

**FCC ID: PQ9MCW4**

**Exhibit 2c**

**Engineering Report on**

**Bandwidth (2.1049) Modulation Characteristics (2.1047)**

|                              |                 |   |
|------------------------------|-----------------|---|
| Author Data<br>Jonathan Doll | August 30, 1999 | Document No.<br>02400-CERT-FCC-TEST-BW_MASK |
| Approved<br>Masud S. Attayi  | Rev             | File / Reference<br>BW Masks                |

### OCCUPIED BANDWIDTH/BANDWIDTH LIMITATIONS

#### TEST PROCEDURE:

The Research In Motion Limited R802D-2-O Radio modem was connected together with a host computer, external power supply and a 20 dB external attenuator. The R802D-2-O antenna output terminal was connected to the input of a 50  $\Omega$  spectrum analyzer through a matched 20 dB attenuator. The R802D-2-O transmitter was operating at full output power with and without internal data modulation.

#### TEST RESULTS:

UNMODULATED CARRIER, High Power: **12.87dBm** with a 20dB external pad and a 1 m Sucoflex cable with a total loss of 0.18 dB.

Internal Modulation: Please refer to the attached spectrum analyzer plots. 100% of the in-band modulation is below the specified mask per 90.210(g) for both RD\_LAP and MDC protocols.

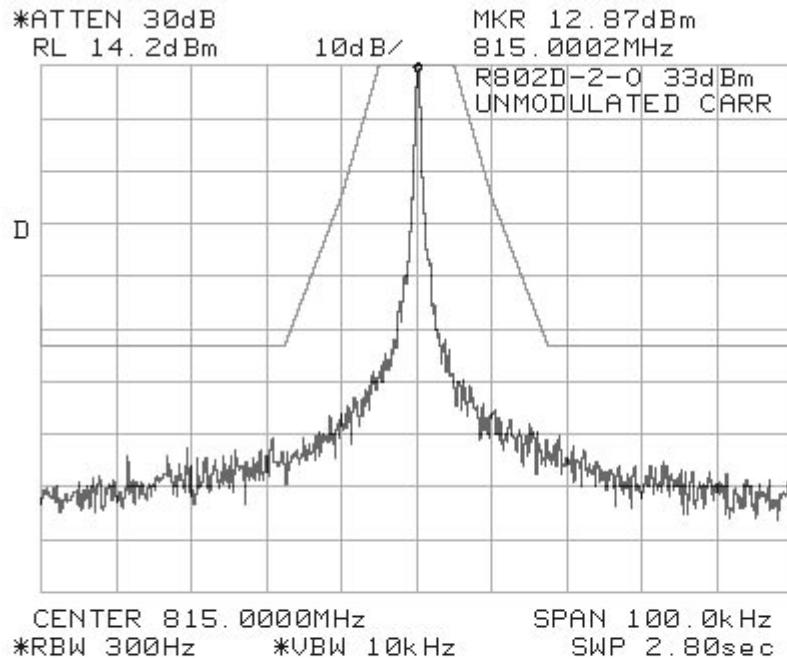
Below is the **description of the mask** for band 806-821/851-866 MHz (DataTAC) : 2.0 Watts transmitter

| Frequency<br>(MHz) | Formula   | Limit<br>(Db) |
|--------------------|---|---------------|
| -26500             | 43+10 log (P)   | -46           |
| -0.050             | 43+10 log (P)   | -46           |
| -0.050             | 50+10 log (P)   | -53           |
| -0.0175            | 116 log (f <sub>d</sub> / 6.1)                                | -53           |
| -0.010             | 116 log (f <sub>d</sub> / 6.1) or 83 log (f <sub>d</sub> / 5) | -25           |
| -0.005             | 83 log (f <sub>d</sub> / 5)                                   | 0.0           |
| 0.005              | 83 log (f <sub>d</sub> / 5)                                   | 0.0           |
| 0.010              | 116 log (f <sub>d</sub> / 6.1) or 83 log (f <sub>d</sub> / 5) | -25           |
| 0.0175             | 116 log (f <sub>d</sub> / 6.1)                                | -53           |
| 0.050              | 50+10 log (P)   | -53           |
| 0.050              | 43+10 log (P)   | -46           |
| 26500              | 43+10 log (P)   | -46           |

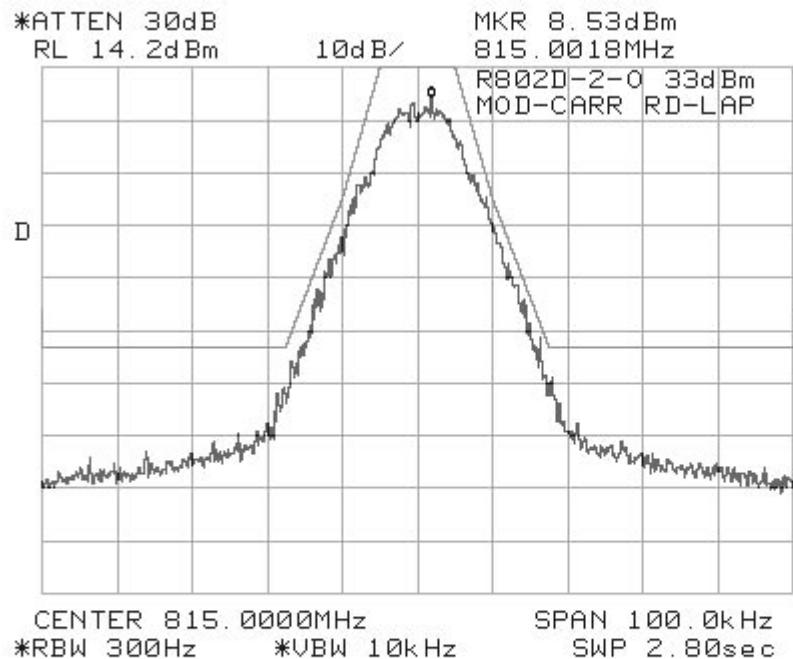
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| DaTE            | Rev | Document |
| August 30, 1999 |     | BW Masks |

## EQUIPMENT:

- H.P. 8563E Spectrum Analyzer 9.0 KHz - 26.5 GHz
- HP6632B DC POWER SUPPLY
- Mini Circuits 20 dB att. # NAT-20 0 Hz - 1.5 GHz

**OCCUPIED BANDWIDTH/BANDWIDTH LIMITATIONS  
 UNMODULATED CARRIER**

**OCCUPIED BANDWIDTH/BANDWIDTH LIMITATIONS  
 MODULATED CARRIER – RD\_LAP**

| DaTE            | Rev | Document |
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| DaTE            | Rev | Document |
| August 30, 1999 |     | BW Masks |

**OCCUPIED BANDWIDTH/BANDWIDTH LIMITATIONS****MODULATED CARRIER MDC**