CERTIFICATE OF COMPLIANCE
FCC PART 22 CERTIFICATION

Test Lab:

CELLTECH RESEARCH INC.
Testing and Engineering Services
1955 Moss Court
Kelowna, B.C.
Canada V1Y 9L3
Phone: 250 - 860-3130
Fax: 250 - 860-3110
Toll Free: 1-877-545-6287
e-mail: celltech@globuswireless.com
web site: www.globuswireless.com

Applicant Information:

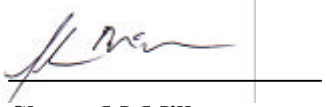
QMTEL CO., LTD.
14th FL., Dongwha B/D 58-7, Seosomun-Dong
Choong-Ku, Seoul, Korea 100-110
Attn: Zen Lee, Sales & Marketing Manager

FCC Classification:	**Licensed Non-Broadcast Station Transmitter (TNB)**
FCC Rule Part(s):	**§22.901(d), §2**
FCC ID:	**PKSQMTQMODEM800P**
Model(s):	**Q-MODEM 800P**
Equipment Type:	**Cellular CDMA Data Modem Module for Palm V/Vx**
Tx Frequency Range:	**824.70 - 848.31 MHz**
Rx Frequency Range:	**869.70 - 893.31 MHz**
Max. RF Output Power:	**0.264 Watts (ERP)**
Frequency Tolerance:	**2.5 PPM**
Emission Designator:	**1M25F9W**

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Celltech Research Inc. certifies that no party to this application has been denied FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).



Shawn McMillen
General Manager
Celltech Research Inc.

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MEASUREMENT REPORT - FCC PART 22.901(d)

1.1 SCOPE

Measurement and determination of electromagnetic emissions (EME) from radio frequency devices for compliance with the technical rules and regulations of the Federal Communications Commission.

§2.1033(a) General Information

APPLICANT:

QMTEL CO., LTD.
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FCC ID	**PKSQMTQMODEM800P**
Model(s)	**Q-MODEM 800P**
EUT Type	**Cellular CDMA Data Modem Module for Palm V/Vx Handheld Organizer**
FCC Classification	**Licensed Non-Broadcast Station Transmitter (TNB)**
FCC Rule Part(s)	**§22.901(d), §2**
Max. RF Output Power	**0.264 Watts (ERP)**
Tx Freq. Range	**824.70 - 848.31 MHz**
Rx Freq. Range	**869.70 - 893.31 MHz**
Emission Designator	**1M25F9W**
Modulation	**CDMA**
Battery Type(s)	**Li-ion 3.7V 650mAh Model: QBLI-800**

2.1 MEASUREMENT PROCEDURES

2.2 OCCUPIED BANDWIDTH - §2.1049(c)

The antenna output terminal of the EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator. The radio transmitter was operating at maximum output power with and without internal data modulation. 100% of the in-band modulation was below the specified mask per §22.917.

Specified Limits:

(a) On any frequency removed from the assigned carrier frequency by more than 20kHz, up to and including 45kHz, the sideband was at least 26dB below the carrier.

(b) On any frequency removed from the assigned carrier frequency by more than 45kHz, up to and including 90kHz, the sideband was at least 45dB below the carrier.

(c) On any frequency removed from the assigned carrier frequency by more than 90kHz, up to the first multiple of the carrier frequency, the sideband was at least 60dB below the carrier of $40 + \log_{10}$ (mean power output in Watts) dB, whichever was the smaller attenuation.

2.3 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL - §2.1051

The level of the carrier and the various conducted spurious and harmonic frequencies was measured by means of a calibrated spectrum analyzer. The spectrum was scanned from 10MHz to 20GHz. The transmitter was modulated with a 2500Hz tone at a level of 16dB greater than that required to provided 50% modulation. The antenna output terminal of the EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator and coaxial cable. The transmitter was operating at maximum power with internal data modulation.

2.4 RADIATED SPURIOUS AND HARMONIC EMISSIONS - §2.1053

Radiated and harmonic emissions above 1 GHz were measured at our 3-meter outdoor site. The EUT was placed on the turntable with the transmitter transmitting into a non-radiating load. A receiving antenna located 3 meters from the turntable received any signal radiated from the transmitter and its operating accessories. The receiving antenna was varied from 1 to 4 meters and the polarization was varied (horizontal and vertical) to determine the worst-case emission level.

2.5 FREQUENCY STABILITY/TEMPERATURE VARIATION - §2.1055

The frequency stability of the transmitter was measured by:

a) Temperature: The temperature was varied from -30°C to +60°C using an environmental chamber.

b) Primary Supply Voltage: The primary supply voltage was varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied. The EUT was tested down to the battery endpoint .

Specification – The minimum frequency stability shall be +/- 0.00025% at any time during normal operation.

Time Period and Procedure:

1. The carrier frequency of the transmitter and the individual oscillators was measured at room temperature (25°C to 27°C to provide a reference).
2. The equipment was subjected to an overnight "soak" at -30°C without any power applied.
3. After the overnight "soak" at -30°C (usually 14-16 hours), the equipment was turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators was made within a three-minute interval after applying power to the transmitter.
4. Frequency measurements were made at 10°C intervals up to +60°C, then back to room temperature. A minimum period of one and one half-hour was provided to allow stabilization of the equipment at each temperature level.

3.1 TEST DATA

3.2 EFFECTIVE RADIATED POWER OUTPUT - §2.1046

800MHz CDMA MODE

Frequency Tuned	EUT Conducted Power	Max. Field Strength of EUT (antenna extended) (dBm)		Dipole Gain	Dipole Forward Conducted Power	ERP of EUT Dipole Gain + Dipole Forward Conducted Power	
(MHz)	(dBm)	V	H	(dBd)	(dBm)	(dBm)	Watts
824.70	24.8	- 12.10	- 13.34	- 1.44	25.63	24.19	0.262
835.89	24.8	- 10.52	- 12.12	- 1.34	25.55	24.21	0.264
848.31	24.8	- 12.37	- 13.76	- 1.24	25.20	23.96	0.249

Notes:

ERP Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The field of maximum intensity was found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. The spectrum analyzer was set to measure channel power for CDMA mode. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A half-wave dipole was substituted in place of the EUT. The dipole was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the dipole, and the input level of the dipole was adjusted to the same field strength level as the EUT. The feed point for the dipole was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the dipole antenna. The conducted power at the antenna feed point was recorded. The forward power for the dipole was then determined and the ERP level was determined by adding the forward dipole power and the dipole gain in dB. For readings above 1GHz the above method is repeated using standard gain horn antennas.

3.3 FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053

Operating Frequency:	824.70 MHz
Channel:	1013 (Low)
Measured Conducted Power:	24.8 dBm
Modulation:	CDMA (Internal)
Distance:	3 meters
Limit:	43 + 10 $\log_{10}$ (W) = 37.48 dBc

800MHz CDMA MODE

Frequency (MHz)	Level (dBm)	Horn Forward Cond. Pwr. (dBm)	Standard-Gain Horn Antenna Gain (dBi)	POL (H/V)	EIRP (dBm)	ERP (dBm)	dBc
1649.40	≤ - 74.35	- 46.55	6.6	H	- 39.95	- 42.09	66.28
2474.10	≤ - 82.70	- 52.90	7.8	H	- 45.10	- 47.24	71.43
3298.80	≤ - 102.31	- 72.93	7.75	H	- 65.18	- 67.32	91.51
4123.50	≤ - 105.47	- 76.45	7.6	H	- 68.85	- 70.99	95.18
4948.20	≤ - 105.90	- 79.54	8.5	H	- 71.04	- 73.18	97.37
5772.90	≤ - 105.63	- 74.75	8.8	H	- 65.95	- 68.09	92.28
6597.60	≤ - 104.82	- 65.46	9.6	H	- 55.86	- 58.00	82.19
7422.30	≤ - 102.66	- 64.52	9.0	H	- 55.52	- 57.66	81.85
8247.00	≤ - 101.70	- 68.40	9.3	H	- 59.10	- 61.24	85.43

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The field of maximum intensity was found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A standard gain horn antenna was substituted in place of the EUT. The antenna was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the antenna, and the input level of the antenna was adjusted to the same field strength level as the EUT. The feed point for the antenna was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the horn antenna. The conducted power at the antenna feed point was recorded. The forward power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

800MHz CDMA MODE

Operating Frequency: 835.89 MHz
Channel: 363 (Mid)
Measured Conducted Power: 24.8 dBm
Modulation: CDMA (Internal)
Distance: 3 meters
Limit: $43 + 10 \log_{10} (W) = 37.48$ dBc

Frequency (MHz)	Level (dBm)	Horn Forward Cond. Pwr. (dBm)	Standard-Gain Horn Antenna Gain (dBi)	POL (H/V)	EIRP (dBm)	ERP (dBm)	dBc
1671.78	≤ - 76.88	- 49.58	6.6	H	- 42.98	- 45.12	69.33
2507.67	≤ - 84.63	- 52.29	7.8	H	- 44.49	- 46.63	70.84
3343.56	≤ -107.88	- 79.94	7.75	H	- 72.19	- 74.33	98.54
4179.45	≤ -106.89	- 77.56	7.6	H	- 69.96	- 72.10	96.31
5015.34	≤ - 108.19	- 79.47	8.5	H	- 70.97	- 73.11	97.32
5851.23	≤ - 103.45	- 67.59	8.8	H	- 58.79	- 60.93	85.14
6687.12	≤ - 106.34	- 75.06	9.6	H	- 65.46	- 67.60	91.81
7523.01	≤ - 105.50	- 65.55	9.0	H	- 56.55	- 58.69	82.90
8358.90	≤ - 109.88	- 75.41	9.3	H	- 66.11	- 68.25	92.46

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The field of maximum intensity was found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A standard gain horn antenna was substituted in place of the EUT. The antenna was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the antenna, and the input level of the antenna was adjusted to the same field strength level as the EUT. The feed point for the antenna was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the horn antenna. The conducted power at the antenna feed point was recorded. The forward power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

800MHz CDMA MODE

Operating Frequency: 848.31 MHz
Channel: 777 (High)
Measured Conducted Power: 24.8 dBm
Modulation: CDMA (Internal)
Distance: 3 meters
Limit: $43 + 10 \log_{10} (W) = 37.48$ dBc

Frequency (MHz)	Level (dBm)	Horn Forward Cond. Pwr. (dBm)	Standard-Gain Horn Antenna Gain (dBi)	POL (H/V)	EIRP (dBm)	ERP (dBm)	dBc
1697.40	≤ - 75.11	- 48.37	6.6	H	- 41.77	- 43.91	67.87
2546.10	≤ - 84.29	- 53.15	7.8	H	- 45.35	- 47.49	71.45
3394.80	≤ -106.91	- 80.34	7.75	H	- 73.09	- 75.23	99.19
4243.50	≤ -107.34	- 78.20	7.6	H	- 70.60	- 72.74	96.70
5092.20	≤ - 106.08	- 80.46	8.5	H	- 71.96	- 74.10	98.06
5940.90	≤ - 106.16	- 75.16	8.8	H	- 66.36	- 68.50	92.46
6789.60	≤ - 104.04	- 65.88	9.6	H	- 56.28	- 58.42	82.38
7638.30	≤ - 105.38	- 68.72	9.0	H	- 59.72	- 61.86	85.82
8487.00	≤ - 104.34	- 68.29	9.3	H	- 58.99	- 61.13	85.09

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The field of maximum intensity was found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A standard gain horn antenna was substituted in place of the EUT. The antenna was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the antenna, and the input level of the antenna was adjusted to the same field strength level as the EUT. The feed point for the antenna was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the horn antenna. The conducted power at the antenna feed point was recorded. The forward power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

3.4 FREQUENCY STABILITY - § 2.1055

Operating Frequency: 835,890,000 Hz

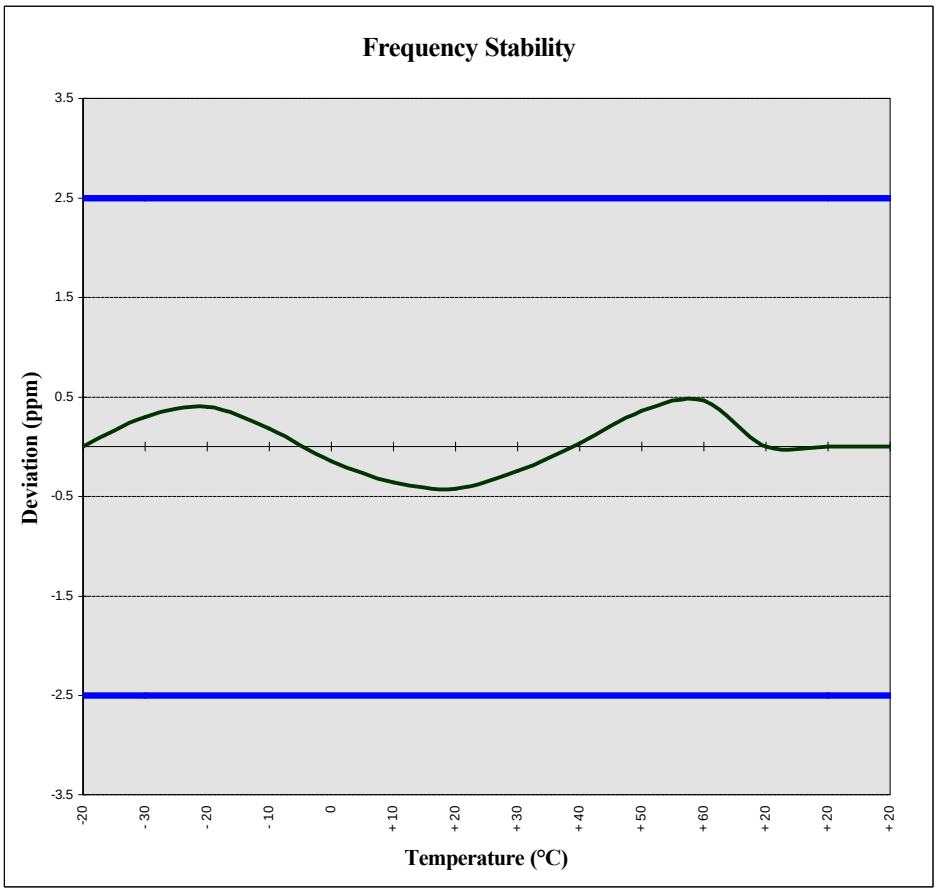
Channel: 363

Reference Voltage: 3.7 VDC

Deviation Limit: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (ºC)	FREQ. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	835890000	0.00000000
100 %		- 30	835889750	0.00000030
100 %		- 20	835889665	0.00000040
100 %		- 10	835889850	0.00000018
100 %		0	835890121	-0.00000014
100 %		+ 10	835890297	-0.00000036
100 %		+ 20	835890355	-0.00000042
100 %		+ 30	835890203	-0.00000024
100 %		+ 40	835889973	0.00000003
100 %		+ 50	835889701	0.00000036
100 %		+ 60	835889614	0.00000046
85 %	3.14	+ 20	835890000	0.00000000
115 %	4.25	+ 20	835890000	0.00000000
BATT. ENDPOINT	2.40	+ 20	835890000	0.00000000

FREQUENCY STABILITY - § 2.1055



4.1 TEST EQUIPMENT

Type	Model	Calib. Date	Serial No.
HP Signal Generator	8648D (9kHz-4.0GHz)	Nov 1999	3847A00611
Rohde & Schwarz Signal Generator	SMR40 (10MHz-40GHz)	Nov 2000	835537/022
Gigatronics Power Meter	8652A	Oct 1999	1835272
Gigatronics Power Sensor (2)	80701A (0.05-18GHz)	Oct 1999	1833535, 1833542
Amplifier Research Power Amp.	5S1G4 (5W, 800MHz-4.2GHz)	N/A	26235
Microwave System Amplifier	HP 83017A (0.5-26.5GHz)	N/A	3123A00587
Network Analyzer	HP 8753E (30kHz-3GHz)	Nov 1999	US38433013
Audio Analyzer	HP 8903B	March 1999	3729A18691
Modulation Analyzer	HP 8901A	March 1999	3749A07154
Frequency Counter	HP 53181A (3GHz)	May 1999	3736A05175
DC Power Supply	HP E3611A	N/A	KR83015294
CDMA Base Station Test Set	Agilent E8285A	N/A	US40332926
Multi-Device Controller	EMCO 2090	N/A	9912-1484
Mini Mast	EMCO 2075	N/A	0001-2277
Turntable	EMCO 2080-1.2/1.5	N/A	0002-1002
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	Oct. 2000	6267
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	Oct. 2000	6276
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept 1998	9120A-239
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept 1998	9120A-240
Roberts Dipoles	Compliance Design (2 sets) 3121C	June 2000	
Spectrum Analyzer	HP 8594E	March 2000	3543A02721
Spectrum Analyzer	HP E4408B	Nov 1999	US39240170
Shielded Screen Room	Lindgren R.F. 18W-2/2-0	N/A	16297
Environmental Chamber	ESPEC ECT-2 (Temperature/Humidity)	Feb 2000	0510154-B

5.1 CONCLUSION

The data in this measurement report shows that the QMTEL CO., LTD. Model: Q-MODEM 800P FCC ID: PKSQMTQMODEM800P Cellular CDMA Data Modem Module for Palm V/Vx handheld organizer complies with all the requirements of Parts 2 and 22.901(d) of the FCC rules.