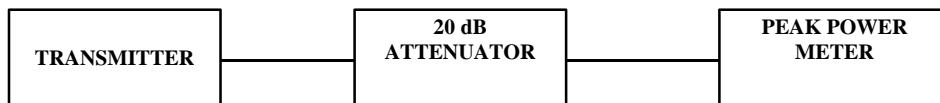


6.7.3. Test Arrangement



6.7.4. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Hewlett Packard	HP 8593EM	3412A00103	9 kHz – 26.5 GHz
Peak Power Meter & Peak Power Sensor	Hewlett Packard	8900 8481A	2131A00124 2551A01965	0.1-18 GHz 50 Ohms Input
Microwave Amplifier	Hewlett Packard	HP 83017A		1 GHz to 26.5 GHz
Horn Antenna	EMCO	3155	9701-5061	1 GHz – 18 GHz
Horn Antenna	EMCO	3155	????	1 GHz – 18 GHz

6.7.5. Test Data

6.7.5.1. Test Configuration #1: Data Rate at 2 Mbps with DQPSK Modulation

EIRP MEASUREMENTS - CALCULATION METHOD

Duty cycle: Continuous

Duty Cycle X = $10 \cdot \log(\text{duty cycle})$ = 0 dB

Transmitter Channel	Frequency (MHz)	Antenna Gain G (dBi)	(wideband) Peak Power P @ Antenna Port (dBm)	(wideband) Calculated Peak EIRP (P+G+X) (dBm)	Limit (dBm)
Lowest	2412	2.4	14.1	16.5	30
Middle	2437	2.4	14.1	16.5	30
Highest	2462	2.4	14.1	16.5	30

ULTRATECH GROUP OF LABS

3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4

Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: yhk.ultratech@sympatico.ca, Website: <http://www.ultratech-labs.com>

File #: GTT-014FTX

March 17, 2000

- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia)
- Accredited by Industry Canada (Canada) under ACC-LAB (Europe/Canada MRA)
- Recognized/Listed by FCC (USA)
- All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)

EIRP MEASUREMENTS – SUBSTITUTION METOD

- Spectrum 99% BW: B = 15.2 MHz
- Duty Cycle: X = 0 dB
- Antenna Gain = 2.4 dBi

Frequency (MHz)	E-Field in 1 MHz BW@ 3m (dB μ V/m)	Antenna Polarization (V/H)	Power from Signal GEN. + Cable Loss S (dBm)	Substitution Antenna Gain G (dBi)	Measured Total Peak EIRP = S+G+10*log(BW) (dBm)	Total Average EIRP = Peak EIRP+X (dBm)
2412	102.28	V	-3.5	8.2	16.5	16.5
2412	104.56	H	-2.8	8.2	17.2	17.2
2437	99.15	V	-6.6	8.2	13.4	13.4
2437	101.91	H	-5.3	8.2	14.7	14.7
2462	99.34	V	-7.3	8.2	12.7	12.7
2462	103.08	H	-3.7	8.2	16.3	16.3

RF EXOSURE LIMIT

Transmitter Channel	Frequency (MHz)	Antenna Gain G (dBi)	(wideband) Average EIRP (dBm)	Power Desity Limit (mW/cm ²)	(*) Safety Distance Limit (cm)
Lowest	2412	2.4	17.2	1.0	2.0
Middle	2437	2.4	14.7	1.0	1.5
Highest	2462	2.4	16.3	1.0	1.8

Note:

(*) RF EXPOSURE DISTANCE LIMITS: $r = (PG/4\pi S)^{1/2} = (EIRP/4\pi S)^{1/2}$

6.7.5.2. Test Configuration #2: Data Rate at 11 Mbps with CCK Modulation

EIRP MEASUREMENTS - CALCULATION METHOD

Duty Cycle X = Continuous.

Duty Cycle X = $10 \log(\text{duty cycle}) = 0$ dB

Transmitter Channel	Frequency (MHz)	Antenna Gain G (dBi)	(wideband) Peak Power P @ Antenna Port (dBm)	(wideband) Calculated Peak EIRP (P+G+X) (dBm)	Limit (dBm)
Lowest	2412	2.4	14.1	16.5	30
Middle	2437	2.4	14.1	16.5	30
Highest	2462	2.4	14.1	16.5	30

ULTRATECH GROUP OF LABS

3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4

Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: yhk.ultratech@sympatico.ca, Website: <http://www.ultratech-labs.com>

File #: GTT-014FTX

March 17, 2000

- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia)
- Accredited by Industry Canada (Canada) under ACC-LAB (Europe/Canada MRA)
- Recognized/Listed by FCC (USA)
- All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)

EIRP MEASUREMENTS – SUBSTITUTION METOD

- Spectrum 99% BW: B = 15.3 MHz
- Duty Cycle: X = 0 dB
- Antenna Gain = 2.4 dBi

Frequency (MHz)	E-Field in 1 MHz BW@ 3m (dB μ V/m)	Antenna Polarization (V/H)	Power from Signal GEN. + Cable Loss S (dBm)	Substitution Antenna Gain G (dBi)	Measured Total Peak EIRP = S+G+10*log(BW) (dBm)	Total Average EIRP = Peak EIRP+X (dBm)
2412	102.94	V	-4.2	8.2	15.8	15.8
2412	107.03	H	-1.9	8.2	18.1	18.1
2437	104.44	V	-2.5	8.2	17.5	17.5
2437	107.28	H	-1.4	8.2	18.6	18.6
2462	99.81	V	-8.4	8.2	11.6	11.6
2462	102.25	H	-5.8	8.2	14.2	14.2

RF EXOSURE LIMIT

Transmitter Channel	Frequency (MHz)	Antenna Gain G (dBi)	(wideband) Average EIRP (dBm)	Power Desity Limit (mW/cm ²)	(*) Safety Distance Limit (cm)
Lowest	2412	2.4	18.1	1.0	2.3
Middle	2437	2.4	18.6	1.0	2.4
Highest	2462	2.4	14.2	1.0	1.5

Note:

(*) RF EXPOSURE DISTANCE LIMITS: $r = (PG/4\pi S)^{1/2} = (EIRP/4\pi S)^{1/2}$

For mobile or base transmitters, the minimum RF safety distance of 20 cm from the transmitting antenna to the body of a user shall be maintained. The user's manual shall contain the RF exposure warning as follows:

RF EXPOSURE



WARNING: For compliance with the RF exposure requirements regulated by the FCC (Federal Communications Commission), the transmitter's antenna is contained within the equipment enclosure and an additional separation distance of more than 20 cm shall be maintained between the transmitter enclosure, and any part of the user's body.

ULTRATECH GROUP OF LABS

3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4

Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: yhk.ultratech@sympatico.ca, Website: <http://www.ultratech-labs.com>

File #: GTT-014FTX

March 17, 2000

- Assessed by ITI (UK) Competent Body, NVLAP (USA) Accreditation Body & ACA/AUSTEL (Australia)
- Accredited by Industry Canada (Canada) under ACC-LAB (Europe/Canada MRA)
- Recognized/Listed by FCC (USA)
- All test results contained in this engineering test report are traceable to National Institute of Standards and Technology (NIST)