Tested by:  Reviewed by: 

**Figure 16: Test figure of spurious emissions, mode B, Vertical polarity  
(18GHz – 26GHz)**

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## EMC Test Record (Emission)

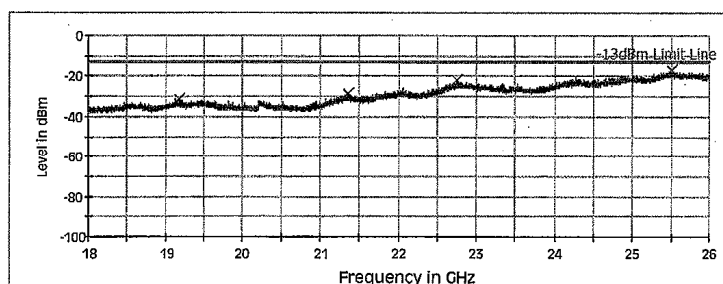
### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 22/24  
Test Detail: Radiated Emission  
Operation Mode: B  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

### Subrange 1

Frequency Range: 18GHz-26GHz  
Receiver: TUV 3160-09  
Transducer: TUV SAC 3160-09/ TUV FSP30-TUV SAC 3160-09

Spurious TUV 18 to 26GHz Ver



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBm) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin -PK+ (dB) | Limit- PK+ (dBm) |
|-----------------|---------------|-----------------|-----------------|--------------|------------|------------------|------------------|
| 19180.000000    | -31.4         | 1000.0          | 1000.000        | V            | -75.5      | 18.4             | -13.0            |
| 21359.000000    | -28.7         | 1000.0          | 1000.000        | V            | -74.0      | 15.7             | -13.0            |
| 22756.000000    | -21.9         | 1000.0          | 1000.000        | V            | -67.9      | 8.9              | -13.0            |
| 25501.000000    | -19.6         | 1000.0          | 1000.000        | V            | -63.2      | 6.6              | -13.0            |

Date: 5/24/2012 - Time: 11:46:04

Tested by:



Reviewed by:



Figure 17: Test figure of conducted emissions, mode A

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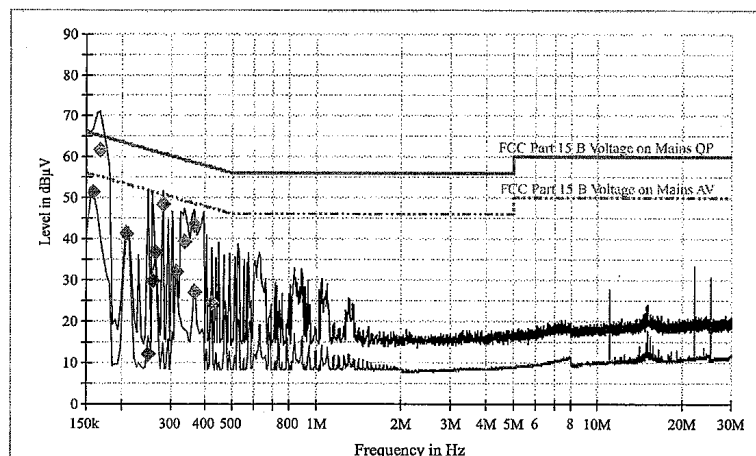
## EMC Test Record (EMISSION)

### Test Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Conducted Emission  
Operation Mode: A  
Climate Condition: 22 °C; 55 %RH; 101 kPa.  
Test Voltage/ Freq.: DC 12 V  
Port / Line: DC Mains  
Receipt No.: 163091623 100  
Report No.: 17025740 001  
Result: Pass  
Comment: /

Hardware Setup: 1phase LISN ESH3-Z5 to ESCS 30  
Level Unit: dBµV

| Subrange       | Detectors     | IF Bandwidth | Step Size | Meas. Time | Receiver |
|----------------|---------------|--------------|-----------|------------|----------|
| 150kHz - 30MHz | Peak; Average | 9kHz         | 4.5kHz    | 10ms       | ESCS 30  |



Sign-off Test Data

5/11/2012, 9:40:26

Tested by:



Reviewed by:



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### Final Result 1

| Frequency (MHz) | QuasiPeak (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment |
|-----------------|------------------|-----------------|-----------------|----|------|------------|-------------|--------------|---------|
| 0.168000        | 61.7             | 1000.0          | 9.000           | GN | -    | 10.2       | 3.4         | 65.1         |         |
| 0.249000        | 11.9             | 1000.0          | 9.000           | GN | +    | 10.2       | 49.9        | 61.8         |         |
| 0.258000        | 29.7             | 1000.0          | 9.000           | GN | +    | 9.9        | 31.8        | 61.5         |         |
| 0.280500        | 48.5             | 1000.0          | 9.000           | GN | +    | 9.9        | 12.3        | 60.8         |         |
| 0.339000        | 39.2             | 1000.0          | 9.000           | GN | +    | 9.9        | 20.0        | 59.2         |         |
| 0.366000        | 43.2             | 1000.0          | 9.000           | GN | -    | 10.0       | 15.4        | 58.6         |         |

### Final Result 2

| Frequency (MHz) | Average (dBμV) | Meas. Time (ms) | Bandwidth (kHz) | PE | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) | Comment |
|-----------------|----------------|-----------------|-----------------|----|------|------------|-------------|--------------|---------|
| 0.159000        | 51.3           | 1000.0          | 9.000           | GN | -    | 10.3       | 4.2         | 55.5         |         |
| 0.208500        | 41.2           | 1000.0          | 9.000           | GN | -    | 10.2       | 12.1        | 53.3         |         |
| 0.262500        | 36.6           | 1000.0          | 9.000           | GN | -    | 9.8        | 14.8        | 51.4         |         |
| 0.316500        | 31.9           | 1000.0          | 9.000           | GN | -    | 9.8        | 17.9        | 49.8         |         |
| 0.366000        | 27.1           | 1000.0          | 9.000           | GN | -    | 10.0       | 21.5        | 48.6         |         |
| 0.420000        | 24.3           | 1000.0          | 9.000           | GN | -    | 10.0       | 23.1        | 47.4         |         |

Sign-off Test Data

5/11/2012, 9:40:26

Tested by:



Reviewed by:



**Figure 18: Test figure of Radiated emissions, mode C, Horizontal polarity (30MHz – 1GHz)**

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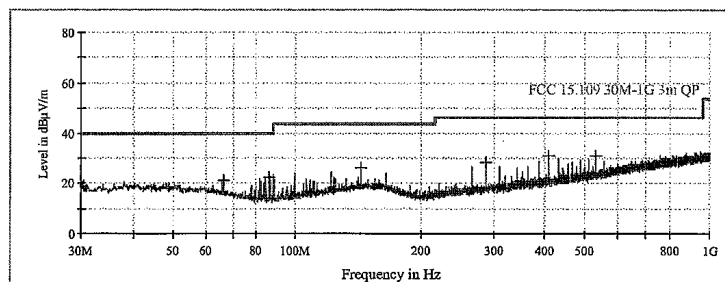
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: C  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

FCC 15.109 30M-1G sweep



### Limit and Margin QP

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin QPK (dB) | Limit QPK (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|------------|-----------------|--------------------|
| 66.300000       | 21.4               | 1000.0          | 120.000         | H            | 12.8       | 18.6            | 40.0               |
| 86.150000       | 22.1               | 1000.0          | 120.000         | H            | 10.8       | 17.9            | 40.0               |
| 143.750000      | 26.3               | 1000.0          | 120.000         | H            | 15.6       | 17.2            | 43.5               |
| 287.550000      | 28.5               | 1000.0          | 120.000         | H            | 15.1       | 17.5            | 46.0               |
| 409.200000      | 30.9               | 1000.0          | 120.000         | H            | 18.2       | 15.1            | 46.0               |
| 530.850000      | 30.9               | 1000.0          | 120.000         | H            | 20.8       | 15.1            | 46.0               |

Sign-off Test Data



Date: 5/14/2012 - Time: 8:40:50

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_



**Figure 19: Test figure of Radiated emissions, mode C, Vertical polarity  
(30MHz – 1GHz)**

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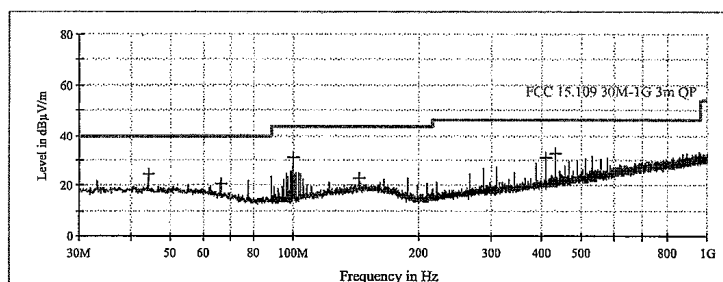
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: C  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

FCC 15.109 30M-1G sweep



### Limit and Margin QP

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin QPK (dB) | Limit QPK (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|-----------|-----------------|--------------------|
| 44.200000       | 24.4               | 1000.0          | 120.000         | V            | 14.7      | 15.6            | 40.0               |
| 66.400000       | 20.9               | 1000.0          | 120.000         | V            | 12.8      | 19.1            | 40.0               |
| 99.550000       | 30.8               | 1000.0          | 120.000         | V            | 11.6      | 12.7            | 43.5               |
| 143.800000      | 23.1               | 1000.0          | 120.000         | V            | 15.6      | 20.4            | 43.5               |
| 409.200000      | 31.1               | 1000.0          | 120.000         | V            | 18.2      | 14.9            | 46.0               |
| 431.300000      | 32.4               | 1000.0          | 120.000         | V            | 18.8      | 13.6            | 46.0               |

Sign-off Test Data

Date: 5/14/2012 - Time: 8:47:57

Tested by:  Reviewed by: 

**Figure 20: Test figure of Radiated emissions, mode C, Horizontal polarity (1GHz – 6GHz)**

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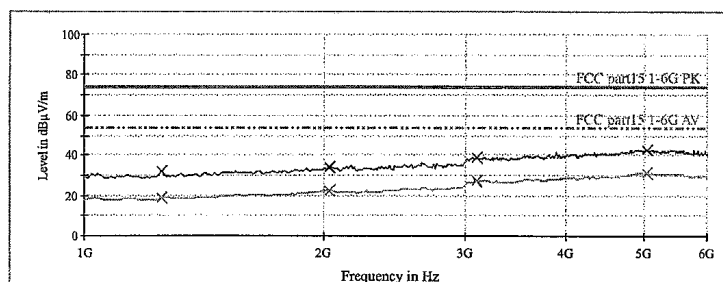
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: C  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 1GHz-6GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Pre TUV I to 18G HF906



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK+ (dB) | Limit PK+ (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|------------|-----------------|--------------------|
| 1250.000000     | 31.9             | 1000.0          | 1000.000        | H            | -8.3       | 42.1            | 74.0               |
| 2030.000000     | 34.3             | 1000.0          | 1000.000        | H            | -2.0       | 39.7            | 74.0               |
| 3100.000000     | 39.1             | 1000.0          | 1000.000        | H            | 4.2        | 34.9            | 74.0               |
| 5040.000000     | 42.9             | 1000.0          | 1000.000        | H            | 12.4       | 31.1            | 74.0               |

### Limit and Margin AV

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin AV (dB) | Limit AV (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|------------|----------------|-------------------|
| 1250.000000     | 18.8             | 1000.0          | 1000.000        | H            | -8.3       | 35.2           | 54.0              |
| 2030.000000     | 22.4             | 1000.0          | 1000.000        | H            | -2.0       | 31.6           | 54.0              |
| 3100.000000     | 27.1             | 1000.0          | 1000.000        | H            | 4.2        | 26.9           | 54.0              |
| 5040.000000     | 31.1             | 1000.0          | 1000.000        | H            | 12.4       | 22.9           | 54.0              |

Sign-off Test Data



Date: 5/14/2012 - Time: 10:23:46

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_

**Figure 21: Test figure of Radiated emissions, mode C, Vertical polarity (1GHz – 6GHz)**

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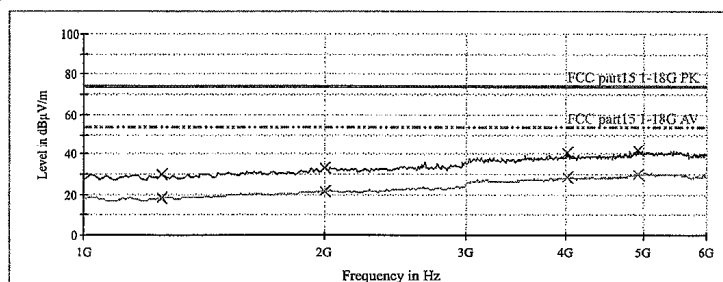
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: C  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 1GHz-6GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Pre TUV 1 to 18G HF906



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Corr (dB) | Margin -PK+ (dB) | Limit -PK+ (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|-------------|--------------|-----------|------------------|---------------------|
| 1250.000000     | 29.8             | 1000.0          | 1000.000        | 0.0         | V            | -8.3      | 44.2             | 74.0                |
| 2000.000000     | 33.5             | 1000.0          | 1000.000        | 0.0         | V            | -2.0      | 40.5             | 74.0                |
| 4020.000000     | 40.6             | 1000.0          | 1000.000        | 0.0         | V            | 8.1       | 33.4             | 74.0                |
| 4920.000000     | 42.1             | 1000.0          | 1000.000        | 0.0         | V            | 12.1      | 31.9             | 74.0                |

### Limit and Margin AV

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Polarization | Corr (dB) | Margin -AVG (dB) | Limit -AVG (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|-------------|--------------|-----------|------------------|---------------------|
| 1250.000000     | 18.5             | 1000.0          | 1000.000        | 0.0         | V            | -8.3      | 35.6             | 54.0                |
| 2000.000000     | 22.0             | 1000.0          | 1000.000        | 0.0         | V            | -2.0      | 32.0             | 54.0                |
| 4020.000000     | 28.3             | 1000.0          | 1000.000        | 0.0         | V            | 8.1       | 25.7             | 54.0                |
| 4920.000000     | 30.2             | 1000.0          | 1000.000        | 0.0         | V            | 12.1      | 23.8             | 54.0                |

Test Data

Date: 5/14/2012 - Time: 10:20:30

Tested by:  Reviewed by: 

**Figure 22: Test figure of Radiated emissions, mode D, Horizontal polarity (30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

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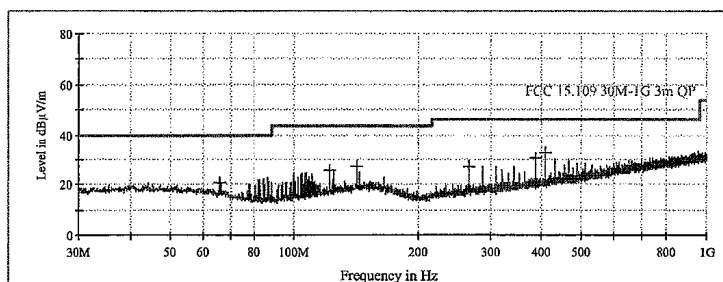
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: D  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

FCC 15.109 30M-1G sweep



### Limit and Margin QP

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin QPK (dB) | Limit QPK (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|------------|-----------------|--------------------|
| 66.200000       | 20.7               | 1000.0          | 120.000         | H            | 12.8       | 19.3            | 40.0               |
| 121.650000      | 25.5               | 1000.0          | 120.000         | H            | 14.0       | 18.0            | 43.5               |
| 142.000000      | 27.1               | 1000.0          | 120.000         | H            | 15.5       | 16.4            | 43.5               |
| 265.450000      | 27.0               | 1000.0          | 120.000         | H            | 14.4       | 19.0            | 46.0               |
| 387.100000      | 30.3               | 1000.0          | 120.000         | H            | 17.6       | 15.7            | 46.0               |
| 409.200000      | 32.4               | 1000.0          | 120.000         | H            | 18.2       | 13.6            | 46.0               |

Sign-off Test Data

Date: 5/14/2012 - Time: 9:05:14

Tested by:

Reviewed by:



**Figure 23: Test figure of Radiated emissions, mode D, Vertical polarity  
(30MHz – 1GHz)**

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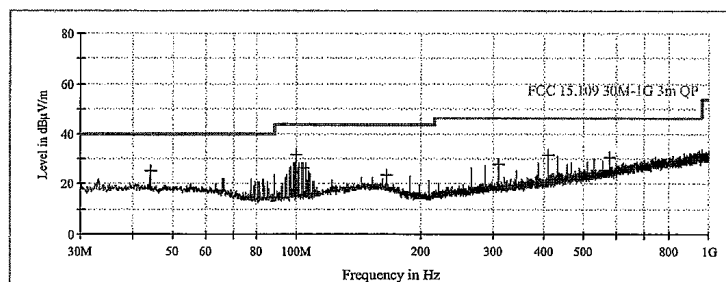
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: D  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

FCC 15.109 30M-1G sweep



### Limit and Margin QP

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin QPK (dB) | Limit QPK (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|------------|-----------------|--------------------|
| 44.200000       | 25.1               | 1000.0          | 120.000         | V            | 14.7       | 14.9            | 40.0               |
| 99.550000       | 31.4               | 1000.0          | 120.000         | V            | 11.6       | 12.1            | 43.5               |
| 103.500000      | 26.3               | 1000.0          | 120.000         | V            | 12.1       | 17.2            | 43.5               |
| 165.900000      | 23.6               | 1000.0          | 120.000         | V            | 15.6       | 19.9            | 43.5               |
| 309.600000      | 27.5               | 1000.0          | 120.000         | V            | 15.7       | 18.5            | 46.0               |
| 409.200000      | 31.3               | 1000.0          | 120.000         | V            | 18.2       | 14.7            | 46.0               |
| 575.100000      | 30.5               | 1000.0          | 120.000         | V            | 21.6       | 15.5            | 46.0               |

Sign-off Test Data

Date: 5/14/2012 - Time: 8:58:21

Tested by:

Reviewed by:



**Figure 24: Test figure of Radiated emissions, mode D, Horizontal polarity (1GHz – 6GHz)**

TUV Rheinland (Guangdong) Ltd.

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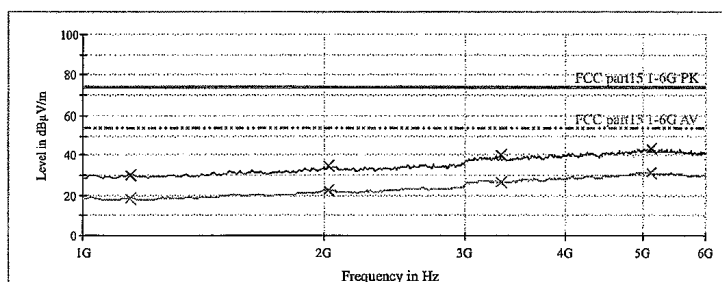
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: D  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 1GHz-6GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Pre TUV 1 to 18G HF906



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin PK+ (dB) | Limit PK+ (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|-----------|-----------------|--------------------|
| 1150.000000     | 29.8             | 1000.0          | 1000.000        | H            | -9.1      | 44.2            | 74.0               |
| 2020.000000     | 34.5             | 1000.0          | 1000.000        | H            | -2.0      | 39.5            | 74.0               |
| 3320.000000     | 40.1             | 1000.0          | 1000.000        | H            | 4.9       | 33.9            | 74.0               |
| 5120.000000     | 43.7             | 1000.0          | 1000.000        | H            | 12.3      | 30.3            | 74.0               |

### Limit and Margin AV

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin AVG (dB) | Limit AVG (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|-----------|-----------------|--------------------|
| 1150.000000     | 18.7             | 1000.0          | 1000.000        | H            | -9.1      | 35.3            | 54.0               |
| 2020.000000     | 22.3             | 1000.0          | 1000.000        | H            | -2.0      | 31.7            | 54.0               |
| 3320.000000     | 26.6             | 1000.0          | 1000.000        | H            | 4.9       | 27.4            | 54.0               |
| 5120.000000     | 31.3             | 1000.0          | 1000.000        | H            | 12.3      | 22.7            | 54.0               |

Sign-off Test Data



Date: 5/14/2012 - Time: 9:55:23

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_

**Figure 25: Test figure of Radiated emissions, mode D, Vertical polarity (1GHz – 6GHz)**

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## EMC Test Record (Emission)

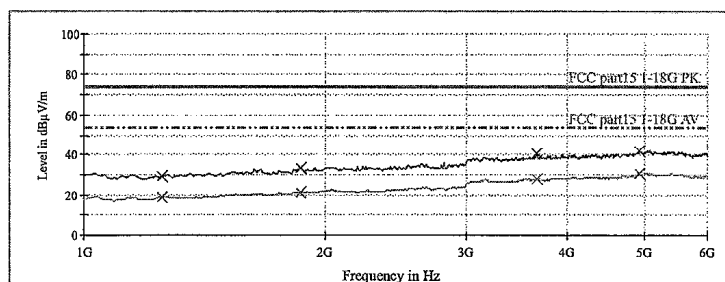
### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: E D  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical



Subrange 1  
Frequency Range: 1GHz-6GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Pre TUV 1 to 18G HF906



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK+ (dB) | Limit PK+ (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|------------|-----------------|--------------------|
| 1250.000000     | 29.5             | 1000.0          | 1000.000        | V            | -8.3       | 44.5            | 74.0               |
| 1860.000000     | 33.2             | 1000.0          | 1000.000        | V            | -3.7       | 40.8            | 74.0               |
| 3670.000000     | 40.5             | 1000.0          | 1000.000        | V            | 6.4        | 33.5            | 74.0               |
| 4930.000000     | 41.9             | 1000.0          | 1000.000        | V            | 12.1       | 32.1            | 74.0               |

### Limit and Margin AV

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin AVG (dB) | Limit AVG (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|------------|-----------------|--------------------|
| 1250.000000     | 18.9             | 1000.0          | 1000.000        | V            | -8.3       | 35.1            | 54.0               |
| 1860.000000     | 21.1             | 1000.0          | 1000.000        | V            | -3.7       | 32.9            | 54.0               |
| 3670.000000     | 27.8             | 1000.0          | 1000.000        | V            | 6.4        | 26.2            | 54.0               |
| 4930.000000     | 30.4             | 1000.0          | 1000.000        | V            | 12.1       | 23.6            | 54.0               |

Sign-off Test Data

Date: 5/14/2012 - Time: 10:04:08

Tested by:  Reviewed by: 

**Figure 26: Test figure of Radiated emissions, mode E, Horizontal polarity (30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

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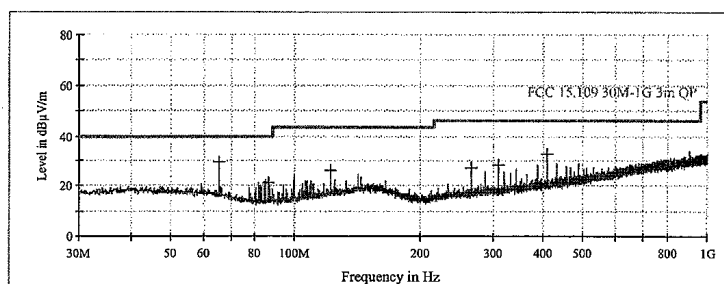
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: E  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

FCC 15.109 30M-1G sweep



### Limit and Margin QP

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBµV/m) |
|-----------------|--------------------|-----------------|-----------------|--------------|------------|-------------------|----------------------|
| 65.500000       | 29.5               | 1000.0          | 120.000         | H            | 12.9       | 10.5              | 40.0                 |
| 86.400000       | 21.2               | 1000.0          | 120.000         | H            | 10.8       | 18.8              | 40.0                 |
| 121.650000      | 25.9               | 1000.0          | 120.000         | H            | 14.0       | 17.6              | 43.5                 |
| 265.400000      | 27.1               | 1000.0          | 120.000         | H            | 14.4       | 18.9              | 46.0                 |
| 309.600000      | 28.4               | 1000.0          | 120.000         | H            | 15.7       | 17.6              | 46.0                 |
| 409.200000      | 32.5               | 1000.0          | 120.000         | H            | 18.2       | 13.5              | 46.0                 |

Sign-off Test Data

Date: 5/14/2012 - Time: 9:18:14

Tested by:  Reviewed by: 

**Figure 27: Test figure of Radiated emissions, mode E, Vertical polarity  
(30MHz – 1GHz)**

TUV Rheinland (Guangdong) Ltd.

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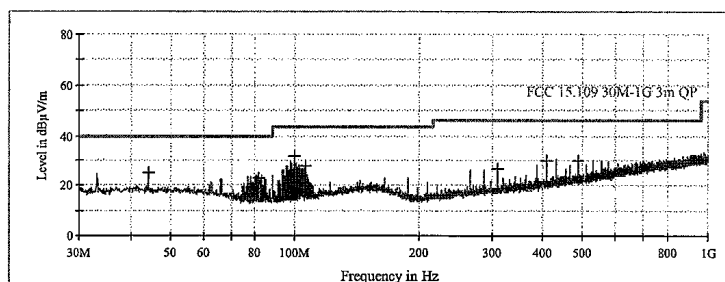
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: E  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 30M-1GHz  
Receiver: TUV ESCI 3  
Transducer: TUV SAC UVLB 9168/ TUV ESCI 3-TUV SAC UVLB 9168

FCC 15.109 30M-1G sweep



### Limit and Margin QP

| Frequency (MHz) | QuasiPeak (dBµV/m) | Meas Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin QPK (dB) | Limit QPK (dBµV/m) |
|-----------------|--------------------|----------------|-----------------|--------------|------------|-----------------|--------------------|
| 44.200000       | 24.8               | 1000.0         | 120.000         | V            | 14.7       | 15.2            | 40.0               |
| 81.600000       | 23.1               | 1000.0         | 120.000         | V            | 10.7       | 16.9            | 40.0               |
| 99.550000       | 31.6               | 1000.0         | 120.000         | V            | 11.6       | 11.9            | 43.5               |
| 106.500000      | 27.8               | 1000.0         | 120.000         | V            | 12.3       | 15.7            | 43.5               |
| 309.600000      | 26.7               | 1000.0         | 120.000         | V            | 15.7       | 19.3            | 46.0               |
| 409.300000      | 29.8               | 1000.0         | 120.000         | V            | 18.2       | 16.2            | 46.0               |
| 486.600000      | 29.9               | 1000.0         | 120.000         | V            | 19.9       | 16.1            | 46.0               |

Sign-off Test Data

Date: 5/14/2012 - Time: 9:24:20

Tested by:  Reviewed by: 

**Figure 28: Test figure of Radiated emissions, mode E, Horizontal polarity (1GHz – 6GHz)**

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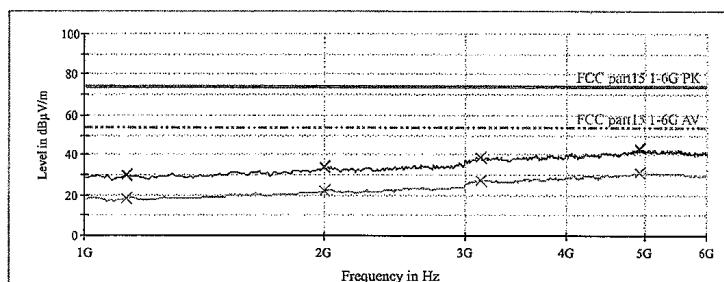
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: E  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Horizontal

Subrange 1  
Frequency Range: 1GHz-6GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Pre TUV 1 to 18G HF906



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin PK+ (dB) | Limit PK+ (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|-----------|-----------------|--------------------|
| 1130.000000     | 30.2             | 1000.0          | 1000.000        | H            | -9.0      | 43.8            | 74.0               |
| 2000.000000     | 33.8             | 1000.0          | 1000.000        | H            | -2.0      | 40.2            | 74.0               |
| 3130.000000     | 38.9             | 1000.0          | 1000.000        | H            | 4.4       | 35.1            | 74.0               |
| 4920.000000     | 43.5             | 1000.0          | 1000.000        | H            | 12.1      | 30.5            | 74.0               |

### Limit and Margin AV

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr (dB) | Margin -AVG (dB) | Limit -AVG (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|-----------|------------------|---------------------|
| 1130.000000     | 18.5             | 1000.0          | 1000.000        | H            | -9.0      | 35.5             | 54.0                |
| 2000.000000     | 22.5             | 1000.0          | 1000.000        | H            | -2.0      | 31.5             | 54.0                |
| 3130.000000     | 27.3             | 1000.0          | 1000.000        | H            | 4.4       | 26.7             | 54.0                |
| 4920.000000     | 31.3             | 1000.0          | 1000.000        | H            | 12.1      | 22.7             | 54.0                |

Sign-off Test Data

Date: 5/14/2012 - Time: 9:50:49

Tested by:  Reviewed by: 

**Figure 29: Test figure of Radiated emissions, mode E, Vertical polarity (1GHz – 6GHz)**

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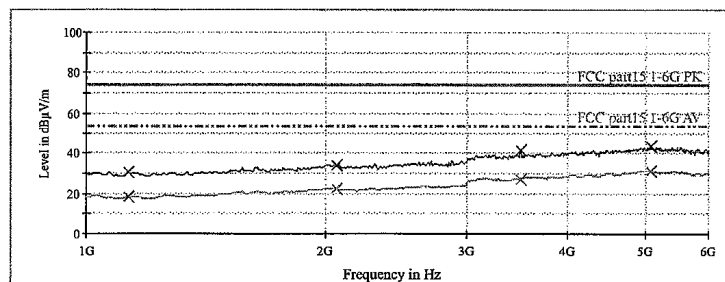
## EMC Test Record (Emission)

### Common Information

Manufacturer: Flycomos  
Test Item: GPS Tracker  
Identification: TK103  
Test Standard: FCC Part 15 B  
Test Detail: Radiated Emission  
Operation Mode: E  
Climate Condition: 23 °C; 50 %RH; 101 kPa.  
Test Voltage/ Freq: DC 12 V  
Receipt No: 163091623 100  
Report No: 17025740 001  
Result: Pass  
Comment: Test distance is 3m, Vertical

Subrange 1  
Frequency Range: 1GHz-6GHz  
Receiver: TUV FSP30  
Transducer: TUV SAC HF907/ TUV FSP30-TUV SAC HF907

Pre TUV 1 to 18G HF906



### Limit and Margin PK

| Frequency (MHz) | MaxPeak (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin PK (dB) | Limit PK (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|------------|----------------|-------------------|
| 1130.000000     | 30.8             | 1000.0          | 1000.000        | V            | -9.0       | 43.2           | 74.0              |
| 2060.000000     | 33.8             | 1000.0          | 1000.000        | V            | -1.9       | 40.2           | 74.0              |
| 3500.000000     | 41.6             | 1000.0          | 1000.000        | V            | 5.5        | 32.4           | 74.0              |
| 5090.000000     | 43.5             | 1000.0          | 1000.000        | V            | 12.4       | 30.5           | 74.0              |

### Limit and Margin AV

| Frequency (MHz) | Average (dBµV/m) | Meas. Time (ms) | Bandwidth (kHz) | Polarization | Corr. (dB) | Margin AV (dB) | Limit AV (dBµV/m) |
|-----------------|------------------|-----------------|-----------------|--------------|------------|----------------|-------------------|
| 1130.000000     | 18.3             | 1000.0          | 1000.000        | V            | -9.0       | 35.7           | 54.0              |
| 2060.000000     | 22.5             | 1000.0          | 1000.000        | V            | -1.9       | 31.5           | 54.0              |
| 3500.000000     | 27.5             | 1000.0          | 1000.000        | V            | 5.5        | 26.5           | 54.0              |
| 5090.000000     | 31.2             | 1000.0          | 1000.000        | V            | 12.4       | 22.8           | 54.0              |

Sign-off Test Data

Date: 5/14/2012 - Time: 9:44:05

Tested by: \_\_\_\_\_ Reviewed by: \_\_\_\_\_

