

#### 4. GENERAL FEATURES

|           | Item                  | Description   | Notes |
|-----------|-----------------------|---|-------|
| 802.11b/g | Standard              | Complies with the latest IEEE802.11b/g wireless LAN Physical Layer Specification (IEEE 802.11g dated 12/6/2003) |       |
|           | Chip Set              | Marvell 88W8686   |       |
|           | Module Interface Type | SDIO (1bit and 4 bit) , SDIO_SPI , G-SPI  |       |
|           | Module Connection     | 36pin LGA   |       |
|           | Co-existence          | Supports 3-wire BT coexistence scheme for an external BT solution   |       |
|           | Data Rate             | 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto rate<br>802.11b: 11, 5.5, 2, 1Mbps, auto rate                  |       |
|           | Modulation            | OFDM (54, 48, 36, 24, 18, 12, 9, 6Mbps)<br>CCK (11Mbps, 5.5Mbps)<br>DQPSK (2Mbps)<br>DBPSK (1Mbps)              |       |
|           | Operating Frequency   | 2.4GHz ISM band   |       |
|           | Operating Channels    | IEEE Channels 1–11 depending on Regulatory Domain settings  |       |
|           | Others                | Compliance with FCC Class B Part 15.247, R&TTE, TELEC major RF regulatory requirements                          |       |

## 5. RADIO SPECIFICATION

Over full range of values specified in the “Recommended Operation Condition” unless specified otherwise.

| Features                          | Description   |
|-----------------------------------|---|
| Frequency Band                    | 2.4000 – 2.497 GHz (2.4 GHz ISM Band)   |
| Number of selectable Sub channels | 11 channels   |
| Modulation                        | OFDM, DSSS (Direct Sequence Spread Spectrum), DBPSK, DQPSK, CCK , 16QAM, 64QAM              |
| Supported rates                   | 1, 2, 5.5, 11, 6, 9, 12, 18, 24, 36, 48, 54 Mbps  |
| Maximum receive level             | - 10dBm (with PER < 8%)   |
| Output Power                      | 14 dBm +2.0 /-1.5 dBm for 1, 2, 5.5, 11Mbps<br>12 dBm +2.0 /-1.5 dBm for 6 , 9 and > 12Mbps |
| Carrier Frequency Accuracy        | +/- 25ppm (crystal: 38.4MHz +/-5ppm in 250C)  |

### 802.11g EVM Requirement

| Item | Data Rate (Mbps) | Relative Constellation Error (dB) | EVM (%RMS) |
|------|------------------|-----------------------------------|------------|
| 1    | 6 (BPSK)         | -5                                | 56.2       |
| 2    | 9 (BPSK)         | -8                                | 39.8       |
| 3    | 12 (QPSK)        | -10                               | 31.6       |
| 4    | 18 (QPSK)        | -13                               | 22.4       |
| 5    | 24 (16-QAM)      | -16                               | 15.8       |
| 6    | 36 (16-QAM)      | -19                               | 11.2       |
| 7    | 48 (64-QAM)      | -22                               | 7.9        |
| 8    | 54 (64-QAM)      | -25                               | 5.6        |

### 802.11b EVM

| Item | Data Rate (Mbps) | EVM (%RMS) |
|------|------------------|------------|
| 1    | 1 (BPSK)         | 35%        |
| 2    | 2 (QPSK)         | 35%        |
| 3    | 5.5 (QPSK)       | 35%        |
| 4    | 11 (QPSK)        | 35%        |

Sensitivity

| Receiver Characteristics ( 3.3V, 25 degree C ) | Typical | Maximum | Unit |
|--|---------|---------|------|
| PER <8%, Rx Sensitivity @ 11 Mbps              | -85     | -83     | dBm  |
| PER <8%, Rx Sensitivity @ 1 Mbps               | -91     | -89     | dBm  |
| PER <10%, Rx Sensitivity @ 6 Mbps              | -86     | -84     | dBm  |
| PER <10%, Rx Sensitivity @ 54 Mbps             | -70     | -68     | dBm  |

6. The channel center frequency and CHNL\_ID numbers shall be shown in the following table.

| 802.11b/g Channel Center Frequency |                 |
|------------------------------------|-----------------|
| CHNL_ID                            | Frequency (MHz) |
| 1                                  | 2412            |
| 2                                  | 2417            |
| 3                                  | 2422            |
| 4                                  | 2427            |
| 5                                  | 2432            |
| 6                                  | 2437            |
| 7                                  | 2442            |
| 8                                  | 2447            |
| 9                                  | 2452            |
| 10                                 | 2457            |
| 11                                 | 2462            |

7. Antenna Specification

| Item              | Property              |
|-------------------|-----------------------|
| Impedance         | 50 (Typ.)             |
| VSWR              | ≤ 3                   |
| Return Loss       | -9 dB max             |
| Gain              | 1 dBi (Typ.)          |
| Radiation pattern | Vertical Polarization |
| Electrical wave   | 1/4λ dipole           |