

### Key Features

- ◆ Fully Qualified Bluetooth V2.0+EDR
- ◆ Enhanced Data Rate (EDR) compliant with V2.0.E.2 of the specification for both 2Mbps and 3Mbps modulation modes
- ◆ Full Speed Bluetooth Operation with full Piconet and Scatternet Support
- ◆ Low power 1.8V operation
- ◆ USB, UART, PCM interface
- ◆ Support for 802.11 Co-Existence.



### Product Description

The 6B is a Bluetooth module based on CSR BC04 External chipsets with an antenna integrated. It is BQB qualified. When used with the CSR Bluetooth software stack, it provides a fully compliant Bluetooth system to v2.0 of the Bluetooth specification for data and voice communications.

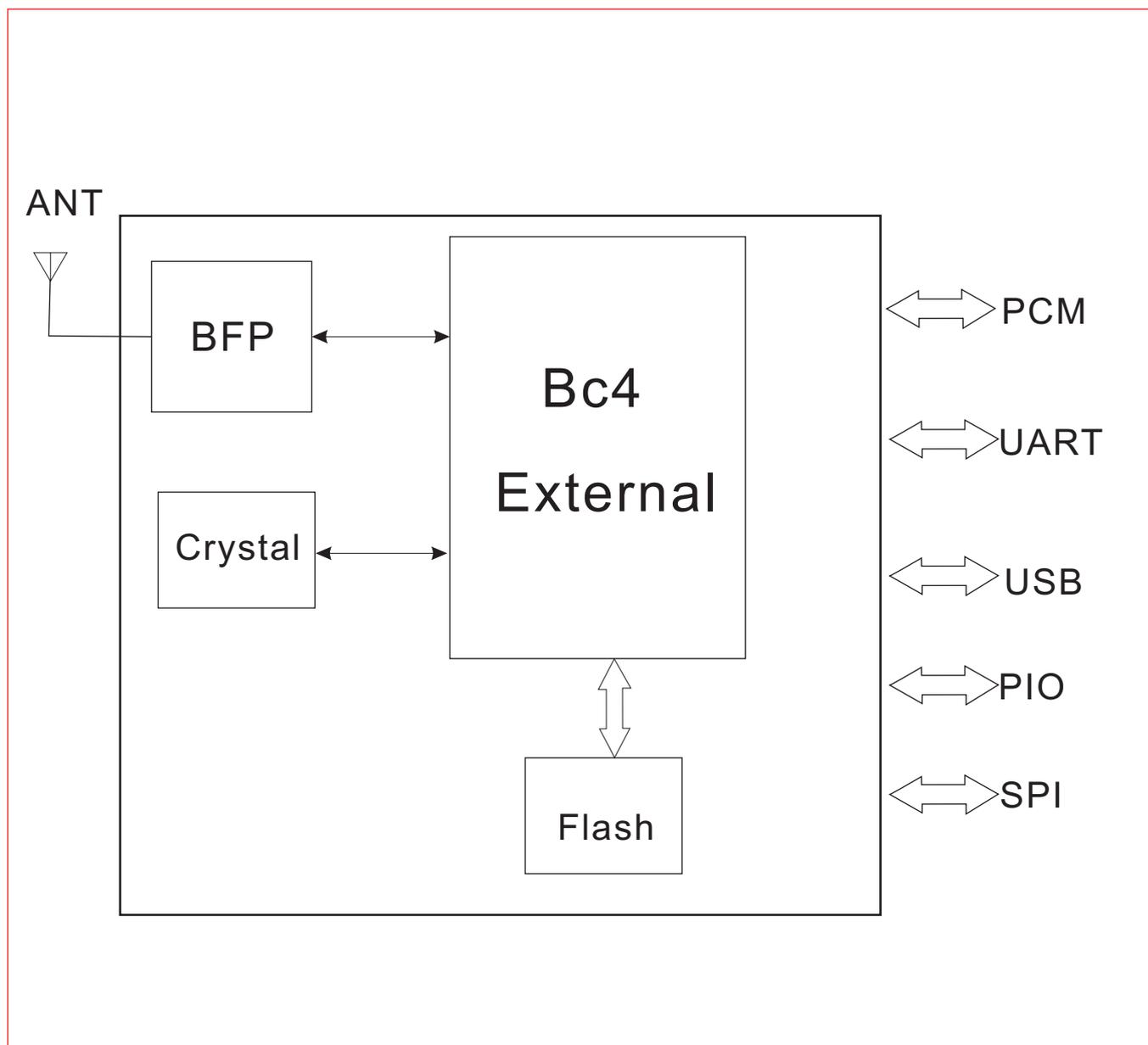
## Applications

- ◆ PCs
- ◆ Personal Digital Assistants(PDAs)
- ◆ Computer Accessories
- ◆ Access Points
- ◆ Digital Cameras

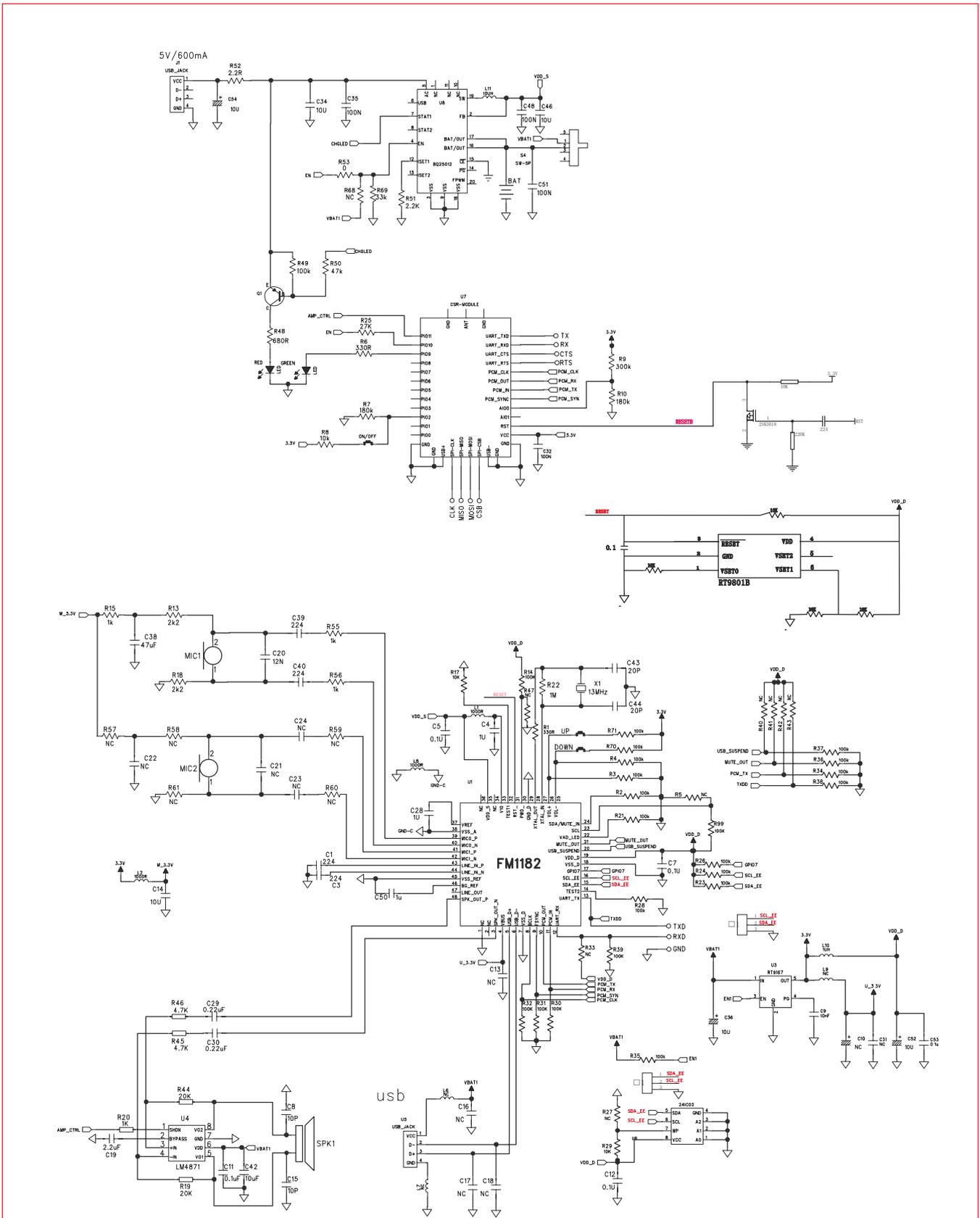
**General Specification**

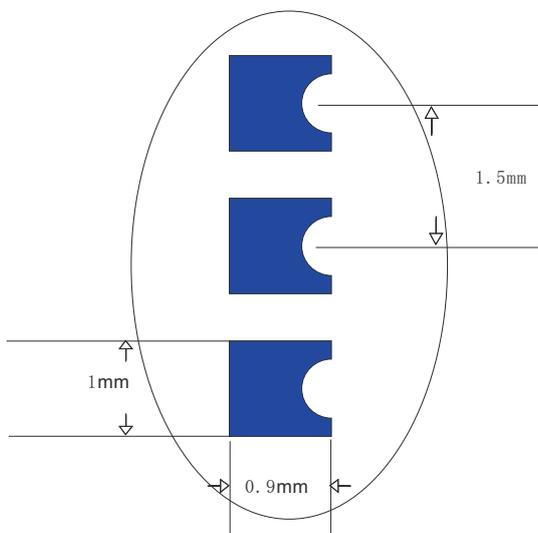
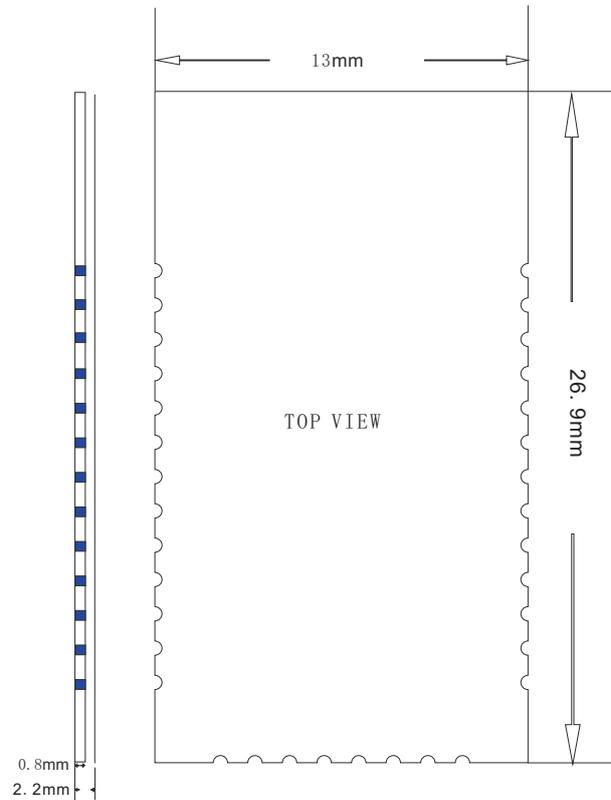
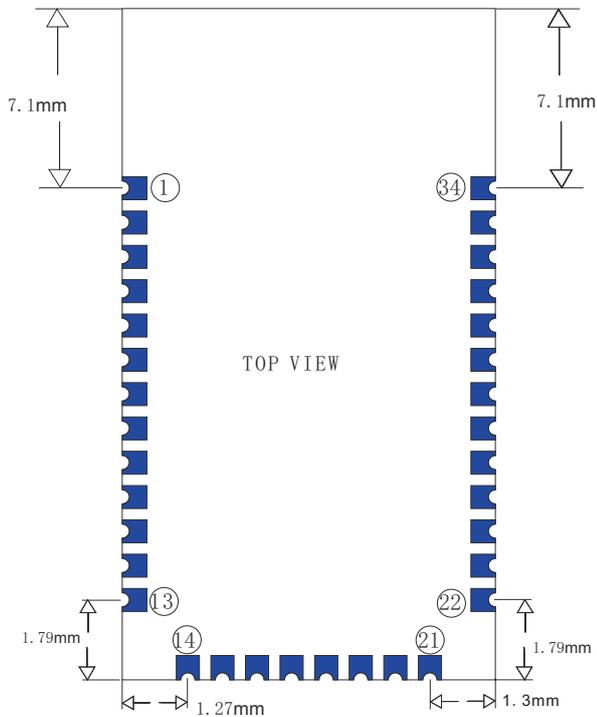
| <b>NO</b> | <b>Item</b>                   | <b>Specification</b>   |
|-----------|-------------------------------|--|
| <b>1</b>  | <b>Supply Voltage</b>         | <b>3.3V</b>  |
| <b>2</b>  | <b>Output Voltage</b>         | <b>1.8V</b>  |
| <b>3</b>  | <b>Working current</b>        | <b>15-30 mA</b>  |
| <b>4</b>  | <b>Carrier Frequency</b>      | <b>2400MHZ-2483.5MHZ</b>                                       |
| <b>5</b>  | <b>Transmission Power</b>     | <b>5dbm MAX</b>  |
| <b>6</b>  | <b>Hopping</b>                | <b>1600hops/sec,1M channel space</b>                           |
| <b>7</b>  | <b>Receiving Signal Range</b> | <b>-80 to -20 dbm Typ</b>                                      |
| <b>8</b>  | <b>Communication range</b>    | <b>10 meters Typ</b>   |
| <b>9</b>  | <b>Operating Temperature</b>  | <b>-10to +45 degree C</b>                                      |
| <b>10</b> | <b>Storage Temperature</b>    | <b>-10~ +70 degree C</b>                                       |
| <b>11</b> | <b>Compliant</b>              | <b>Bluetooth Specification Ver1.1 &amp; 1.2<br/>&amp; V2.0</b> |

Block Diagram



Application Schematic





| NO | PIN NAME | NO | PIN NAME |
|----|----------|----|----------|
| 1  | UART-TX  | 18 | SPI-MISO |
| 2  | UART-RX  | 19 | SPI-CLK  |
| 3  | UART-CTS | 20 | USB D+   |
| 4  | UART-RTS | 21 | GND      |
| 5  | PCM-CLK  | 22 | GND      |
| 6  | PCM-OUT  | 23 | PIO(0)   |
| 7  | PCM-IN   | 24 | PIO(1)   |
| 8  | PCM-SYNC | 25 | PIO(2)   |
| 9  | AIO(0)   | 26 | PIO(3)   |
| 10 | AIO(1)   | 27 | PIO(4)   |
| 11 | RESET    | 28 | PIO(5)   |
| 12 | 3.3V     | 29 | PIO(6)   |
| 13 | GND      | 30 | PIO(7)   |
| 14 | GND      | 31 | PIO(8)   |
| 15 | USB D-   | 32 | PIO(9)   |
| 16 | SPI-CSB  | 33 | PIO(10)  |
| 17 | SPI-MOSI | 34 | PIO(11)  |

## Pin Configurations

| PIN NO. | NAME     | TYPE                                      | FUNCTION  | RE-MARK          |
|---------|----------|---|---|------------------|
| 1       | UART-TX  | CMOS Output                               | UART Data Output  |                  |
| 2       | UART-RX  | CMOS Input                                | UART Data Input   |                  |
| 3       | UART-CTS | CMOS Input                                | UART Clear To Send Active Low   |                  |
| 4       | UART-RTS | CMOS Output                               | UART Request To Send Active Low   |                  |
| 5       | PCM-CLK  | Bi-directional                            | Synchronous Data Clock  |                  |
| 6       | PCM-OUT  | CMOS Output                               | Synchronous Data Output   |                  |
| 7       | PCM-IN   | CMOS Input                                | Synchronous Data Input  |                  |
| 8       | PCM-SYNC | Bi-directional                            | Synchronous Data Sync   |                  |
| 9       | AIO(0)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 10      | AIO(1)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 11      | RESETB   | CMOS Input                                | Reset if low. Input debounced so must be low for >5ms to cause a reset          |                  |
| 12      | 3.3V     | POWER                                     | +3.3V Supply  | For 3.3V Version |
| 13      | GND      | GND                                       | Ground  |                  |
| 14      | GND      | GND                                       | Ground  |                  |
| 15      | USB D-   | Bi-directional                            | USB Data Minus  |                  |
| 16      | SPI-CSB  | CMOS Input                                | Chip Select For Synchronous Serial Interface                                    |                  |
| 17      | SPI-MOSI | CMOS Input                                | Serial Peripheral Interface Data Input  |                  |
| 18      | SPI-MISO | CMOS Output                               | Serial Peripheral Interface Data Output   |                  |
| 19      | SPI-CLK  | CMOS Input                                | Serial Peripheral Interface Clock   |                  |
| 20      | USB D+   | Bi-directional                            | USB Data Plus with selectable internal 1.5K $\Omega$                            |                  |
| 21      | GND      | GND                                       | Ground  |                  |
| 22      | GND      | GND                                       | Ground  |                  |
| 23      | PIO(0)   | Bi-directional with programmable strength | Control output for external LNA (if fitted)                                     |                  |
| 24      | PIO(1)   | Bi-directional with programmable strength | Control output for external PA (if fitted)                                      |                  |
| 25      | PIO(2)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 26      | PIO(3)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 27      | PIO(4)   | Bi-directional with programmable strength | Programmable Input/Output Line or optional<br>BT Priority/CH Clk output for co- |                  |
| 28      | PIO(5)   | Bi-directional with programmable strength | Programmable Input/Output Line or optional<br>BT Active output for co-existence |                  |
| 29      | PIO(6)   | Bi-directional with programmable strength | Programmable Input/Output Line or optional<br>WLAN Active/Ch Data input for co- |                  |
| 30      | PIO(7)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 31      | PIO(8)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 32      | PIO(9)   | Bi-directional                            | Programmable Input/Output Line  |                  |
| 33      | PIO(10)  | Bi-directional                            | Programmable Input/Output Line  |                  |
| 34      | PIO(11)  | Bi-directional                            | Programmable Input/Output Line  |                  |

## Anritsu Blue Test Report

页码, 1/4

Anritsu  
BlueTest2 Test ReportTest Set Serial Number: 6K00004754  
EUT Bluetooth Address: 00025B00A5B7Date: 2006-7-15  
Time: 13:53:45

Overall Result: PASS

TRM/CA/01/C (Output Power)

Packet Length Tested: DH5

| Hopping ON           | Low      | Med      | High     | Limits      |
|----------------------|----------|----------|----------|-------------|
| Average Power        | 3.14 dBm | 3.47 dBm | 3.39 dBm |             |
| Max Power            | 3.20 dBm | 3.53 dBm | 3.47 dBm | < 20.00 dBm |
| Min Power            | 3.11 dBm | 3.42 dBm | 3.35 dBm | > -6.00 dBm |
| Peak Power           | 3.31 dBm | 3.65 dBm | 3.60 dBm | < 23.00 dBm |
| Total Packets Failed | 0        | 0        | 0        |             |
| Total Packets Tested | 10       | 10       | 10       |             |
| Result               | Pass     | Pass     | Pass     |             |

TRM/CA/02/C (Power Control)

Packet Length Tested: DH1

| Hopping OFF          | Low       | Med       | High      | Limits     |
|----------------------|-----------|-----------|-----------|------------|
| Max Power            | 3.10 dB   | 3.40 dB   | 3.30 dB   |            |
| Min Power            | -25.60 dB | -24.70 dB | -25.00 dB |            |
| Max Power Step       | 4.80 dB   | 4.50 dB   | 4.60 dB   | <= 8.00 dB |
| Min Power Step       | 3.80 dB   | 3.80 dB   | 3.80 dB   | >= 2.00 dB |
| Total Packets Failed | 0         | 0         | 0         |            |
| Total Packets Tested | 14        | 14        | 14        |            |
| Result               | Pass      | Pass      | Pass      |            |

TRM/CA/08/C (Initial Carrier)

Packet Length Tested: DH1

| Hopping ON           | Low      | Med      | High     | Limits    |
|----------------------|----------|----------|----------|-----------|
| Average Offset       | 3.1 kHz  | 6.6 kHz  | 5.8 kHz  |           |
| Max Offset           | 9.8 kHz  | 12.5 kHz | 16.6 kHz | <= 75 kHz |
| Min Offset           | -2.2 kHz | -3.9 kHz | -4.0 kHz | <= 75 kHz |
| Total Packets Failed | 0        | 0        | 0        |           |
| Total Packets Tested | 10       | 10       | 10       |           |
| Result               | Pass     | Pass     | Pass     |           |

TRM/CA/09/C (Carrier Drift)

| Hopping On - Low Channel | DH1      | DH3       | DH5       | Limits         |
|--------------------------|----------|-----------|-----------|----------------|
| Drift Rate / 50 $\mu$ s  | 3.92 kHz | -5.53 kHz | -7.66 kHz | +/- 20 kHz     |
| Max Drift                | 15 kHz   | 24 kHz    | 25 kHz    | DH1: +/- 25kHz |
| Average Drift            | 5 kHz    | 9 kHz     | 7 kHz     | DH3: +/- 40kHz |
| Total Packets Failed     | 0        | 0         | 0         | DH5: +/- 40kHz |
| Total Packets Tested     | 10       | 10        | 10        |                |
| Overall Result           | Pass     | Pass      | Pass      |                |

| Hopping On - Med Channel | DH1      | DH3       | DH5      | Limits         |
|--------------------------|----------|-----------|----------|----------------|
| Drift Rate / 50 $\mu$ s  | 4.51 kHz | -6.31 kHz | 5.87 kHz | +/- 20 kHz     |
| Max Drift                | 10 kHz   | 17 kHz    | 19 kHz   | DH1: +/- 25kHz |
| Average Drift            | 0 kHz    | 6 kHz     | 4 kHz    | DH3: +/- 40kHz |
| Total Packets Failed     | 0        | 0         | 0        | DH5: +/- 40kHz |
| Total Packets Tested     | 10       | 10        | 10       |                |
| Overall Result           | Pass     | Pass      | Pass     |                |

| Hopping On - High Channel | DH1       | DH3      | DH5       | Limits         |
|---------------------------|-----------|----------|-----------|----------------|
| Drift Rate / 50 $\mu$ s   | -5.26 kHz | 6.23 kHz | -6.76 kHz | +/- 20 kHz     |
| Max Drift                 | -10 kHz   | 15 kHz   | 18 kHz    | DH1: +/- 25kHz |
| Average Drift             | -2 kHz    | 2 kHz    | 1 kHz     | DH3: +/- 40kHz |
| Total Packets Failed      | 0         | 0        | 0         | DH5: +/- 40kHz |
| Total Packets Tested      | 10        | 10       | 10        |                |
| Overall Result            | Pass      | Pass     | Pass      |                |

TRM/CA/07/C (Modulation Characteristic)

Packet Length Tested: DH5

| Hopping OFF          | Low       | Med       | High      | Limits               |
|----------------------|-----------|-----------|-----------|----------------------|
| 'F1avg'              | 163.4 kHz | 164.2 kHz | 162.7 kHz | 140kHz < F1 < 175kHz |
| 'F1max'              | 167.6 kHz | 167.8 kHz | 167.5 kHz |                      |
| F1 Packets Failed    | 0         | 0         | 0         |                      |
| 'F2avg'              | 165.4 kHz | 165.0 kHz | 165.0 kHz |                      |
| 'F2max'              | 156.8 kHz | 157.6 kHz | 155.7 kHz | >= 115 kHz           |
| 'F2max' Pass Rate    | 100.00%   | 100.00%   | 100.00%   |                      |
| F1/F2 Ratio          | 1.01      | 1.00      | 1.01      | >= 0.8               |
| Total Packets Tested | 20        | 20        | 20        |                      |
| Result               | Pass      | Pass      | Pass      |                      |

RCV/CA/02/C (Single Sensitivity)

Power Level: -71 dBm, Dirty Tx Status: OFF

| <b>Hopping ON</b>    | <b>Any</b> | <b>Limits</b> |
|----------------------|------------|---------------|
| Overall BER          | 0.00%      | <= 0.1%       |
| Overall FER          | 0.00%      | <= 100%       |
| Packets Sent         | 7408       |               |
| Total Packets Tested | 7408       |               |
| Total Packets Failed | 0          |               |
| Bit Errors           | 0          |               |
| CRC Errors           | 0          |               |
| Length Errors        | 0          |               |
| Lost Packets         | 0          |               |
| Result               | Pass       |               |

| <b>Hopping OFF</b>   | <b>Low</b> | <b>Med</b> | <b>High</b> | <b>Limits</b> |
|----------------------|------------|------------|-------------|---------------|
| Overall BER          | 0.00%      | 0.00%      | 0.00%       | <= 0.1%       |
| Overall FER          | 0.04%      | 0.00%      | 0.00%       | <= 100%       |
| Packets Sent         | 7408       | 7408       | 7408        |               |
| Total Packets Tested | 7405       | 7408       | 7408        |               |
| Total Packets Failed | 0          | 0          | 0           |               |
| Bit Errors           | 3          | 0          | 0           |               |
| CRC Errors           | 0          | 0          | 0           |               |
| Length Errors        | 0          | 0          | 0           |               |
| Lost Packets         | 3          | 0          | 0           |               |
| Result               | Pass       | Pass       | Pass        |               |

RCV/CA/01/C (Multi Slot Sensitivity)

Power Level: -71 dBm, Dirty Tx Status: OFF, Packet Length Tested: DH5

| <b>Hopping ON</b>    | <b>Any</b> | <b>Limits</b> |
|----------------------|------------|---------------|
| Overall BER          | 0.02%      | <= 0.1%       |
| Overall FER          | 1.36%      | <= 100%       |
| Packets Sent         | 590        |               |
| Total Packets Tested | 590        |               |
| Total Packets Failed | 367        |               |
| Bit Errors           | 8          |               |
| CRC Errors           | 8          |               |
| Length Errors        | 1          |               |
| Lost Packets         | 0          |               |
| Result               | Pass       |               |

| <b>Hopping OFF</b>   | <b>Low</b> | <b>Med</b> | <b>High</b> | <b>Limits</b> |
|----------------------|------------|------------|-------------|---------------|
| Overall BER          | 0.01%      | 0.03%      | 0.02%       | <= 0.1%       |
| Overall FER          | 0.85%      | 4.24%      | 0.85%       | <= 100%       |
| Packets Sent         | 590        | 590        | 590         |               |
| Total Packets Tested | 590        | 590        | 590         |               |
| Total Packets Failed | 213        | 467        | 283         |               |
| Bit Errors           | 5          | 25         | 5           |               |
| CRC Errors           | 5          | 25         | 5           |               |
| Length Errors        | 0          | 0          | 0           |               |
| Lost Packets         | 0          | 0          | 0           |               |
| Result               | Pass       | Pass       | Pass        |               |

***RCV/CA/02/C (Max Input Level)***

Power Level: -19dBm

| <b>Hopping OFF</b>   | <b>Low</b> | <b>Med</b> | <b>High</b> | <b>Limits</b> |
|----------------------|------------|------------|-------------|---------------|
| Overall BER          | 0.00%      | 0.00%      | 0.00%       | <= 0.1%       |
| Overall FER          | 0.00%      | 0.00%      | 0.00%       | <= 100%       |
| Packets Sent         | 7408       | 7408       | 7408        |               |
| Total Packets Tested | 7408       | 7408       | 7408        |               |
| Total Packets Failed | 0          | 0          | 0           |               |
| Bit Errors           | 0          | 0          | 0           |               |
| CRC Errors           | 0          | 0          | 0           |               |
| Length Errors        | 0          | 0          | 0           |               |
| Lost Packets         | 0          | 0          | 0           |               |
| Result               | Pass       | Pass       | Pass        |               |

---- Report End ----