



849 NW STATE ROAD 45
NEWBERRY, FL 32669 USA
PH: 888.472.2424 OR 352.472.5500
FAX: 352.472.2030
EMAIL: INFO@TIMCOENGR.COM
[HTTP://WWW.TIMCOENGR.COM](http://WWW.TIMCOENGR.COM)

FCC PART 24 TEST REPORT

Applicant	IWOW CONNECTIONS PTE LTD.
	13 SERANGOON NORTH AVE 5, #03-00 SINGAPORE 554787 SINGAPORE
FCC ID	WSM-IGP801
Model Number	IGP801
Product Description	GSM Mobile Phone
Date Sample Received	August 28, 2008
Date Tested	September 11, 2008
Tested By	Nam Nguyen
Approved By	Mario de Aranzeta
Timco Report No.	1977AUT8TestReport.pdf
Test Results	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT
THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**



Certificate # 0955-01

TABLE OF CONTENTS

ATTESTATION STATEMENT.....	3
REPORT SUMMARY.....	4
TEST ENVIRONMENT	4
TEST SETUP	4
DUT SPECIFICATION.....	5
EMC EQUIPMENT LIST	6
TEST PROCEDURE	7
RF POWER OUTPUT.....	11
VOICE MODULATION CHARACTERISTICS.....	12
AUDIO LOW PASS FILTER.....	12
20dB OCCUPIED BANDWIDTH.....	13
SPURIOUS EMISSIONS AT ANTENNA TERMINALS	17
FIELD STRENGTH OF SPURIOUS EMISSIONS.....	19
FREQUENCY STABILITY.....	20
POWER LINE CONDUCTED INTERFERENCE.....	21
RF EXPOSURE	22

ATTESTATION STATEMENT



Certificate # 0955-01

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report. All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made, under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669.

Authorized Signatory Name: Mario de Aranzeta

Signature: On File

Function: Engineer

Date: 11/26/2008

REPORT SUMMARY

Disclaimer	The test results relate only to the items tested.
Report Purpose	To demonstrate the DUT comply with FCC Pt 24 requirements for a GSM phone.
Applicable Rule Part(s)	Pt 24, Pt 15.109, ANSI C63.4: 2003, ANSI/TIA-603-C: 2004
Related Test Report	1977BUT8TestReport.pdf

TEST ENVIRONMENT

Test Facilities	All required tests were performed by Timco Engineering Inc. that is located at 849 NW State Road 45 Newberry, FL 32669.
Test Conditions	Temperature: 26°C Relative Humidity: 50%

TEST SETUP

Deviation to the rules	There was no deviation from the test standards.
Modification to the DUT	No modification was made to the DUT.
Test Exercise (e.g. software description, test signal, etc.)	The DUT was placed in continuous transmit mode of operation.
Supporting Test Equipment	Manufacturer: Description: Model Number: Cal Date: Cal Due Date:

DUT SPECIFICATION

DUT Description	GSM Mobile Phone
FCC ID	WSM-IPG801
Model Name	IGP801
Tx Frequency	1850.2 – 1909.8 MHz
Max. Power Rating	0.447 W
Emission Designators	300KGXW (GSM 1900)
Modulation(s)	GSM
User Power Control	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
DUT Power Source	<input type="checkbox"/> 110–120Vac/50– 60Hz <input checked="" type="checkbox"/> DC Power <input type="checkbox"/> Battery Operated Exclusively
Test Item	<input type="checkbox"/> Prototype <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Production
Type of Equipment	<input type="checkbox"/> Fixed <input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable

EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/07	3/26/10
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
Biconnical Antenna	Eaton	94455-1	1057	CAL 12/12/07	12/12/09
Biconnical Antenna	Eaton	94455-1	1096	CAL 8/17/08	8/17/10
Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/29/07	4/29/09
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/13/07	4/13/09
Blue Tower RF Preselector	HP	85685A	2926A00983	CAL 9/5/07	9/5/09
Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/13/07	4/13/09
LISN	Electro-Metrics	ANS-25/2	2604	CAL 8/27/08	8/27/10
LISN	Electro-Metrics	EM-7820	2682	CAL 4/28/07	4/28/09
Log-Periodic Antenna	Eaton	96005	1243	CAL 12/14/07	12/14/09
Passive Loop Antenna	EMC Test Systems	EMCO 6512	9706-1211	CHAR 7/10/08	7/10/10

TEST PROCEDURE

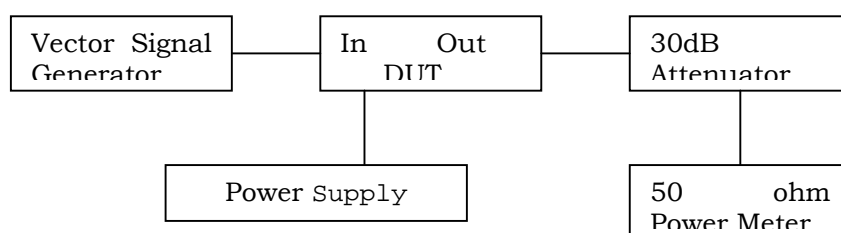
Power Line Conducted Interference: The procedure used was ANSI Standard C63.4-2003 using a 50uH LISN. Both lines were observed with the UUT transmitting. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

Bandwidth 20 dB: The measurements were made with the spectrum analyzer's resolution bandwidth (RBW) = 1 MHz and the video bandwidth (VBW) = 3 MHz and the span set as shown on plot.

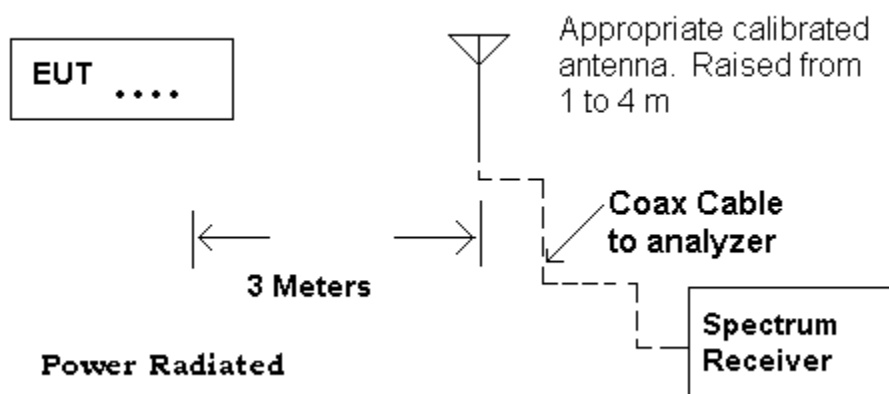
RF Power Output

RF power is measured by connecting a 50-ohm, resistive wattmeter to the RF output connector. With a nominal voltage and the amplifier properly adjusted the RF output measures.

RF Output Power Test Setup Diagram



Power Output (radiated)

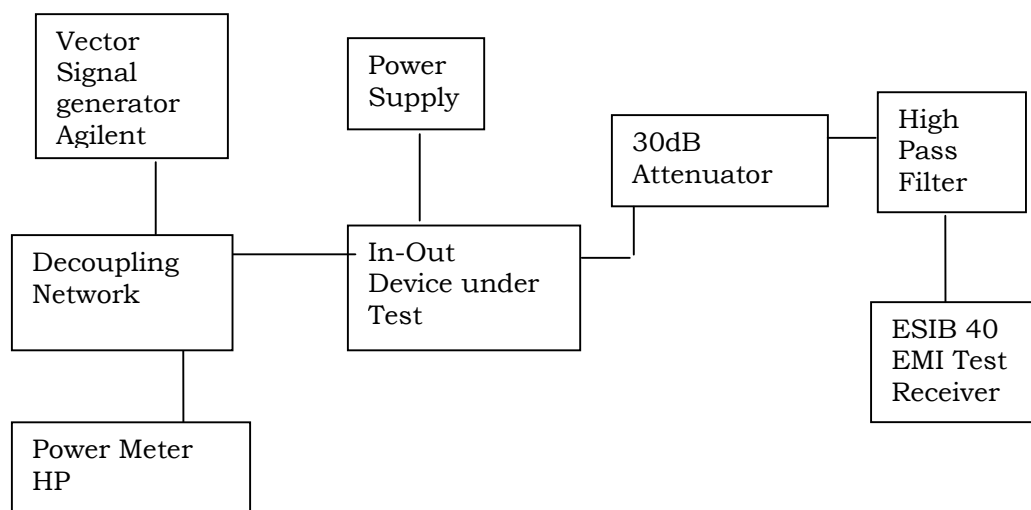


EIRP power is measured using the same setup as that for radiated spurious emissions.

Input/Output Modulated Amplitude Comparison And Band-Edges Compliance

On the following plot, the reference level was calibrated using a resolution bandwidth wider than the emission bandwidth. First the gain was measured for the maximum output power. Then for each frequency and type of modulation, an attenuation equals to the gain of the amplifier was added on the measurement side of the amplifier, as to overlay the input versus output modulated envelope.

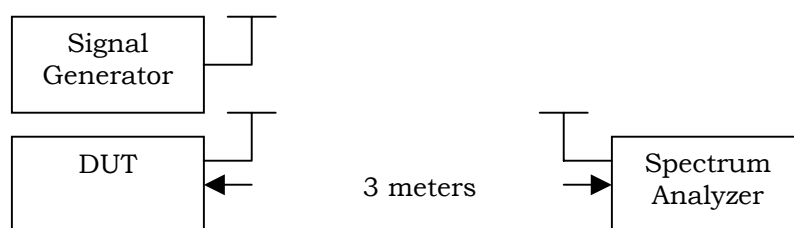
Test Setup Diagram



Radiated Spurious Emissions

The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. The CW signal was used to perform this test. This test was conducted per ANSI/TIA-603-C: 2004 using the substitution method.

Radiated Spurious Emissions Test Setup Diagram



Equipment placed 80 cm above ground on a rotating table platform.

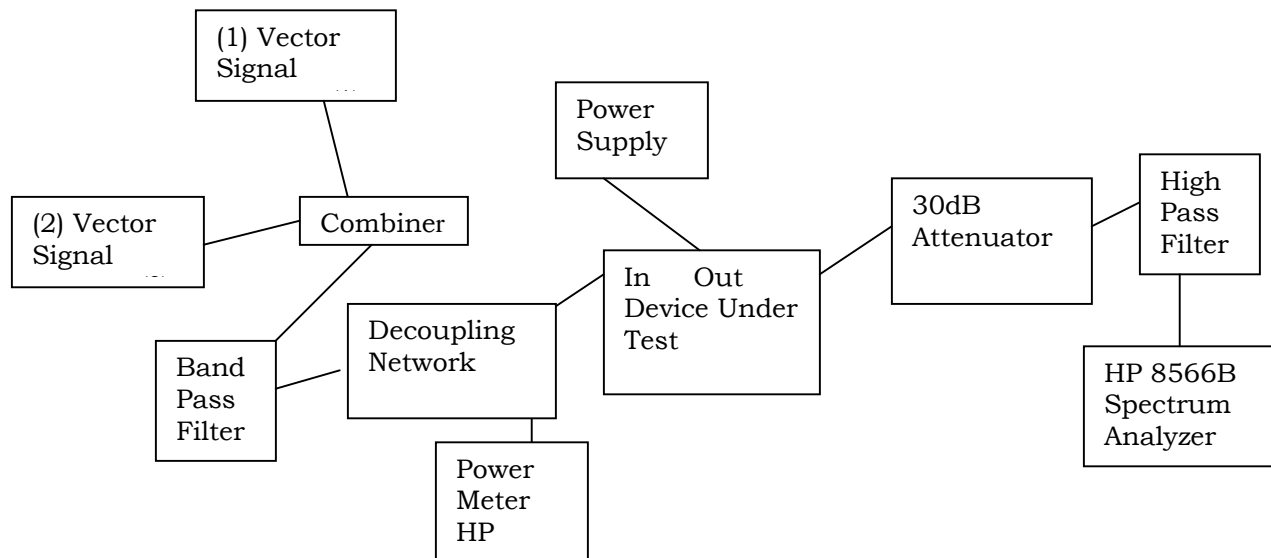
[Continued]

Intermodulation Product Spurious Emissions

The procedure used was ANSI/TIA-603-C: 2004. The spectrum was scanned from 9kHz to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer.

The modulation type was tested using the two-tone / three tone test method. The input power to the amplifier was set at maximum drive level by combining the two tones. The two tones were chosen in such a way (1) the third order intermodulation product frequencies are located within the pass band of the DUT and (2) they produce the worst-case emissions out of band.

Setup Diagram



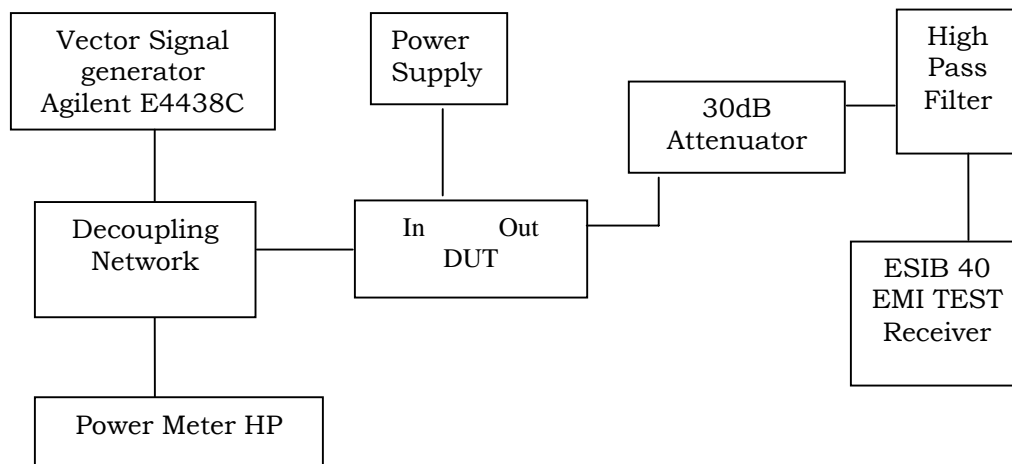
Spurious Emissions at Antenna Terminals

The procedure used was ANSI/TIA-603-C: 2004. The spectrum was scanned from 9kHz to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer.

Data on the following page shows the level of conducted spurious responses. For analog modulation, the carrier was modulated 100% using a 2500 Hz tone. For digital modulation, the carrier is modulated to its maximum extent. The spectrum was scanned from 9kHz to at least the 10th harmonic of the fundamental. The measurements were made in accordance with standard ANSI/TIA-603-C: 2004. The maximum input power was set for each test.

[Continued]

Conducted Spurious Emissions Test Setup Diagram



RF POWER OUTPUT

Rules Part No.: Part 2.1046(a), Part 24

Requirements: Pt 2.1046(a)

Test Data:

Channel (MHz)	Output Power (dBm) EIRP	Output Power (W) EIRP
1850.25	26.23	0.420
1879.85	26.36	0.433
1909.85	26.50	0.447

Channel (MHz)	Conducted Output Power (dBm)	Conducted Output Power (W)
1850.25	29.40	0.87
1879.85	29.40	0.87
1909.85	29.50	0.89

VOICE MODULATION CHARACTERISTICS

Rules Part No.: Part 2.1047(a)

Requirements: Part 2.1047(a)

Test Data: Not applicable, F9 or G9 type of emission.

AUDIO LOW PASS FILTER

Rules Part No.: Part 2.1047

Requirements: Part 2.1047

Test Data: This DUT does not have a low pass filter.

20dB OCCUPIED BANDWIDTH

Rules Part No.: §2.1049, §24.238

Requirements:

Out of band emissions: The mean power of emissions must be attenuated below the mean power of the un-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by: At least $43 + 10\log(P_o) = \text{dB}$.

Please refer to the plots below.

Band-edges compliance: Measurement were performed in accordance with Part 24.

Please refer to the plots below.

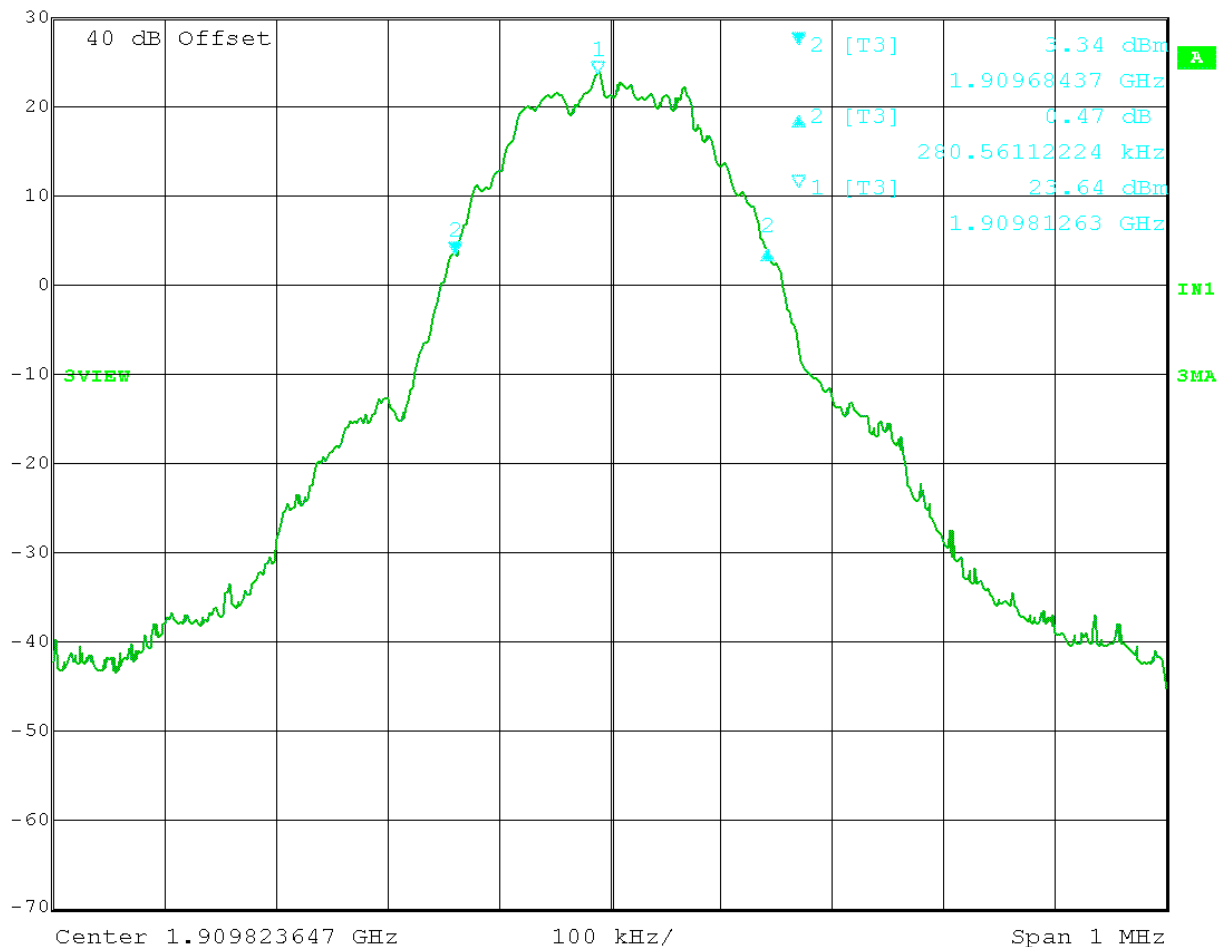
Mobile emissions in base frequency range: The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not to exceed – 80 dBm at the transmit antenna connector. The Low, Mid, and High channels were tested. The worst-case emissions are reported below:

No significant emissions found

Occupied Bandwith Plot (1909.8 MHz)



Ref Lvl 30 dBm
 Delta 2 [T3] 0.47 dB
 280.56112224 kHz
 RBW 10 kHz
 VBW 10 kHz
 SWT 25 ms
 RF Att 10 dB
 Unit dBm



Date: 8.OCT.2008 10:44:19

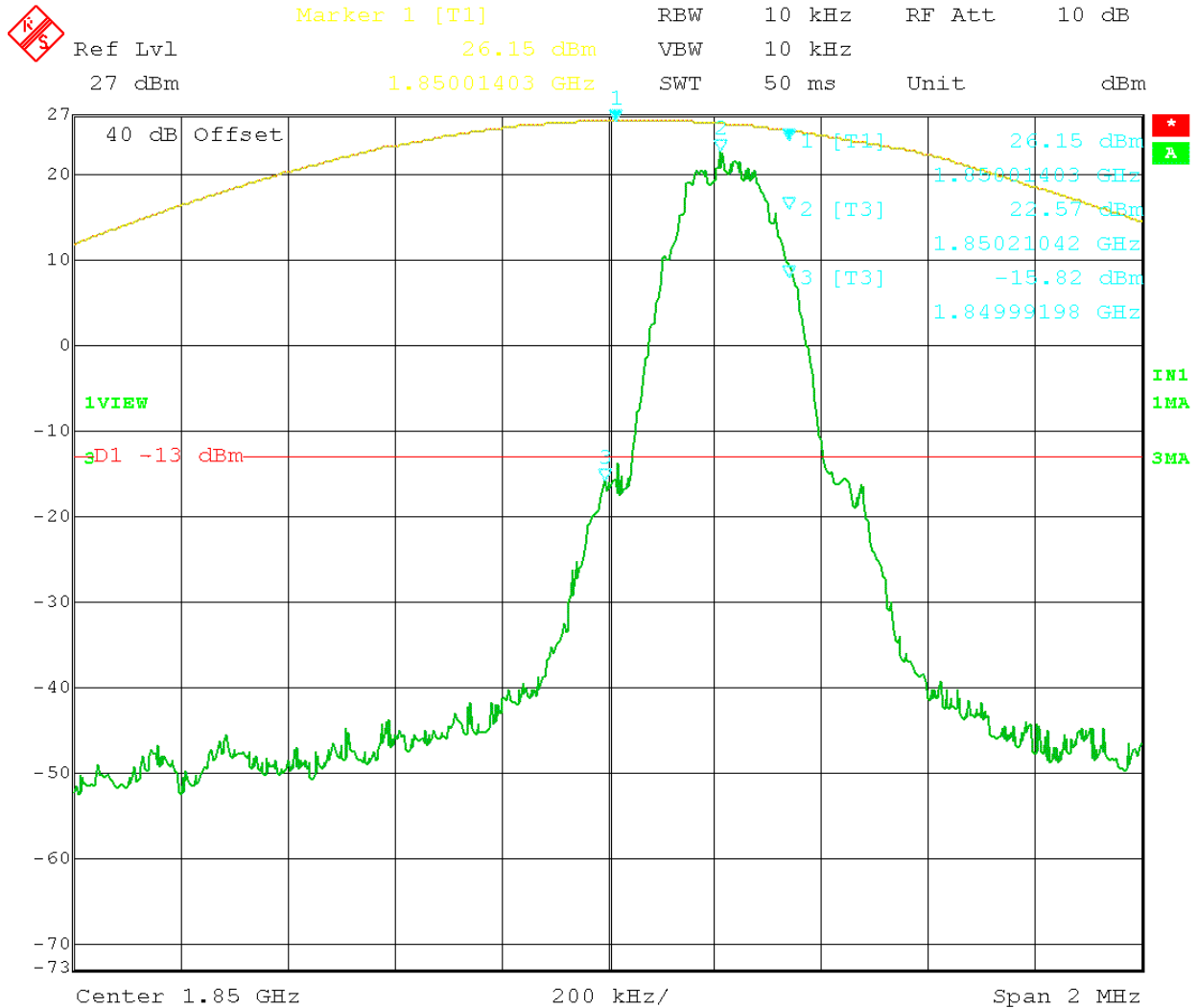
APPLICANT: IWOW CONNECTIONS PTE LTD.

FCC ID: WSM-IGP801

REPORT: I\IWOW_QPB\1977AUT8\1977AUT8TestReport.doc

Page 14 of 22

Band-Edge — Plot 1



Date: 21.OCT.2008 11:21:50

	Frequency (MHz)	Level (dBm)
Marker 1	1850.01	26.15
Marker 2	1850.21	22.57
Marker 3	1849.99	-15.82

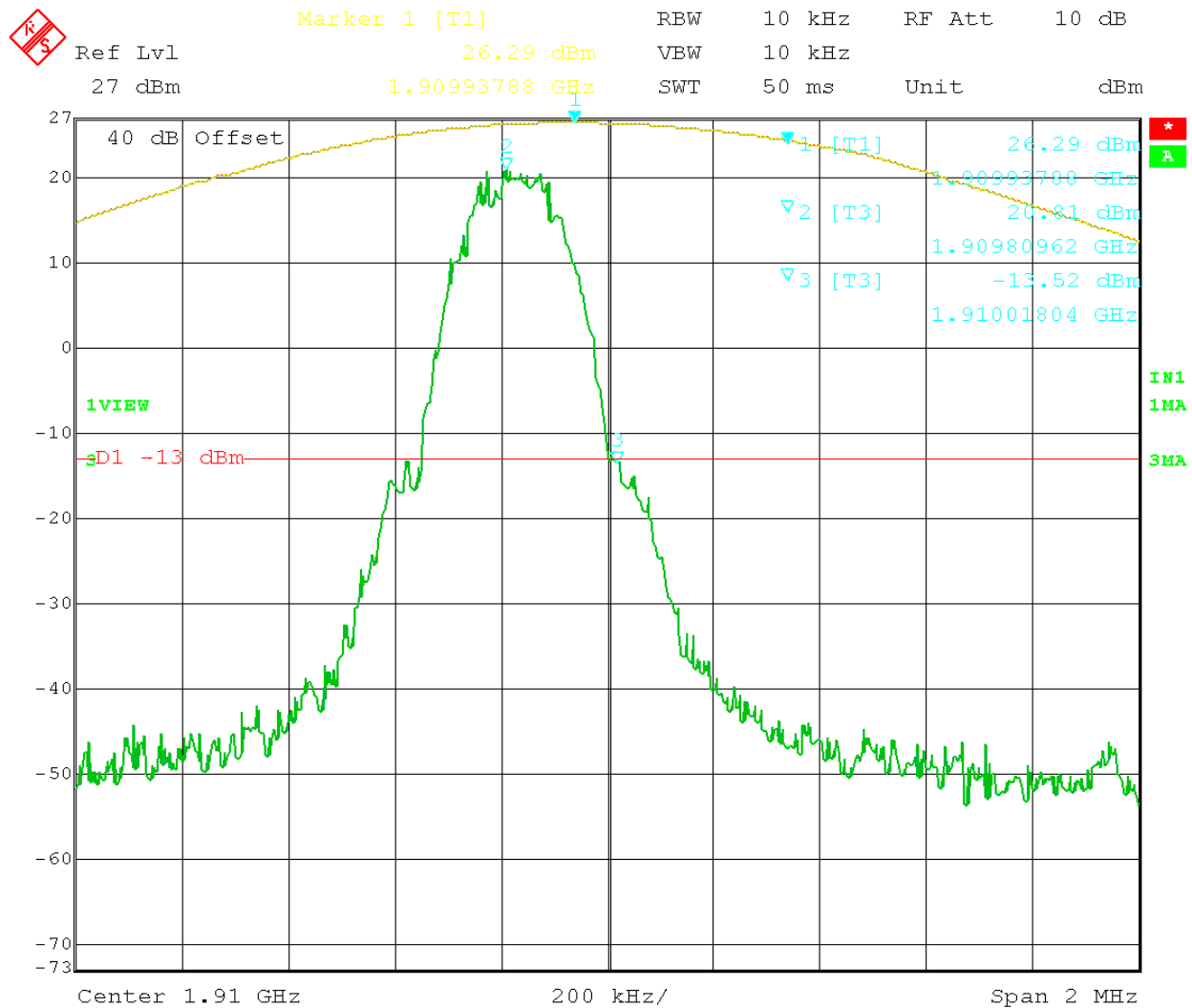
APPLICANT: IWOW CONNECTIONS PTE LTD.

FCC ID: WSM-IGP801

REPORT: I\IWOW_QPB\1977AUT8\1977AUT8TestReport.doc

Page 15 of 22

Band-Edge — Plot 2



Date: 21.OCT.2008 11:18:27

	Frequency (MHz)	Level (dBm)
Marker 1	1909.93	26.29
Marker 2	1909.81	20.81
Marker 3	1910.02	-13.52

APPLICANT: IWOW CONNECTIONS PTE LTD.

FCC ID: WSM-IGP801

REPORT: I\IWOW_QPB\1977AUT8\1977AUT8TestReport.doc

Page 16 of 22

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Rules Part No.: §2.1051

Requirements: Emissions must be $43 + 10\log(P_o)$ dB below the mean power output of the transmitter.:

$$43 + 10\log(0.50) = 40.0 \text{ dB}$$

Test Data:

TF HIGH POWER	EF	dB below carrier
1850.25	3700.50	82.72
	5550.75	91.99
	7401.00	NF
	9251.25	NF
	11101.50	NF
	12951.75	NF
	14802.00	NF
	16652.25	NF
	18502.50	NF

TF HIGH POWER	EF	dB below carrier
1879.85	3759.70	85.28
	5639.55	86.89
	7519.40	NF
	9399.25	NF
	11279.10	NF
	13158.95	NF
	15038.80	NF
	16918.65	NF
	18798.50	NF

NF is noise floor

Note: 1: Emissions were tested to the tenth harmonic.

TF HIGH POWER	EF	dB below carrier
1909.85	3819.70	85.17
	5729.55	85.28
	7639.40	NF
	9549.25	NF
	11459.10	NF
	13368.95	NF
	15278.80	NF
	17188.65	NF
	19098.50	NF

NF is noise floor

Note: 1: Emissions were tested to the tenth harmonic.

FIELD STRENGTH OF SPURIOUS EMISSIONS

Rules Part No.: Part 2.1053

Requirements: Emissions must be $43 + 10\log(P_o)$ dB below the mean power output of the transmitter.

$$43 + 10\log(0.50) = 40.0 \text{ dB}$$

Test Data:

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
1850.25	0	0
3700.50	V	50.57
5550.75	V	78.51
7401.00	H/V	NF
9251.25	H/V	NF
11101.50	H/V	NF
12951.75	H/V	NF
14802.00	H/V	NF
16652.25	H/V	NF
18502.50	H/V	NF

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
1879.85	0	0
3759.70	V	54.45
5639.55	V	78.15
7519.40	H/V	NF
9399.25	H/V	NF
11279.10	H/V	NF
13158.95	H/V	NF
15038.80	H/V	NF
16918.65	H/V	NF
18798.50	H/V	NF

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
1909.85	0	0
3819.70	V	62.19
5729.55	V	77.59
7639.40	H/V	NF
9549.25	H/V	NF
11459.10	H/V	NF
13368.95	H/V	NF
15278.80	H/V	NF
17188.65	H/V	NF
19098.50	H/V	NF

The worst case channels were tested.

FREQUENCY STABILITY

Rules Part No.: Part 2.1055, Part 24.235

Requirements: Temperature and voltage tests were performed to verify that the frequency remains within the .00025%, 2.5ppm specification limit for.

Test Data:

See separate report from Celltech.

POWER LINE CONDUCTED INTERFERENCE

RULES PART NO.: 15.207

REQUIREMENTS:	QUASI-PEAK	AVERAGE
.15 – 0.5 MHz	66-56 dB μ V	56-46 dB μ V
0.5 – 5.0	56	46
5.0 – 30.	60	50

TEST DATA: THE ATTACHED GRAPHS REPRESENT THE EMISSIONS FOR POWERLINE CONDUCTED FOR THIS DEVICE.

Battery operated device

RF EXPOSURE

Please see attached SAR report.