Preliminary

DFBM-CF121

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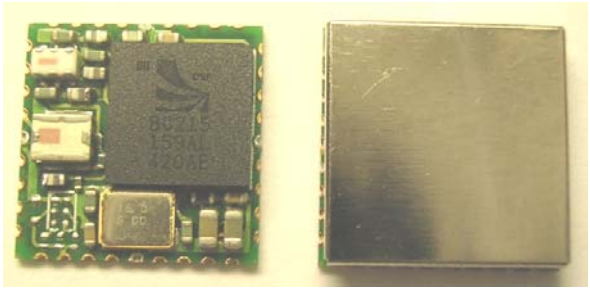
Bluetooth™ Module Class 2

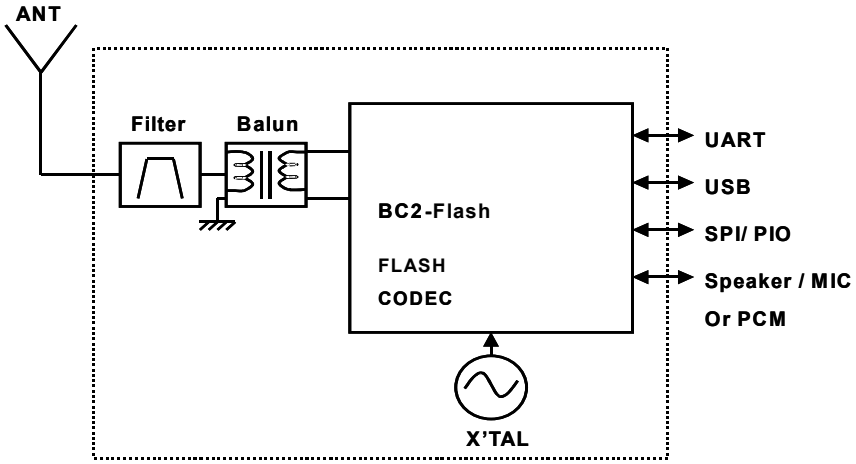
Wireless communication module compliant with Bluetooth™ Specification V1.1/ 1.2



FEATURES:

- ***Build-in codec suitable for GPS, Mono_Headset, PCs, Digital Cameras, Printers ……., etc.***
- ***Small size and Low Profile using high-density packaging technology.***
- ***High sensitivity for better reception.***
- ***Variable profiles with 4M flash ROM.***
- ***Various interfaces: UART, USB and PCM.***
- ***Wide operating temperature range: -40~+85℃.***

Device diagram



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General Specification

Bluetooth Specification	**Depend on SW**
Frequency	**2402~2480MHz**
Modulation	**FHSS/GFSK**
Transmission Rate	**721kbps**
Receive Sensitivity	**Typ. -78dBm**
Maximum Output Power	**+4dBm(Class 2)**
Operating Voltage	**2.7~3.3V**
Operating Temperature	**-40~+85℃**
Antenna Impedance	**50Ω**
Flash Memory	**4M bit**
Package Size	**10.5*10.5*2.0 (mm)**

Interface

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

Rating

	Min	Max	Unit
Storage Temperature	-40	+85	℃
VDD_1.8V	-0.4	+1.9	V
VDD_3.15V	-0.4	+3.6	V

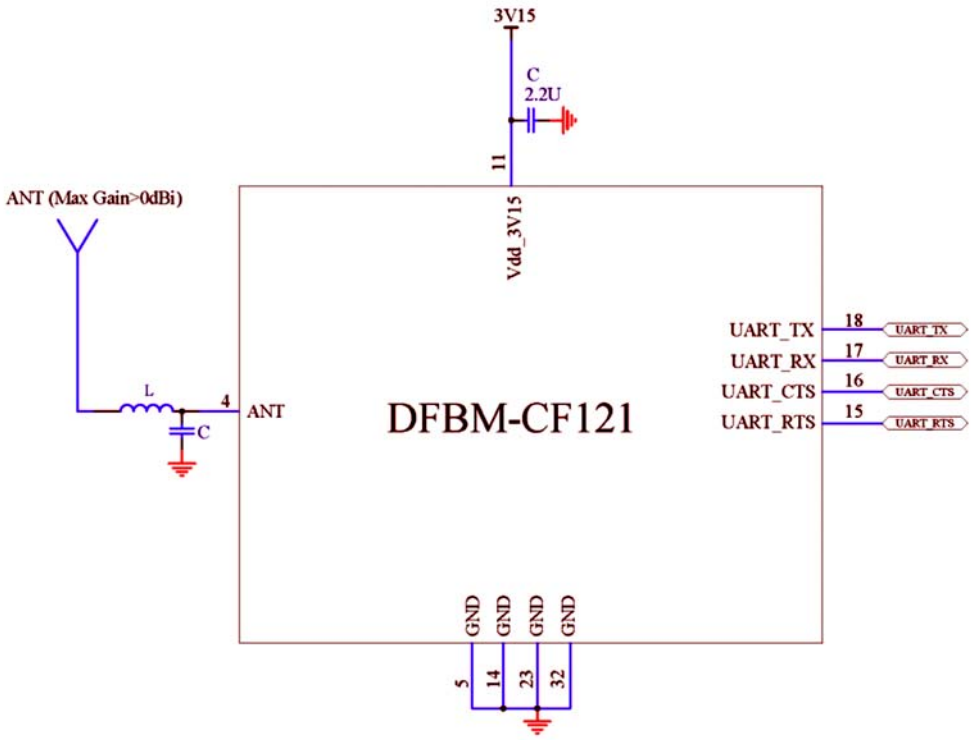
Recommend

	Min	Max	Unit
VDD_1.8V	+1.7	+1.9	V
VDD_3.15V	+2.7	+3.6	V

Current consumption

Typical Average Current Consumption		
VDD=1.8V Temperature = +20°C Output Power = +3dBm		
Mode	**Avg**	**Unit**
SCO connection HV3 (30ms interval Sniff Mode) (Slave)	26.0	mA
SCO connection HV3 (30ms interval Sniff Mode) (Master)	26.0	mA
SCO connection HV3 (No Sniff Mode) (Slave)	32.0	mA
SCO connection HV1 (Slave)	43.0	mA
SCO connection HV1 (Master)	43.0	mA
ACL data transfer 115.2kbps UART no traffic (Master)	7.0	mA
ACL data transfer 115.2kbps UART no traffic (Slave)	24.0	mA
ACL data transfer 720kbps UART (Master or Slave)	50.0	mA
ACL data transfer 720kbps USB (Master or Slave)	50.0	mA
ACL connection, Sniff Mode 40ms interval, 38.4kbps UART	4.0	mA
ACL connection, Sniff Mode 1.28s interval, 38.4kbps UART	0.5	mA
Parked Slave, 1.28s beacon interval, 38.4kbps UART	0.6	mA
Standby Mode (Connected to host, no RF activity)	85.0	μA
Reset (RST high or RSTB low)	55.0	μA

Application circuit



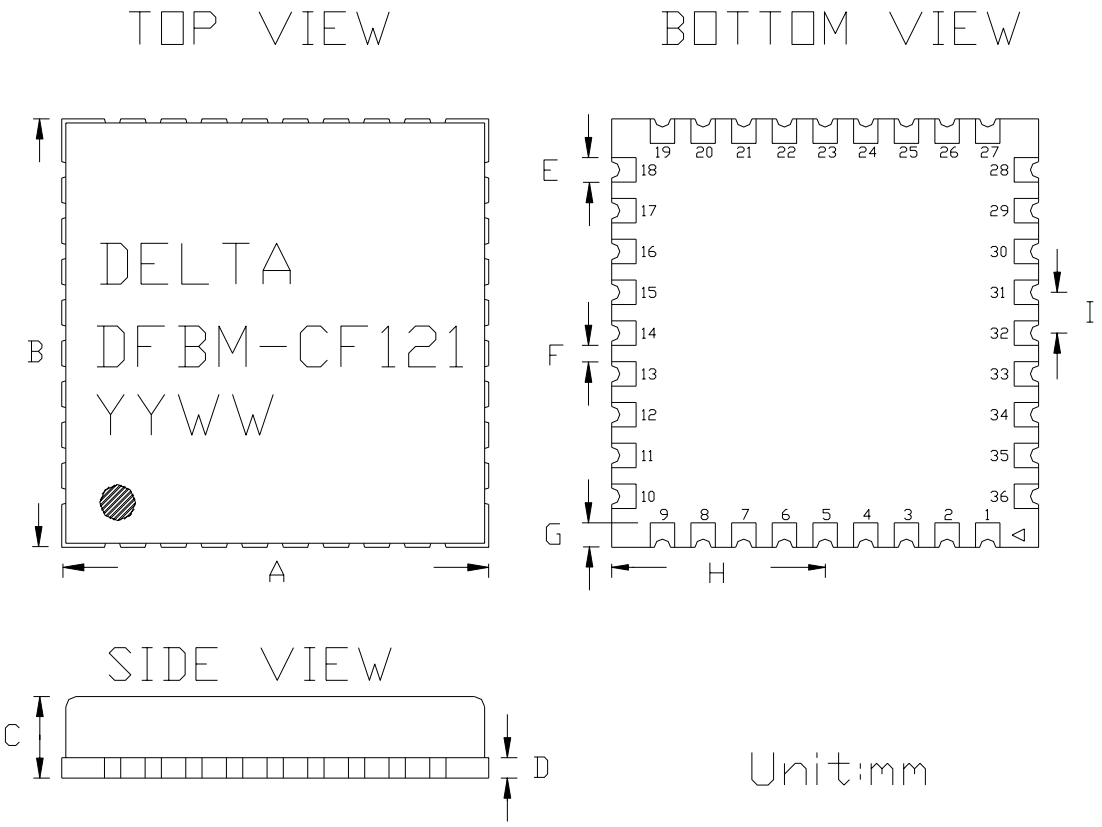
Pin description

Pin No.	Name	Description
1	Reset	An active high reset
2	AIO_1	Analogue Programmable input/output
3	AIO_0	Analogue Programmable input/output

4	ANT	RF input/output
5	Gnd	Ground
6	MIC-	Microphone input negative
7	MIC+	Microphone input positive
8	SP+	Speaker output positive
9	SP-	Speaker output negative
10	Vdd_1.8V	Supply Voltage (1.8V)
11	Vdd_3.15V	Supply Voltage (3.15V)
12	USB_DP	USB data plus with selectable internal 1.5kohm pull-up resistor
13	USB_DN	USB data minus
14	Gnd	Ground
15	UART_RTS	UART request to send active low
16	UART_CTS	UART clear to send active low
17	UART_RX	UART data input active high
18	UART_TX	UART data output active high
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)



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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Record of changes

Date	Content of change
April 27, 2005	1) Includes maximum rating. 2) Includes recommendation. 3) Includes application circuit. 4) Includes current consumption table.

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