

# TIMCO ENGINEERING INC.

849 NW State Road 45  
Newberry, Florida 32669  
<http://www.timcoengr.com>  
888.472.2424 F 352.472.2030 email: [info@timcoengr.com](mailto:info@timcoengr.com)

## FCC TEST REPORT

### FCC Part 15, Subparts B AND C Part 15.247, band 2400-2483.5 MHz

**STANDARD/PROCEDURE(S):** DA 00-705, ANSI C63.4 - 2003

**APPLICANT:** MOTOROLA, INC.  
MOTOROLA CYBERPLEX LALAN MAYANG PASIR  
1, BANDAR BAYAN BARU  
11950 BAYAN LEPAS, PENANG, MALAYSIA

**MODEL NUMBER:** i880 DOLPHIN

**DESCRIPTION OF PRODUCT:** BLUETOOTH TRANSMITTER INTEGRATED IN iDEN PHONE

**FCC IDs:**

**DATE SAMPLE RECEIVED FOR TESTING:** 7/10/2006

**DATE TESTED:** 7/24/2006

**TEST RESULTS:**  PASS  FAIL

APPLICANT: MOTOROLA, INC.  
MODEL #: i880 DOLPHIN  
REPORT #: V:\M\MOTOROLA\_MALAYSIA\2055EUT6\2055EUT6TestReport.doc

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## 1 COMPLIANCE STATEMENT:

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 and demonstrate that the equipment complies with the appropriate standards. No modifications were made to the equipment during testing in order to demonstrate compliance with these standards.

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

*Mario de Aranzeta*  
Signature:

Function: ENGINEER

Date: 7/31/2006

Test engineer name: RICHARD BLOCK

Signature: <ON FILE>

Date: 7/27/2006

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## 2 EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 8/17/04	8/17/06
Antenna: Biconnical	Electro- Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Antenna: Double- Ridged Horn	Electro- Metrics	RGA-180	2319	CAL 12/29/04	12/29/06
LISN	Electro- Metrics	ANS-25/2	2604	CAL 8/27/04	8/27/06
LISN	Electro- Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Antenna: Log- Periodic	Eaton	96005	1243	CAL 12/14/05	12/14/07

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## **3 TEST PROCEDURE**

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

**POWER OUTPUT:** The RF power output was measured at the antenna feed point using a peak power meter.

**RADIATION INTERFERENCE:** The test procedure used was ANSI STANDARD C63.4-2003 using a HEWLETT PACKARD spectrum analyzer with a pre-selector. The bandwidth (RBW) of the spectrum analyzer was 100kHz up to 1GHz and 1.0MHz above 1GHz with an appropriate sweep speed. The VBW above 1.0GHz was = 3.0MHz for Peak measurement and 10Hz for linear Average measurement. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 76°F with a humidity of 55%.

## **4 PEAK POWER OUTPUT**

The Peak power output was measured at a low, mid, and high channel. The maximum measured power was:

$$P_{out} = 2\text{dBm}$$

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## 5 FIELD STRENGTH OF SPURIOUS EMISSIONS:

FCC rules part: 15.247(c), 15.205, and 15.209

### REQUIREMENTS:

Emission Frequency (MHz)	Field Strength		At Distance (m)	Detector Type
	( $\mu$ V/m)	(dB $\mu$ V/m)		
0.009 - 0.490	2400/f (kHz)	67.6 / kHz	300	AV (9-90 kHz, 110-490 kHz) QP (others)
0.490 - 1.705	24000/f (kHz)	87.6 / kHz	30	QP
1.705 - 30.0	30	29.5	30	QP
30 - 88	100	40	3	QP
88 - 216	150	43.5	3	QP
216 - 960	200	46	3	QP
> 960	500	54	3	AV (> 1GHz)

Emissions that fall in the restricted bands, as listed in part 15.205, must be less than 54dB $\mu$ V/m above 1GHz based on an average detector. The provisions of part 15.35 apply: The Peak limit is 20dB above the average limit. Emissions that fall outside the restricted band must be attenuated by at least 20dB below the fundamental emission based on a 100kHz RBW.

### TEST DATA - S/N 364VGLGB0S:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dB $\mu$ V	Ant. Pol.	Coax Loss dB	Correction Factor dB	Field Strength dB $\mu$ V/m	Margin dB
2,402.0	2,402.00	60.4	H	3.18	32.33	95.91	31.47
2,402.0	2,402.00	61.3	V	3.18	32.33	96.81	30.57
2,441.0	2,441.00	60.5	H	3.21	32.43	96.14	31.24
2,441.0	2,441.00	61.2	V	3.21	32.43	96.84	30.54
2,480.0	2,480.00	59.8	V	3.24	32.54	95.58	31.80
2,480.0	2,480.00	61.3	H	3.24	32.54	97.08	30.30

NOTES: The spectrum was investigated for harmonics and spurious emissions up to the 10<sup>th</sup> harmonic.

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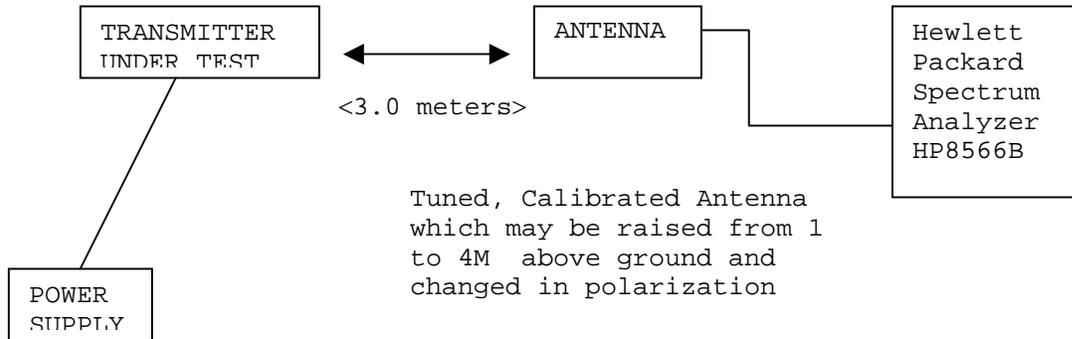
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## 5.1 METHOD OF MEASURING RADIATED SPURIOUS EMISSIONS



Equipment placed 80cm above ground on a turntable.

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-2003 Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. State Road 45, Newberry, FL 32669.

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## 5.2 RADIATED SPURIOUS EMISSIONS INTO ADJACENT RESTRICTED BAND

**REQUIREMENTS:** Emissions that fall in the restricted bands (15.205). These emissions must be less than or equal to 500 uV/m (54 dBuV/m). Part 15.35(b) applies in the restricted bands.

**TEST PROCEDURE:** An in band field strength measurement of the fundamental Emission using the RBW and detector function required by C63.4-2003 and FCC Rules. The procedure was repeated with an average detector and a plot made. The calculated field strength in the adjacent restricted band is presented below.

Fundamental Frequency (MHz)	Field Strength Level of Fundamental (dBuV/m)	Peak or Avg	Frequency of maximum Band-edges Emission (MHz)	Delta Marker (dB) *	Calculated Max. Out of Band Emission Level (dBuV/m) **	Limit (dBuV/m)	Margin (dB)
2402.00	96.81	Peak	2390.00	65.81	31.00	74	43.00
2480.00	97.08	Peak	2483.50	44.7	52.31	74	21.69

\* According to step 2 of Marker-Delta Method DA 00-705 (following plots included).

\*\* According to step 3 of Marker-Delta Method:  
Calculated Emission Level = Field Strength Level - Delta Marker Level

The frequency hopping function was enabled during testing.

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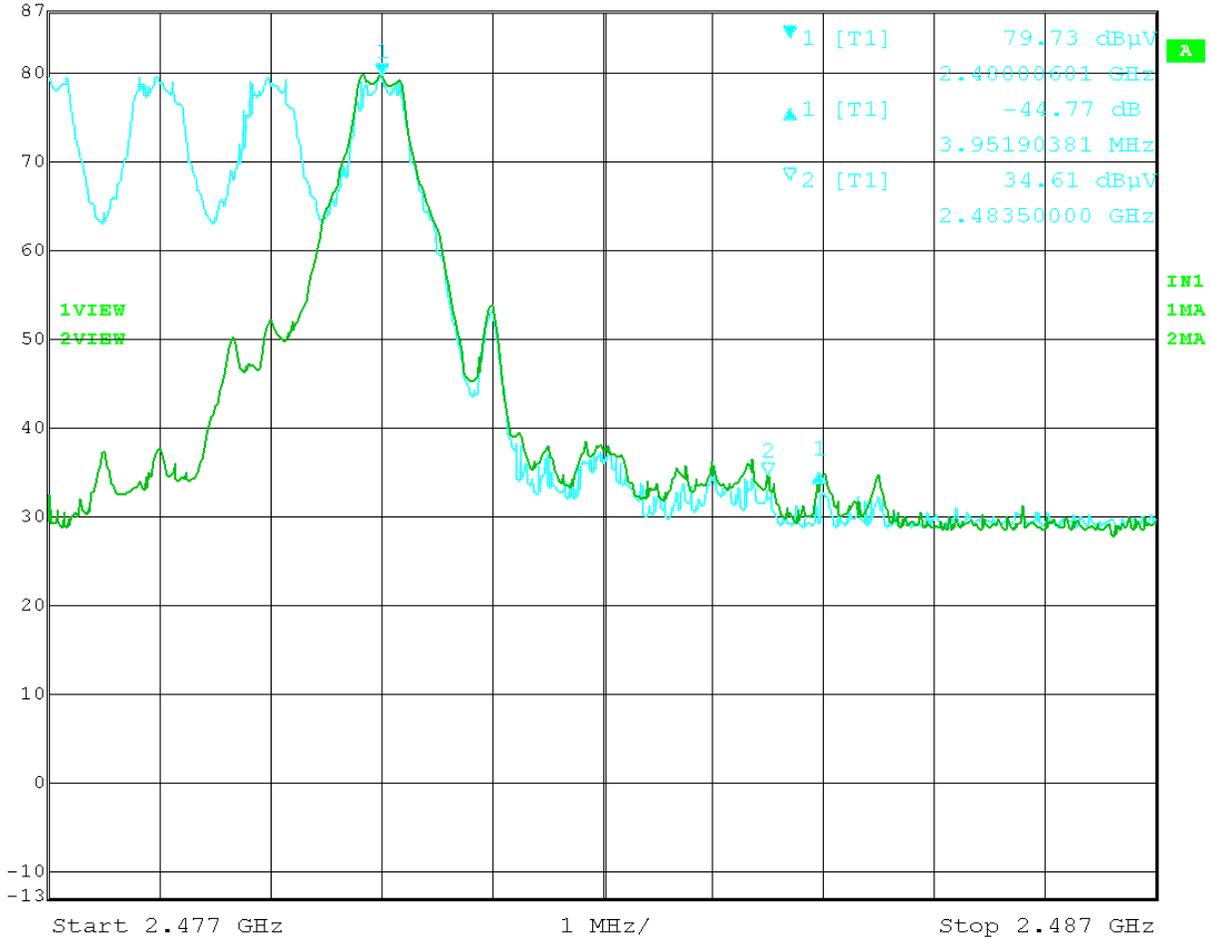
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	Delta 1 [T1]	RBW	100 kHz	RF Att	10 dB
Ref Lvl	-44.77 dB	VBW	300 kHz		
87 dBμV	3.95190381 MHz	SWT	20 ms	Unit	dBμV



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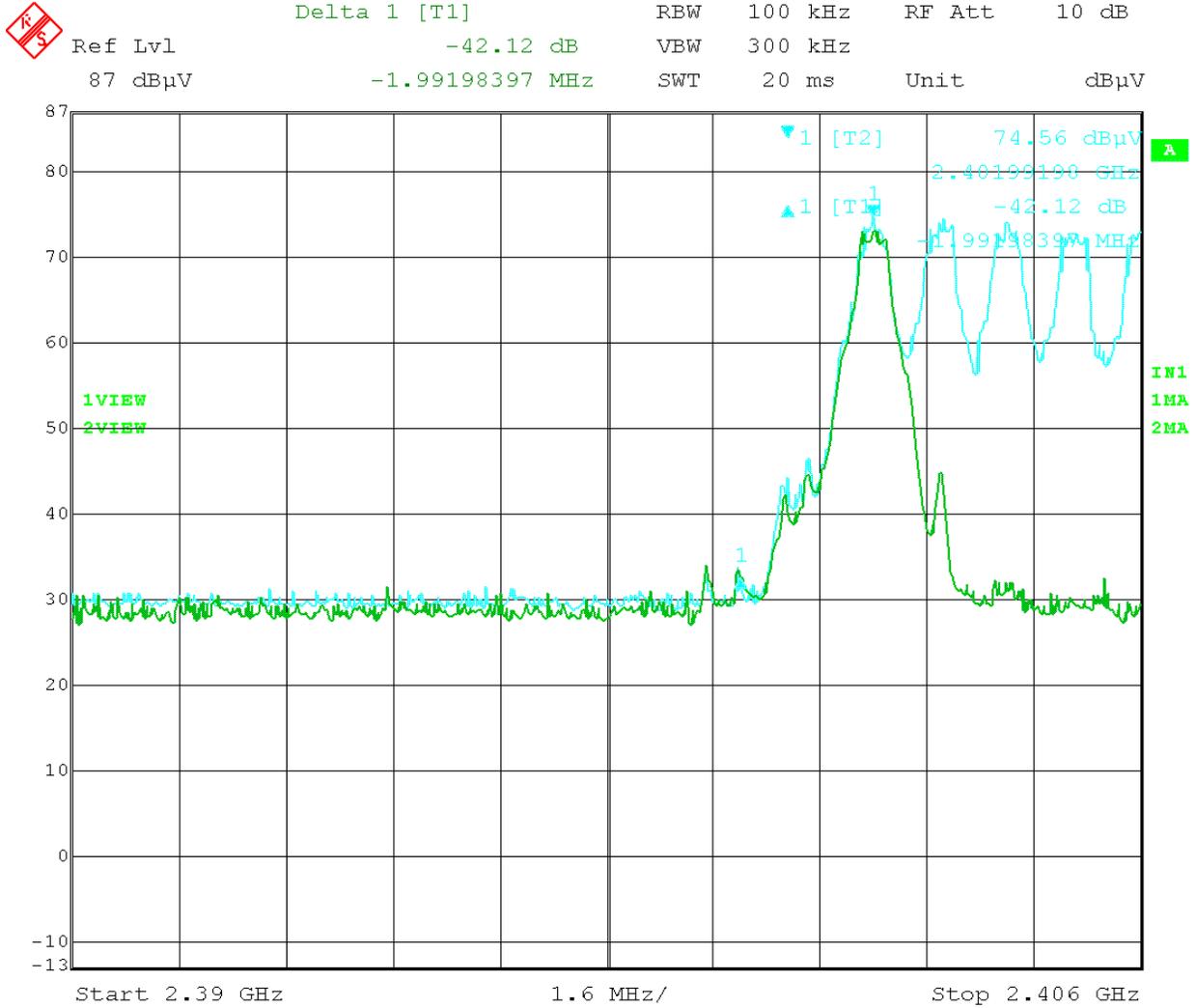
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