

## DFBM-CA220 Bluetooth™ Module Class 2

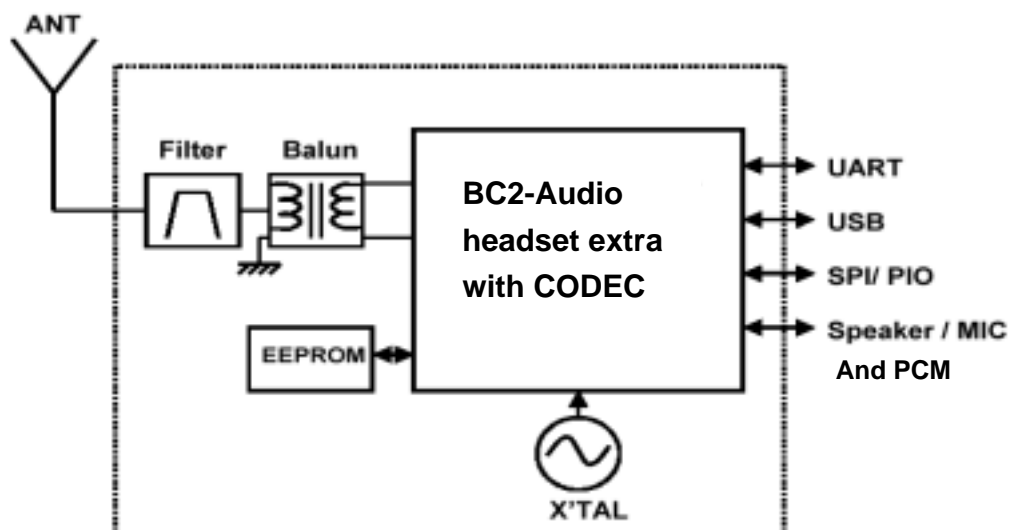
**A Class 2 Bluetooth module compliant with Bluetooth Specification V1.2 for wireless Audio applications.**



### FEATURES:

- **Suitable for Headsets, Cellular Headsets, PDAs ....., etc.**
- **Small size and Low Profile using high-density packaging technology.**
- **High sensitivity for better reception.**
- **Various interfaces: UART, USB and PCM.**
- **Wide operating temperature range: -40~+85 .**

### Device diagram





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## General Specification

|                                |                           |
|--------------------------------|---------------------------|
| <b>Bluetooth Specification</b> | <b>Version 1.2</b>        |
| <b>Frequency</b>               | <b>2402~2480MHz</b>       |
| <b>Modulation</b>              | <b>FHSS/GFSK</b>          |
| <b>Transmission Rate</b>       | <b>721kbps</b>            |
| <b>Receive Sensitivity</b>     | <b>Typ. -78dBm</b>        |
| <b>Maximum Output Power</b>    | <b>+4dBm(Class 2)</b>     |
| <b>Operating Voltage</b>       | <b>2.7~3.6V</b>           |
| <b>Operating Temperature</b>   | <b>-40~+85</b>            |
| <b>Antenna Impedance</b>       | <b>50</b>                 |
| <b>Package Size</b>            | <b>10.5*10.5*2.0 (mm)</b> |

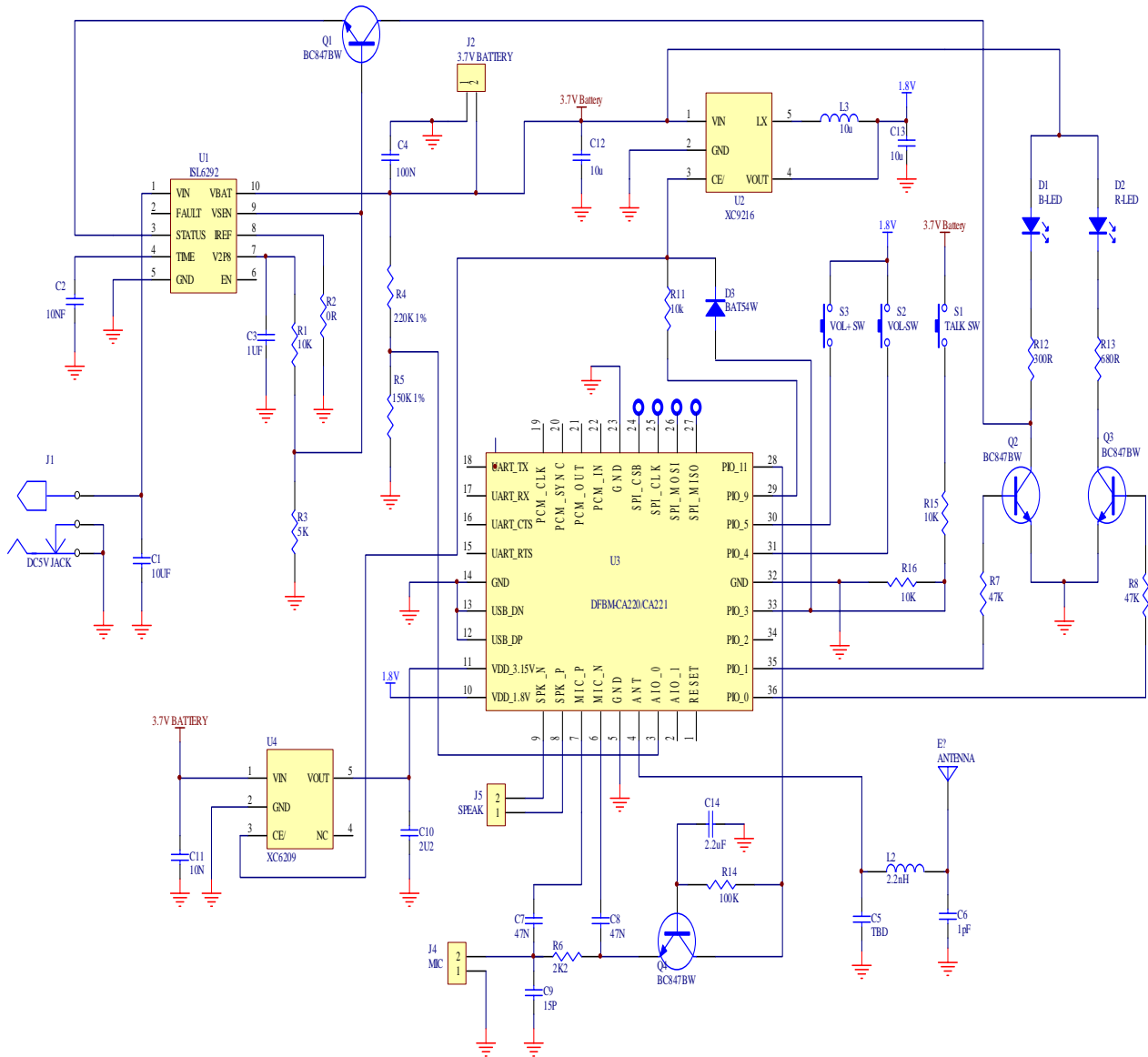


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**Interface**

| <b>Interface</b>      | <b>Description</b>  |
|-----------------------|---|
| <b>Antenna</b>        | <b>External Antenna 50</b>  |
| <b>UART Interface</b> | <b>TX, RX, RTS, CTS(9600bps~1.5Mbps)</b>  |
| <b>SPI Interface</b>  | <b>Synchronous Serial Interface for firmware download</b>                                       |
| <b>USB Interface</b>  | <b>Full speed Universal Serial Bus interface</b>  |
| <b>PCM Codec</b>      | <b>Qualcomm MSM 3000/5000 ,<br/>Motorola MC145483/ MC145481<br/>OKI MSM7705 , STW 5093/5094</b> |
| <b>PIO Interface</b>  | <b>8 terminals</b>  |
| <b>AIO Interface</b>  | <b>2 terminals</b>  |

## Application Circuit



**Pin description**

| <b>Pin No.</b> | <b>Name</b>      | <b>Description</b>   |
|----------------|------------------|--|
| <b>1</b>       | <b>Reset</b>     | <b>An active high reset</b>  |
| <b>2</b>       | <b>AIO_1</b>     | <b>Analogue Programmable input/output</b>                              |
| <b>3</b>       | <b>AIO_0</b>     | <b>Analogue Programmable input/output</b>                              |
| <b>4</b>       | <b>ANT</b>       | <b>RF input/output</b>   |
| <b>5</b>       | <b>Gnd</b>       | <b>Ground</b>  |
| <b>6</b>       | <b>MIC-</b>      | <b>Microphone input negative</b>                                       |
| <b>7</b>       | <b>MIC+</b>      | <b>Microphone input positive</b>                                       |
| <b>8</b>       | <b>SP+</b>       | <b>Speaker output positive</b>   |
| <b>9</b>       | <b>SP-</b>       | <b>Speaker output negative</b>   |
| <b>10</b>      | <b>Vdd_1.8V</b>  | <b>Supply Voltage (1.8V)</b>   |
| <b>11</b>      | <b>Vdd_3.15V</b> | <b>Supply Voltage (3.15V)</b>  |
| <b>12</b>      | <b>USB_DP</b>    | <b>USB data plus with selectable internal 1.5kohm pull-up resistor</b> |
| <b>13</b>      | <b>USB_DN</b>    | <b>USB data minus</b>  |
| <b>14</b>      | <b>Gnd</b>       | <b>Ground</b>  |
| <b>15</b>      | <b>UART_RTS</b>  | <b>UART request to send active low</b>                                 |
| <b>16</b>      | <b>UART_CTS</b>  | <b>UART clear to send active low</b>                                   |
| <b>17</b>      | <b>UART_RX</b>   | <b>UART data input active high</b>                                     |
| <b>18</b>      | <b>UART_TX</b>   | <b>UART data output active high</b>                                    |

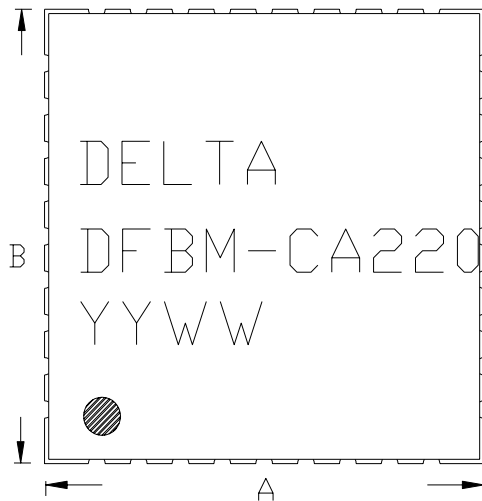


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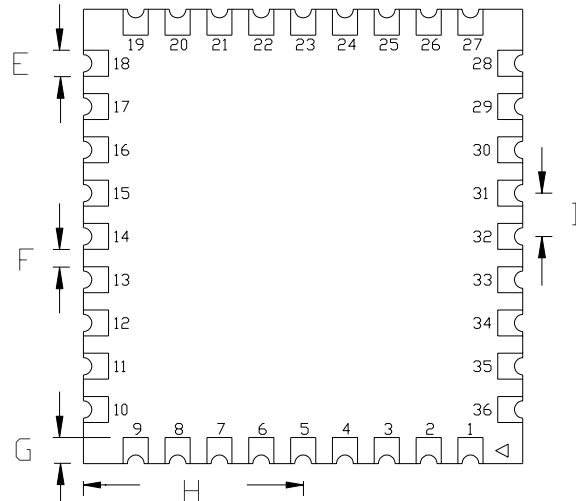
|    |          |   |
|----|----------|---|
| 19 | PCM_CLK  | Synchronous data clock                                  |
| 20 | PCM_SYNC | Synchronous data sync                                   |
| 21 | PCM_OUT  | Synchronous data output                                 |
| 22 | PCM_IN   | Synchronous data input                                  |
| 23 | Gnd      | Ground  |
| 24 | SPI_CSB  | Chip select for Serial Peripheral Interface, active low |
| 25 | SPI_CLK  | Serial Peripheral Interface clock                       |
| 26 | SPI_MOSI | Serial Peripheral Interface data input                  |
| 27 | SPI_MISO | Serial Peripheral Interface data output                 |
| 28 | PIO_11   | Programmable input/output line                          |
| 29 | PIO_9    | Programmable input/output line                          |
| 30 | PIO_5    | Programmable input/output line                          |
| 31 | PIO_4    | Programmable input/output line                          |
| 32 | Gnd      | Ground  |
| 33 | PIO_3    | Programmable input/output line                          |
| 34 | PIO_2    | Programmable input/output line                          |
| 35 | PIO_1    | Programmable input/output line                          |
| 36 | PIO_0    | Programmable input/output line                          |

## Dimensions (mm)

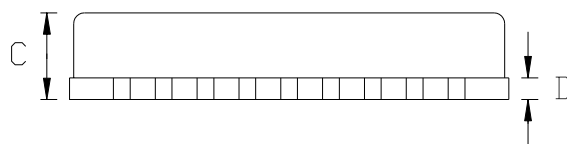
TOP VIEW



BOTTOM VIEW



SIDE VIEW



Unit:mm

|   |          |   |         |   |          |
|---|----------|---|---------|---|----------|
| A | 10.5±0.2 | D | 0.5±0.1 | G | 0.6±0.1  |
| B | 10.5±0.2 | E | 0.6±0.1 | H | 5.25±0.1 |
| C | 2.0 max  | F | 0.4±0.1 | I | 1.0±0.1  |

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