FCC ID: PQ9MCW4

Exhibit 2e

Engineering Report on

Frequency Stability (2.1055)

Author Data	August 30, 1999	Document No.
Jonathan Doll		02400-CERT-FCC-TEST-013
Approved	Rev	File / Reference
Masud S. Attayi		013

CFR 47 Chapter 1 - Federal Communications Commission Rules

Part 2 Required Measurement
2.1055 Frequency Stability - Procedures
(a,b) Frequency Stability - Temperature Variation
(d) Frequency Stability - Voltage Variation

Part 90 Subpart I : Technical Standards
90.213 Frequency Tolerance
(a) Maintain the carrier frequency within 0.00025 % (2.5 ppm) of the assigned frequency.
(b) Maximum power output used for measurement

Frequency and power measurements were performed together with the same set up. Frequency and power data were both recorded across temperature and voltage. The set up used a cable assembly with a power splitter to allow concurrent measurements with the frequency counter, and the power meter. The cable assembly was calibrated to allow compensation of the insertion loss between the transmitter and the power meter.

Calibration for the Cable and Attenuator Loss:

Place: RF Lab in RIM
Date: JULY 28th, 1999

Instruments used:

Instrument	Serial Number	Calibrated on
Network Analyzer HP 8720D	US36140834	05/08/99
Calibration Kit HP85033D	3423A00734	05/08/99

Procedure:

Full Two port Calibration of 8720D using the 85033D was done.

An assembly of Cables, Attenuator, power splitter, and connectors were set up to complete the RF power measurements.

Attenuator: 20dB, DC to 1500 MHz - Mini-Circuits model no: NAT-20
Power splitter 3 Port: 4.50 dB - Mini-Circuits model no: MCL ZN3PD- 900W

The total loss of this cable assembly from the RF input to the RF output was measured to be 26.16 dB at 815.0 ± 6 MHz.

Power and frequency measurements of RIM Radio Modem at different temperatures:

Place: RF Lab in RIM
Date: JULY 28th, 1999

Instruments used:

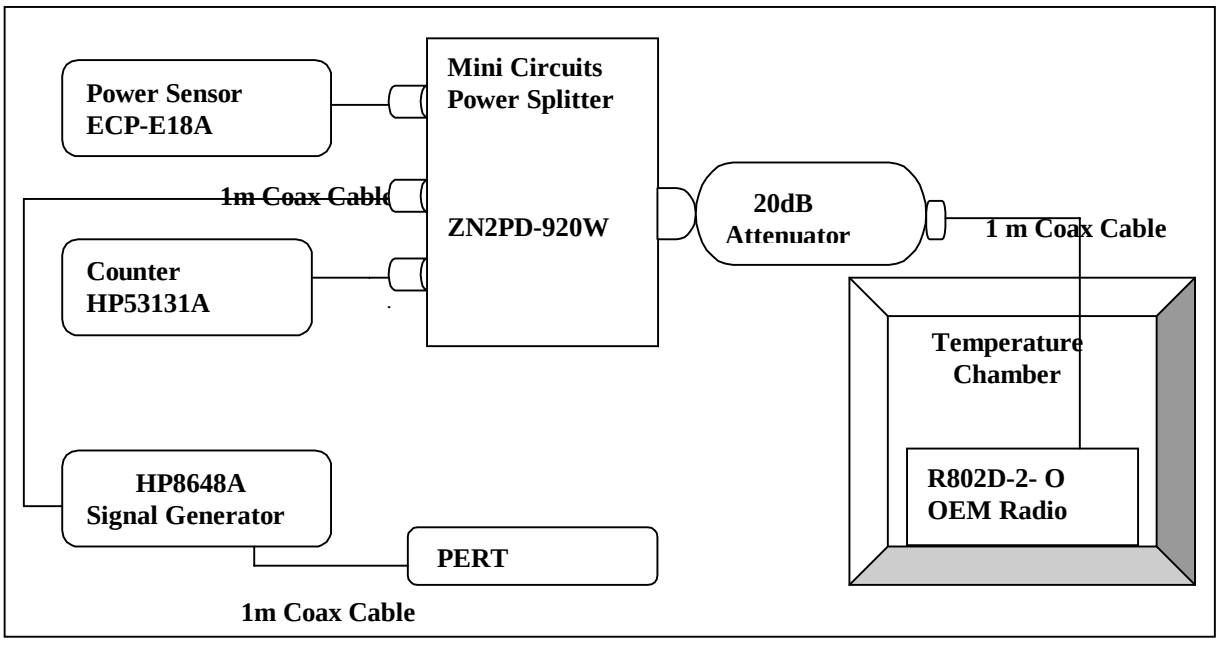
Instrument	Serial number	Calibrated on
DC Power supply HP 6632B	US37472173	28/07/99
Universal Counter HP 53131A	3736A18844	03/08/99
Power Meter HP EPM-441A	GB37481300	05/08/99
Power Sensor HP ECP-E18A	US37181260	05/08/99

Temperature Chamber used:

Manufacturer: Envirotronics
Model: SH8C
Serial No: 01984093-S-10860

Procedure:

The RIM Radio Modem was placed in the Temperature chamber and connected to the instruments outside as shown in the figure below. Dry air was pumped inside the temperature chamber to maintain a back pressure during the test. The Radio was kept in the off condition at all times except when the measurements were to be made.



The chamber was switched on and the temperature was set to -30°C.

After the chamber stabilized at -30 °C there was a soak period of one hour to alleviate moisture in the chamber. The Radio was switched on and frequency and power measurements were made as follows:

The RIM Radio automated test utility was controlled by a computer. This application was given the command of activating all machines intrinsic to the temperature test. It controls the HP 53131A universal counter, HP 6632B power supply, and HP EPM-441A power meter by GPIB Bus. The Environmental Chamber was instructed through an RS-232 serial line. The RIM Radio Modem dialogue was passed through a serial connection from the controlling computer to a Radio Modem Interface. The radio was put in repetitive transmit modes and the power and frequency levels were measured and recorded by the RIM automated test utility.

The RIM Radio Modem Automated test utility produces data files in text format. All data from this test has been formatted from the initial files into a single Spreadsheet.

The RIM Radio Modem output was characterized through its power and frequency across temperature (-30°C to 60°C), and transmit frequency (806 MHz to 821 MHz) at an output power of 33 dBm.

The Radio Modem power and frequency were measured at voltages of 4.15, 4.45 and 4.75 VDC. The transmit frequency was varied in 3 steps consisting of 806 MHz, 815 MHz and 821 MHz. This frequency generated by the RIM Radio Modem has been recorded in MHz and also as deviation from nominal in Parts Per Million.

The output from the RIM Radio Modem was accounted from -30°C to 60°C in +5°C steps. The radio was interrogated for data every 18 seconds for each measurement and 6.0 minutes for each voltage readings. From activity the radio heats up and produces different signals. This heating led to much data which characterizes the radio over most temperatures, not just at 5°C intervals.

After the initial one hour soak, a ½ hour soak was accomplished between the subsequent temperature steps.

PROCEDURE

This process was affected through automation.

1. Switch on the HP 6632B, power supply and set the Voltage to 4.45 V
2. Set the initial Environmental Chamber temperature (-30 Degrees Celsius) and hold for initial soak.
3. Set the frequency to 806 MHz, and power to 33 dBm on RIM Radio Modem.
4. Activate Carrier on RIM Radio Modem.
5. Take initial HP EPM-441A power meter measurement.
6. Take initial HP 53131A frequency counter measurement.
7. Measure temperature of product.
8. Measure power output.
9. Measure frequency output
10. Increase temperature by 5°C and soak for 1/2 hour. Repeat steps 8 - 10 for twenty measurements every 18 seconds for 6 minutes.
11. Repeat steps 3 - 10 for 815 MHz and 821 MHz.
12. Increase temperature by 5°C and soak for 1/2 hour.

13 Repeat steps 2-12 for temperatures –30 degrees to 60 degrees Celsius.

Procedure 3 to 12 was then repeated at 25°C with the power supply voltage set to 4.15, 4.45 and 4.75V.

Author Data	August 30, 1999	Document No.
Jonathan Doll		02400-CERT-FCC-TEST-014
Approved	Rev	File / Reference
Masud S. Attayi		014

CFR 47 Chapter 1 - Federal Communication Commission Rules

Part 2 Required Measurement
2.1055 Frequency Stability - Procedures
(a,b) Frequency Stability - Temperature Variation

Part 90 - Subpart I : Technical Standards
90.213 Frequency Tolerance
(a) Maintain the carrier frequency within 0.00025 % (2.5 ppm) of the assigned frequency.
(b) Maximum power output used for measurement

Procedure: These results were obtained using the test procedure described in document 02400 -CERT-FCC-TEST-013.

Results: 806 MHz nominal transmitter

Ambient Temperature (Degrees Celsius)	Minimum Device Temperature (Degrees Celsius)	Maximum Device Temperature (Degrees Celsius)	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
-30	-22.4	-21.8	0.4591	1.3251
-25	-17.4	-16.8	0.5112	0.5112
-20	-12.7	-12	0.4218	0.4218
-15	-7.4	-6.6	0.2767	0.2767
-10	-2.2	-1.5	0.1427	0.1427
-5	3	3.5	0.0298	0.0347
0	8	8.6	-0.0360	0.8524
5	12.5	13.2	-0.0658	0.8189
10	17.6	18.3	-0.0682	-0.0906
15	22.3	23.1	-0.0273	-0.0298
20	27.8	28.6	0.0757	0.0968
25	33.1	33.8	0.1923	0.2072
30	37.8	39.1	0.2643	0.2655
35	42.5	44.1	0.2382	0.2382
40	48.1	49.1	0.0620	0.0620
45	53	54.2	-0.2060	-0.3400
50	58.3	59.6	-0.5546	-0.7060
55	63.1	64.5	-0.9094	-1.0434
60	67.9	69.3	-1.1849	-1.2556

Results: 815 MHz nominal transmitter

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Ambient Temperature (Degrees Celsius)	Minimum Device Temperature (Degrees Celsius)	Maximum Device Temperature (Degrees Celsius)	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
-30	-22.6	-22.1	0.3988	1.3055
-25	-17.5	-16.9	0.4761	0.5031
-20	-12.7	-12.1	0.3693	0.3791
-15	-7.5	-7	0.2000	1.0847
-10	-2.4	-1.9	0.0810	0.0969
-5	2.7	3.3	-0.0135	-0.0135
0	7.7	8.3	-0.0712	0.8147
5	12.2	12.8	-0.1141	-0.1153
10	17.5	18	-0.0945	-0.1006
15	22.3	22.8	-0.0552	-0.0613
20	27.8	28.3	0.0429	0.9423
25	33	33.8	0.1558	0.2098
30	37.9	38.6	0.2221	0.2638
35	42.7	43.6	0.1963	0.2184
40	47.9	48.7	0.0160	0.0380
45	53	54.1	-0.2724	-0.3092
50	58	59.2	-0.6184	-0.6761
55	63.2	64.3	-0.9669	-1.0074
60	68.3	69.2	-1.2319	-1.2405

Results: 821 MHz nominal transmitter

Ambient Temperature (Degrees Celsius)	Minimum Device Temperature (Degrees Celsius)	Maximum Device Temperature (Degrees Celsius)	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
-30	-27.9	-27.9	0.3362	1.1949
-25	-23	-22.9	0.4641	0.4653
-20	-18.2	-18.1	0.3995	0.3995
-15	-13.3	-13.1	0.2521	0.2558
-10	-8.3	-8.2	0.1242	0.1267
-5	-3.5	-3.2	0.0037	0.0097
0	1.4	1.6	-0.0633	-0.0804
5	6.2	6.3	-0.1084	-0.1242
10	11	11.1	-0.1121	-0.1303
15	15.9	16.1	-0.0828	-0.0901
20	20.9	21	0.0085	0.9123
25	25.9	25.9	0.1218	1.0305
30	30.8	30.9	0.2095	0.2241
35	35.7	35.8	0.2266	0.2266
40	40.6	40.7	0.0877	0.0877
45	45.6	45.7	-0.1705	-0.2777
50	50.5	50.7	-0.5104	-0.6322
55	55.4	55.5	-0.8636	-0.9805
60	60.4	60.5	-1.1669	-1.2460

Author Data	Date	Document No.
Jonathan Doll	August 30, 1999	02400-CERT-FCC-TEST-015
Approved	Rev	File / Reference
Masud S. Attayi		015

CFR 47 Chapter 1 - Federal Communication Commission Rules

Part 2 Required Measurement
2.1055 Frequency Stability - Procedures
(d) Frequency Stability - Voltage Variation

Part 90 Subpart I : Technical Standards
90.213 Frequency Tolerance
(a) Maintain the carrier frequency within 0.00025 % (2.5 ppm) of the assigned frequency.
(b) Maximum power output used for measurement

Procedure: These results were obtained using the test procedure described in document 02400 -CERT-FCC-TEST-013.

Results: 806 MHz. nominal transmitter.

Ambient Temperature [Degrees Celsius]	Device Supply Voltage [Volts]	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
25.0	4.15	-0.0186	1.0074
25.0	4.45	0.1923	0.2072
25.0	4.75	0.2035	0.2221

Results: 815 MHz. nominal transmitter.

Ambient Temperature [Degrees Celsius]	Device Supply Voltage [Volts]	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
25.0	4.15	0.1902	1.0577
25.0	4.45	0.1558	0.2098
25.0	4.75	0.1975	0.2172

Results: 821 MHz. nominal transmitter.

Ambient Temperature [Degrees Celsius]	Device Supply Voltage [Volts]	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
25.0	4.15	-0.0572	1.0171
25.0	4.45	0.1218	1.0305
25.0	4.75	0.1291	0.1462

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Jonathan Doll	August 30, 1999	02400-CERT-FCC-TEST-015
Approved	Rev	File / Reference
Masud S. Attayi		015

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2.1055 Frequency Stability - Procedures
(d) Frequency Stability - Voltage Variation

Part 90 Subpart I : Technical Standards
90.213 Frequency Tolerance
(a) Maintain the carrier frequency within 0.00025 % (2.5 ppm) of the assigned frequency.
(b) Maximum power output used for measurement

Procedure: These results were obtained using the test procedure described in document 02400 -CERT-FCC-TEST-013.

Results: 806 MHz. nominal transmitter.

Ambient Temperature [Degrees Celsius]	Device Supply Voltage [Volts]	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
25.0	4.15	-0.0186	1.0074
25.0	4.45	0.1923	0.2072
25.0	4.75	0.2035	0.2221

Results: 815 MHz. nominal transmitter.

Ambient Temperature [Degrees Celsius]	Device Supply Voltage [Volts]	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
25.0	4.15	0.1902	1.0577
25.0	4.45	0.1558	0.2098
25.0	4.75	0.1975	0.2172

Results: 821 MHz. nominal transmitter.

Ambient Temperature [Degrees Celsius]	Device Supply Voltage [Volts]	Initial Frequency Deviation [ppm]	Maximum Deviation [ppm]
25.0	4.15	-0.0572	1.0171
25.0	4.45	0.1218	1.0305
25.0	4.75	0.1291	0.1462