

# HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.

Product Compliance Division, EMC Team

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## CERTIFICATE OF COMPLIANCE

### FCC PART 15.247 Certification

**Applicant Name:** 

Date of Testing:

Ezze Mobile Tech., Inc.

Aug 28, 2007 **Test Site/Location:** 

3rd Floor, Bubmusa Bldg., 151-31, Nonhyun-dong,

HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD.,

Kangnam-ku, Seoul, Korea

San 136-1 Ami-ri, Bubal-eup, Icheon-si,

Kyungki-do, Korea

Test Report No.: HCT-R07-032

FCC ID: RV2EF80

APPLICANT: Ezze Mobile Tech., Inc.

Model(s):

the original

**EUT Type:** 

Tri-Band GSM Phone with Bluetooth (GSM850/ DCS1800/ PCS1900)

GPRS Class 8 and GPRS mode class B(GPRS and GSM, but not

simultaneously)

Max. RF Output Power:

2.39 dBm

Frequency Range:

2402 - 2480 MHz (Bluetooth)

FCC Classification:

FCC Part 15 Frequency Hopping Spread Spectrum Transceiver

FCC Rule Part(s):

Part 15 subpart C 15.247

**Application Type:** 

Certification

**Engineering Statement:** 

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HYUNDAI CALIBRATION & CERTIFICATION TECH. CO., LTD. Certifies that no party to this application has been denied FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

Report prepared by

Approved by

: Youn Seok Jung

: Sang Jun Lee

Test engineer of RF Part

Manager of RF Part

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# 1. General Information

**Applicant:** 3rd Floor, Bubmusa Bldg., 151-31, Nonhyun-dong,

Kangnam-ku, Seoul, Korea

**EUT:** Tri -Band GSM Phone (GSM850/ DCS1800/PCS1900) – Prototype

Model: the original

Date of Test: Aug 28, 2007

# 2. EUT DESCRIPTION

Product	Tri -Band GSM Phone (GSM850/ DCS1800/PCS1900) – Prototype
Model	the original
Power Supply	DC 3.8 V
Frequency Range	2402 ~ 2480 MHz
Transmit Power	2.39 dBm
Modulation Technique	FHSS(GMSK)
Number of Channels	79 Channelss
	Manufacturer: Partron Co., Ltd.
Antenna Specification	Antenna type: Dielectric Chip Antenna
	Gain (Peak / Avg) [dBi] -1.3 / -6.5

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## 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4. (Version :2003) Radiated testing was performed at an antenna to EUT distance 3 meters.

#### 3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

#### 3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

#### 3.3 GENERAL TEST PROCEDURES

#### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4. (Version :2003) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

#### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4. (Version: 2003)

## 3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel low, mid and high with highest data rate (worst case) is chosen for full testing.

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# 4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

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## 5. FACILITIES AND ACCREDITATIONS

#### **5.1 FACILITIES**

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1,Maekok-Ri, Hobup-Myun, Ichon-Si, Kyoungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2003) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 6, 2006(Registration Number: 90661)

#### **5.2 EQUIPMENT**

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

## 6. SETUP OF EQUIPMENT UNDER TEST

#### **6.1 SETUP CONFIGURATION OF EUT**

See test photographs for the actual connections between EUT and support equipment.

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## 7. FCC PART 15.247 REQUIREMENTS

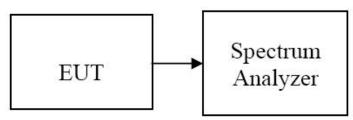
## 7.1 PEAK POWER

#### LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

- 1. For systems using digital modulation in the bands of 902  $\sim$  928 MHz, 2400  $\sim$  2483.5 MHz, and 5725  $\sim$  5850 MHz: 1 watt.
- 2. Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## **Test Configuration**



#### **TEST PROCEDURE**

The transmitter output is connected to the Spectrum Analyzer. The Spectrum Analyzer is set to the peak detector mode. The RBW is set to 1MHz. The VBW is set to 3MHz.

## **TEST RESULTS**

No non-compliance noted

#### **Test Data**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Limit (W)	Result
Low	2402	2.39	1.73	1	PASS
Mid	2441	1.42	1.39		PASS
High	2480	-0.05	0.99		PASS

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## **Test Plots**

## Peak Power (Low CH)



## Peak Power (Mid CH)



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# Peak Power ( High CH )



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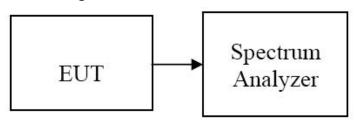


## 7.2 BAND EDGES MEASUREMENT

## **LIMIT**

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

## **Test Configuration**



#### **TEST PROCEDURE**

The spectrum analyzer is set to:

- 1. Span = 8 MHz
- 2. RBW = 100 KHz
- 3. VBW = 300 KHz
- 4. Sweep = auto

## **TEST RESULTS**

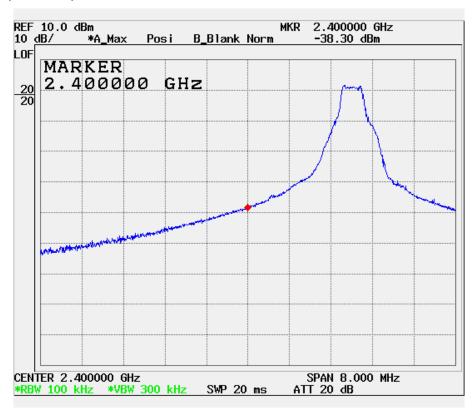
See attached.

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**Test Data** 

## Band Edges (Low- CH)



# **Band Edges (High-CH)**



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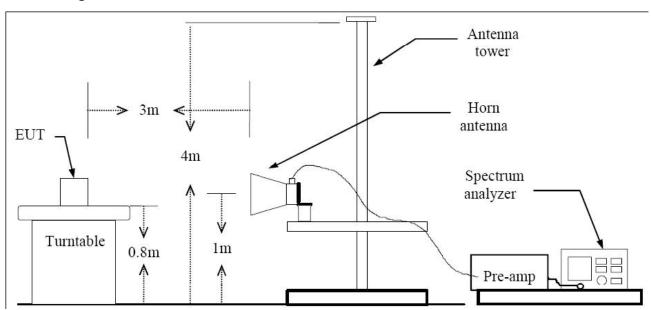


## 7.2.1 BAND EDGES MEASUREMENT (Radiated)

#### **LIMIT**

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a).

## **Test Configuration**



#### **TEST PROCEDURE**

- 1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
- (a) PEAK: RBW = VBW = 1 MHz / Sweep = AUTO
- (b) AVERAGE: RBW = 1 MHz / VBW = 10 Hz / Sweep = AUTO
- 5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

#### **TEST RESULTS**

Refer to attach spectrum analyzer data chart.

#### **Test Data**

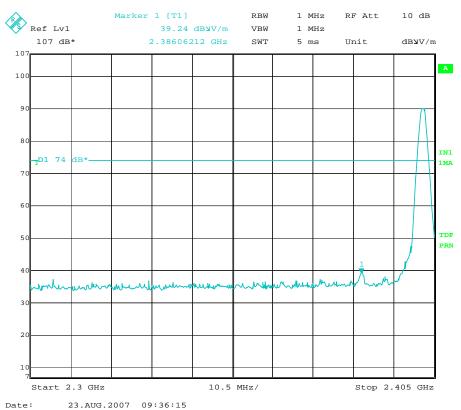
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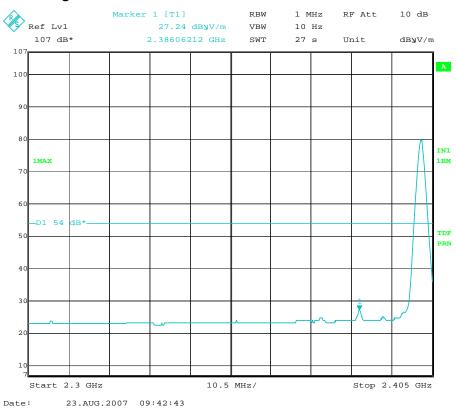


# Band Edges (Low- CH)

# **Polarity: Vertical**

## **Detector mode: Peak**





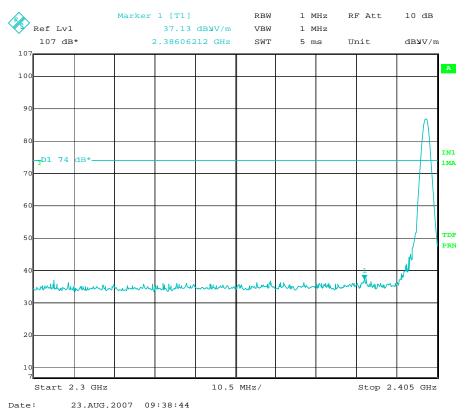
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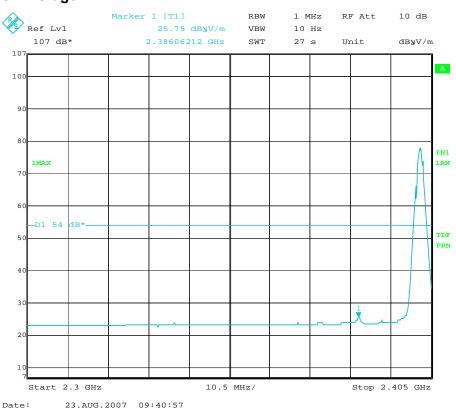


# Band Edges (Low- CH)

# **Polarity: Horizontal**

## **Detector mode: Peak**





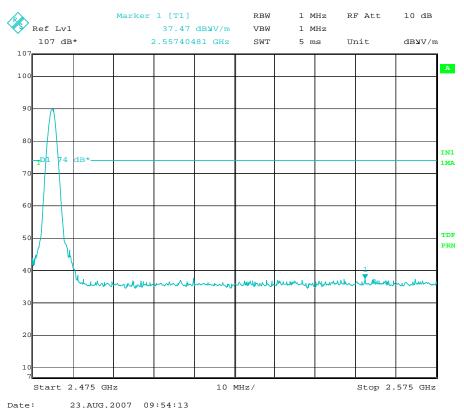
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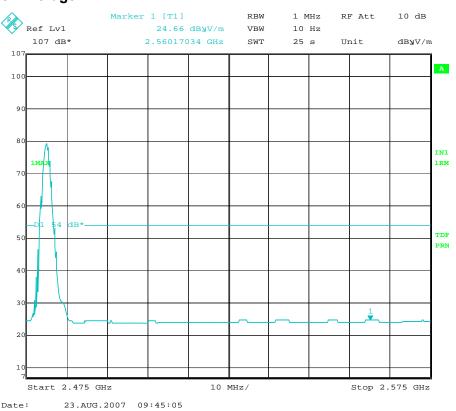


# Band Edges (High- CH)

## **Polarity: Vertical**

## **Detector mode: Peak**





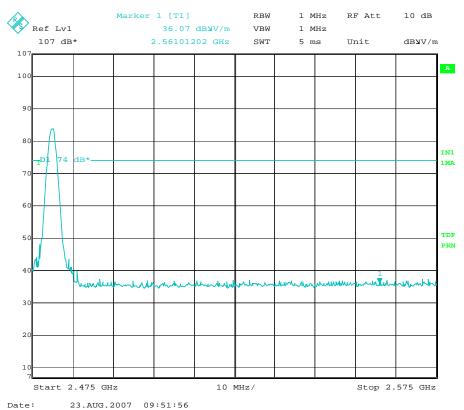
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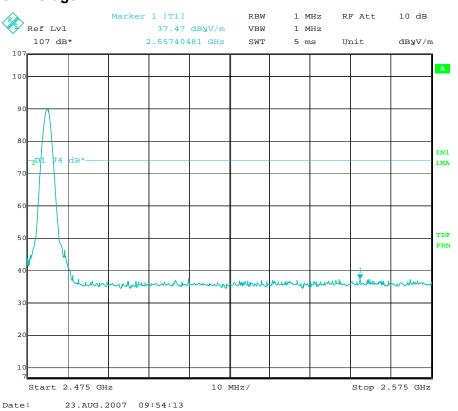


# Band Edges (High- CH)

# **Polarity: Horizontal**

## **Detector mode: Peak**





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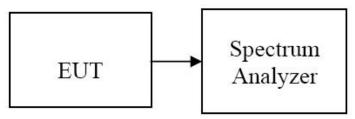


## 7.3 FREQUENCY SEPARATION

## **LIMIT**

According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

## **Test Configuration**



#### **TEST PROCEDURE**

The spectrum analyzer is set to:

- 1. Span = 3 MHz
- 2. RBW = 100 KHz
- 3. VBW = 300 KHz
- 4. Sweep = auto

The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

#### **TEST RESULTS**

No non-compliance noted

#### **Test Data**

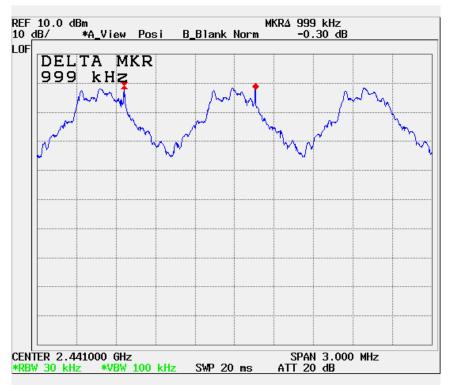
Channel Separation	20dB Bandwidth		Limit	Result
(MHz)		(KHz)	(KHz)	
	Low CH	762		
0.999	Middle CH	765	>25	Pass
	High CH	759		

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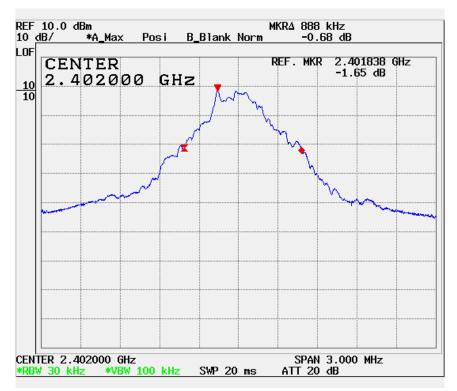


## **Test Plot**

## **Measurement of Channel Separation**



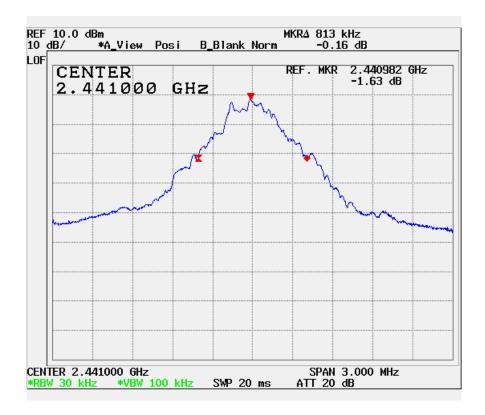
# Test Plot 20 dB bandwidth (Low CH)



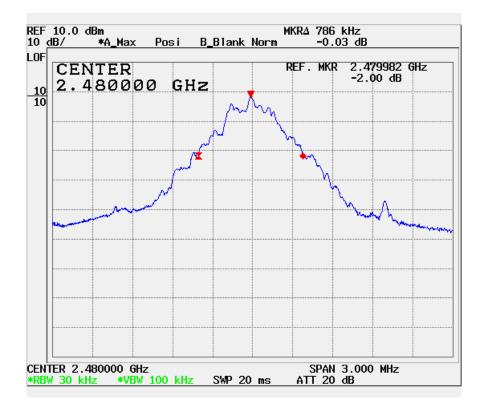
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## (Mid CH)



## (High CH)



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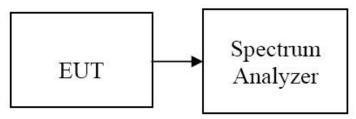


## 7.4 NUMBER OF HOPPING FREQUENCY

## LIMIT

According to §15.247(a)(1)(ii), Frequency hopping systems operating in the 2400 MHz ~ 2483.5 MHz bands shall use at least 15 hopping frequencies.

## **Test Configuration**



## **TEST PROCEDURE**

The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer was set to :

- 1. Span = the frequency band of operation (Start = 2400 MHz, Stop = 2483.5 MHz)
- 2. RBW = 300 KHz
- 3. VBW = 1 MHz
- 4. Sweep = auto

The trace was allowed to stabilize.

## **TEST RESULTS**

No non-compliance noted

## **Test Data**

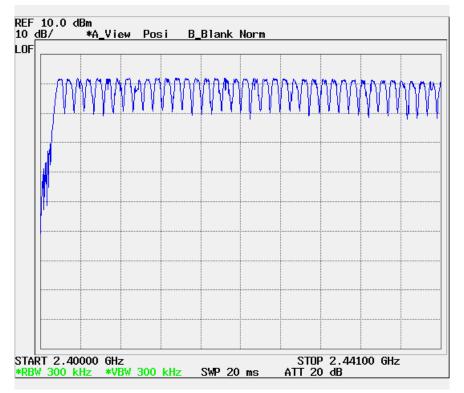
Result (No. of CH)	Limit (No. of CH)	Result
79	>75	Pass

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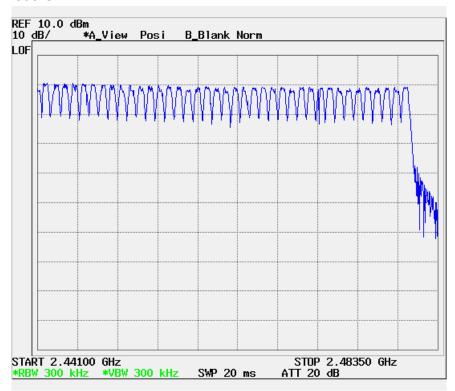


# Test Plot Channel Number

## 2.4 GHz - 2.441 GHz



#### 2.441 GHz - 2.4835 GHz



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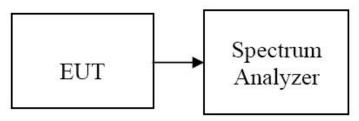


# 7.5 TIME OF OCCUPANCY (DWELL TIME)

#### **LIMIT**

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400 MHz ~ 2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

## **Test Configuration**



## **TEST PROCEDURE**

EUT was set to transmit the longest packet type (DH5)

- 1. Span = zero span
- 2. RBW = 1 MHz
- 3. VBW = 3 MHz
- 4. Sweep = as necessary to capture the entire dwell time per channel

The marker-delta function was used to determine the dwell time.

#### **TEST RESULTS**

See the table.

## DH 5

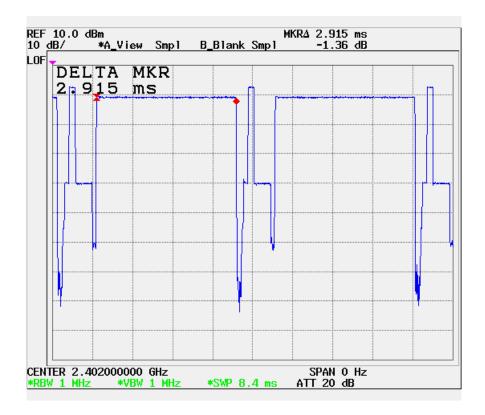
CH Low: 2.915 \* (1600/6)/79 \* 31.6 = 310.93 (ms) CH Mid: 2.915 \* (1600/6)/79 \* 31.6 = 310.93 (ms) CH High: 2.915 \* (1600/6)/79 \* 31.6 = 310.93 (ms)

Channel	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Low	2.915	310.93	31.6		PASS
Mid	2.915	310.93	31.6	400	PASS
High	2.915	310.93	31.6		PASS

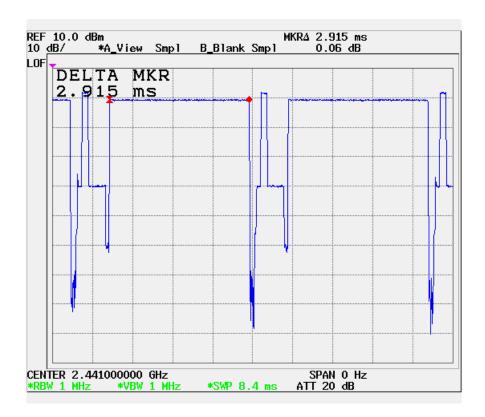
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# Test Plots DH 5 ( Low CH )



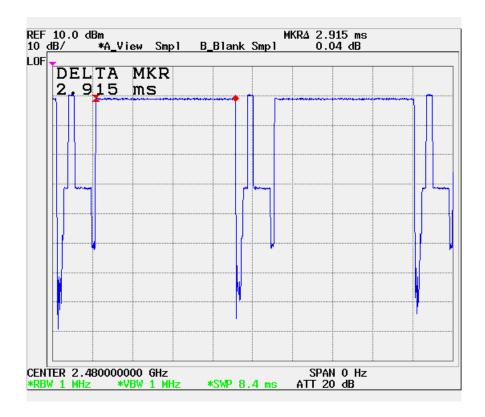
## (Mid CH)



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# (CH High)



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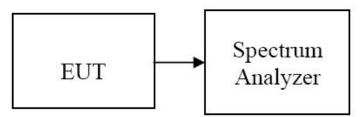
#### 7.6 SPURIOUS EMISSIONS

## 7.6.1 Conducted Spurious Measurement

#### LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

## **Test Configuration**



## **TEST PROCEDURE**

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 KHz. The video bandwidth is set to 300 KHz.

Measurements are made over the 30 MHz to 26 GHz range with the transmitter set to the lowest, middle, and highest channels.

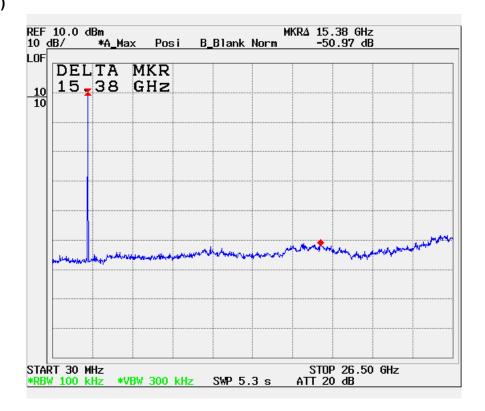
#### **TEST RESULTS**

No non-compliance noted

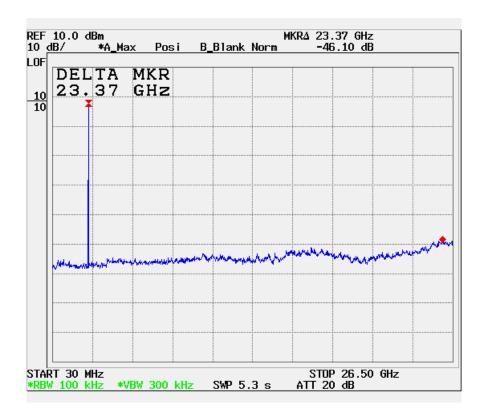
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# Test Plots (Low CH)



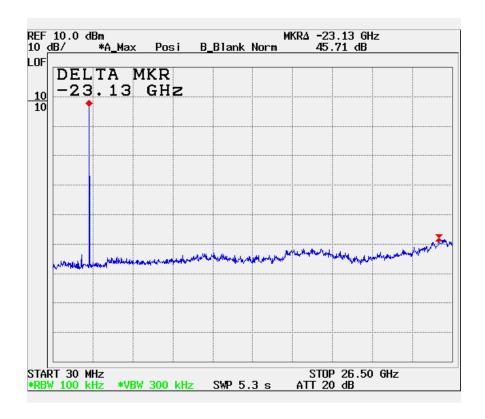
## (Mid CH)



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# (High CH)



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# 7.6.2 Radiated Spurious Emissions

## LIMIT

1. 20dBc in any 100kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed

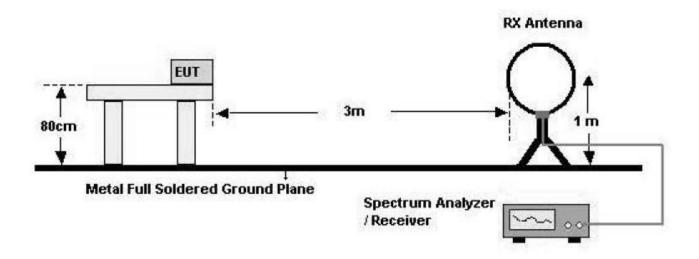
Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(KHz)	300
0.490 - 1.705	24000/F(KHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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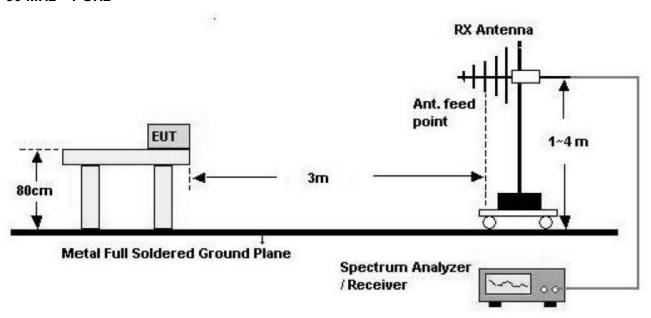


## **Test Configuration**

## Below 30 MHz



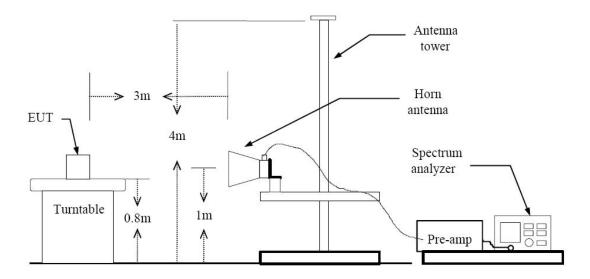
## 30 MHz - 1 GHz



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#### **Above 1 GHz**



#### **TEST PROCEDURE**

- 1. The EUT is placed on a turntable, which is 0.8 m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.

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# TEST RESULTS 9 kHz – 30MHz

**Operation Mode:** Normal Link

- 1. Measuring frequencies from 9 kHz to the 30MHz.
- 2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
- 3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
- 4. Limit line = specific Limits (dBuV) + Distance extrapolation factor

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# **TEST RESULTS**

## Below 1 GHz

**Operation Mode:** Normal Link

Frequency	Reading	Ant. Factor	Cable Loss	ANT POL	Total	Limit	Margin
MHz	dBuV	dB	dB	(H/V)	dBuV/m	dBuV/m	dB
54	8.88	12.13	1.67	V	22.68	40.0	17.32
165	12.84	12.56	3.05	V	28.45	43.5	15.05
317	12.78	13.1	4.29	V	30.17	46.0	15.83

- 1. Measuring frequencies from 30 MHz to the 1 GHz.
- 2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Quasi peak detector mode.

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#### **Above 1 GHz**

**Operation Mode: CH Low** 

Frequency	Level	AN. CL.	ANT. POL	Total	Limit	Margin	Detect
[MHz]	[dBuV]	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4804	-117.12	34.9	V	45.02	74	28.98	PK
4804	-104.45	34.9	V	32.35	54	21.65	AV
9608	-115.61	44.08	V	52.69	74	21.31	PK
9608	-103.72	44.08	V	40.8	54	13.2	AV

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4. Spectrum setting:
- a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
- b. AV Setting 1 GH z- 26 GHz, RBW = 1 MHz, VBW = 10 Hz.

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**Operation Mode: CH Mid** 

Frequency	Level	AN. CL.	ANT. POL	Total	Limit	Margin	Detect
[MHz]	[dBuV]	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4882	-116.91	35.1	V	45.01	74	28.99	PK
4882	-105.76	35.1	V	33.86	54	20.14	AV
9764	-115.77	44.49	V	53.26	74	20.74	PK
9764	-103.37	44.49	V	40.86	54	13.14	AV

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4. Spectrum setting:
  - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
  - b. AV Setting 1 GH z- 26 GHz, RBW = 1 MHz, VBW = 10 Hz.

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**Operation Mode:** CH High

Frequency	Level	AN. CL.	ANT. POL	Total	Limit	Margin	Detect
[MHz]	[dBuV]	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4960	-115.74	35.3	V	44.04	74	29.96	PK
4960	-104.26	35.3	V	32.56	54	21.44	AV
9920	-115.97	44.89	V	53.86	74	20.14	PK
9920	-102.63	44.89	V	40.52	54	13.48	AV

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4. Spectrum setting:
  - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MH.
  - b. AV Setting 1 GH z- 26 GHz, RBW = 1 MHz, VBW = 10 Hz.

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## 7.7 POWERLINE CONDUCTED EMISSIONS

#### LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Evenuency Benne (MHz)	Limits (dBμV)			
Frequency Range (MHz)	Quasi-peak	Average		
0.15 to 0.50	66 to 56	56 to 46		
0.50 to 5	56	46		
5 to 30	60	50		

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

## **Test Configuration**

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

#### **TEST PROCEDURE**

- 1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
- 2. The EUT is connected via LISN to a test power supply.
- 3. The measurement results are obtained as described below:
- 4. Detectors Quasi Peak and Average Detector.

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## **Test Plot**

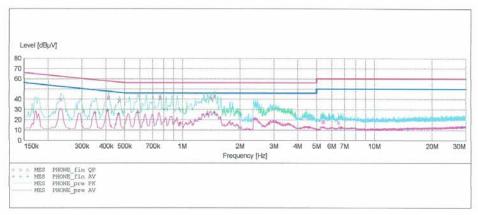
## **Conducted emissions (Line 1)**

#### HCT

#### EMC TEST LAB.

EUT: EUT: the original Manufacturer: EZZE MOBILE TECH Operating Condition: BLUETOOTH MODE Test Site: SHIELD ROOM Operator: DH-RYU Operator: DH-RYU
Test Specification: CISPR 22 CLASS B
Comment: N

SCAN TABLE: "CISPR 22 Voltage"
Short Description: CISPR 22 Voltage
Start Stop Step Detector Meas.
Frequency Frequency Width Time
150.1 kHz 500.0 kHz 2.5 kHz MaxPeak 10.0 m IF Transducer Time Bandw. 10.0 ms 9 kHz None Average 500.0 kHz 5.0 MHz 5.0 kHz MaxPeak 10.0 ms 9 kHz None Average MaxPeak 5.0 MHz 30.0 MHz 5.0 kHz 10.0 ms 9 kHz None Average



#### MEASUREMENT RESULT: "PHONE fin QP"

8/28	3/2007 4:4	1PM					
1	Frequency	Level	Transd	Limit	Margin	Line	PE
	MHZ	dΒμV	dB	dΒμV	dB		
	0.232600	40.10	10.0	62	22.2		
	0.412600	41.60	10.0	58	16.0		
	0.470100	38.70	10.1	57	17.8		
	0.765000	41.40	10.1	56	14.6		
	1.415000	40.80	10.2	56	15.2		
	1.470000	43.00	10.2	56	13.0		
	5.365000	18.60	10.7	60	41.4		
	5.445000	18.40	10.7	60	41.6		
	6.495000	17.50	10.8	60	42.5		

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## MEASUREMENT RESULT: "PHONE\_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB	nine	E.D.
0.350100	27.00	10.0	49	21.9		
0.407600	29.50	10.0	48	18.2		
0.465100	25.90	10.1	47	20.7		
0.585000	27.20	10.1	46	18.8		
1.350000	26.40	10.2	46	19.6		
1.470000	27.00	10.2	46	19.0		
6.720000	12.10	10.8	50	37.9		
14.935000	11.30	11.9	50	38.7		
28.760000	13.20	12.8	50	36.8		

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# Conducted emissions (Line 2)

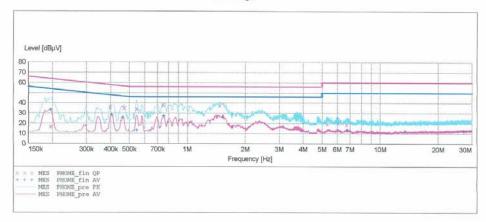
#### HCT

#### EMC TEST LAB.

EUT: the original
Manufacturer: EZZE MOBILE TECH
Operating Condition: BLUETOOTH MODE
Test Site: SHIELD ROOM
Operator: DH-RYU
Test Specification: CISPR 22 CLASS B
Comment: H

SCAN TABLE: "CISPR 22 Voltage"

Short Desc	ription:		CISPR 22 Vol	tage		
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
150.1 kHz	500.0 kHz	2.5 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	5.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



## MEASUREMENT RESULT: "PHONE\_fin QP"

8/28/2007 4:3	38PM					
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.195100	16.90	10.0	64	46.9		
0.397600	35.60	10.0	58	22.3		
0.470100	35.30	10.1	57	21.2		
0.545000	34.20	10.1	56	21.8		
0.750000	38.00	10.1	56	18.0		
1.470000	37.80	10.2	56	18.2		
5.310000	19.60	10.7	60	40.4		
6.045000	20.00	10.8	60	40.0		
6.695000	18.80	10.8	60	41.2		

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## MEASUREMENT RESULT: "PHONE\_fin AV"

8/28/2007 4:3	8PM					
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.195100	33.40	10.0	54	20.4		
0.405100	28.90	10.0	48	18.8		
0.462600	26.00	10.1	47	20.6		
0.545000	13.30	10.1	46	32.7		
0.755000	27.20	10.1	46	18.8		
1.525000	26.70	10.2	46	19.3		
6.780000	13.10	10.9	50	36.9		
13.480000	12.60	11.6	50	37.4		
26.995000	12.70	12.7	50	37.3		

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# 8. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Date	Cal Interval	Calibration Due	Serial No.
Rohde & Schwarz	ESI40/ EMI Test Receiver	11/06/2006	Annual	11/06/2007	831564103
Rohde & Schwarz	ESCI/ EMI Test Receiver	08/24/ 2007	Annual	08/24/ 2008	100033
Rohde & Schwarz	ESH2-Z5/ LISN	04/20/2007	Annual	04/20/2008	861741/013
Rohde & Schwarz	ESH3-Z6/ LISN	04/11/2007	Annual	03/16/2008	837950/023
Schwarzbeck	VULB 9160/ TRILOG Antenna	04/20/2007	Annual	04/20/2008	9160-3150
HD	MA240/ Antenna Position Tower	N/A	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	N/A	12
Rohde & Schwarz	ESH3-Z2/ PULSE LIMITER	03/16/2007	Annual	03/16/2008	375.8810.352
MITEQ	AMF-60-0010 1800-35-20P	01/24/2007	Annual	01/24/2008	1200937
MITEQ	AMF-6D-01180-35-20P	02/24/2007	Annual	02/24/2008	990893
Schwarzbeck	BBHA 9120D/ Horn Antenna	03/30/2007	Annual	03/30/2008	147
Schwarzbeck	BBHA9170/ SHF-EHF Horn Antenna	03/20/2007	Annual	03/20/2008	BBHA9170342
Rohde & Schwarz	HFH2-Z2/Loop Antenna	05/11/2007	Annual	01/10/2008	881056/070
ADVANTEST	R3273/Spectrum Analyzer	05/02/2007	Annual	05/02/2008	J004821
Agilent	E4416A /Power Meter	01/22/2007	Annual	01/22/2008	GB41291412
Agilent	E7405A	10/02/2006	Annual	10/02/2007	US40240209
Weinschel	2/Attenuator	01/24/2007	Annual	01/24/2008	BR0554
Wainwright Instrument	WHF3.3/18G-10EF / High Pass Filter	06/28/2007	Annual	06/28/2008	1

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