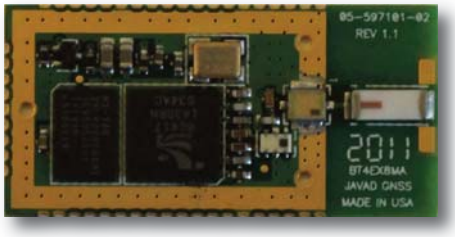
BT4EX8MA



Scale 2:1

BT4EX8MA module is designed for industrial use. The module can be used in extremely low and high temperatures in a wide spectrum of Bluetooth applications. BT4EX8MA's engineering, design and integrated Bluetooth antenna allows integrating this module more simple and fast, without additional cost, saving your money and time.

BT4EX8MA is a Class 2 Bluetooth module using BlueCore4-External chipset from leading Bluetooth chipset supplier Cambridge Silicon Radio (CSR).

BT4EX8MA contains the CSR Bluetooth software stack and is fully compliant with v2.0 of the Bluetooth specification for data and voice communications.

Features

- Fully Qualified Bluetooth v2.0+EDR
- Enhanced Data Rate (EDR) compliant with v2.0.E.2 of specification for both 2Mbps and 3Mbps modulation modes
- Full Speed Bluetooth Operation with Full Piconet Support
- Scatternet Support
- Support for 802.11 Co-Existence
- Flash Memory Size 8Mbit
- Small Form Factor.
  28.8mm X 14.2mm X 2.2mm (without BT shield)
  28.8mm X 14.2mm X 3.3mm (with BT shield)
- RoHS Compliant

Interfaces

- UART or USB Interface
- PCM Audio Interface
- Serial Peripheral Interface (SPI) for Integration, Test and Diagnostics.
- Programmable I/O (PIO) Pins

Electrical

- Operating Voltage +3.3V
- Power consumption 0.26 Watt

Environmental

- Operating Temperature: -40°C to +85°C
- Storage Temperature: -40°C to +85°C

Applications

- Industrial Products
- Handheld Terminals
- Other Portable Devices which require Wireless connectivity.

BT4EX8MA

Pin #	Signal Name	I/O	Pin Type	Description
1	GND			Ground
2	GND			Ground
3	GND			Ground
4	GND			Ground
5	GND			Ground
6	GND			Ground
7	PIO8	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line
8	PIO2	I/O	Bi-directional withprogrammable strength internal pull-up/down	Programmable input/output line
9	PIO9	I/O	Bi-directional withprogrammable strength internal pull-up/down	Programmable input/output line
10	AIO2	I/O	Bi-directional	Programmable input/output line
11	AIO1	I/O	Bi-directional	Programmable input/output line
12	AIO0	I/O	Bi-directional	Programmable input/output line
13	1V8	O		For test only
14	GND			Ground
15	USB_D+	I/O	Bi-directional	USB data plus with selectable internal 1.5kΩ pull-up resistor
16	USB_D-	I/O	Bi-directional	USB data minus
17	RESET_B	I	CMOS input with 10kOhm internal pull-up	Reset if low. Input debounced so must be low for >5ms to cause a reset
18	RESET	I	Input with internal 10kOhm pull-down	Reset if high.
19	GND			Ground
20	UART_RTS_OUT	O	CMOS output, tri-state, with weak internal pull-up	UART request to send active low
21	UART_CTS_IN	I	CMOS input with weak internal pull-down	UART clear to send active low
22	UART_RX_IN	I	CMOS input with weak internal pull-down	UART data input
23	UART_TX_OUT	O	CMOS output, tri-state, with weak internal pull-up	UART data output
24	GND			Ground
25	PCM_IN	I	CMOS input, with weak internal pull-down	Synchronous data input
26	PCM_SYNC	I/O	Bi-directional with weak internal pull-down	Synchronous data sync
27	PCM_CLK	I/O	Bi-directional with weak internal pull-down	Synchronous data clock
28	PCM_OUT	O	CMOS output, tri-state, with weak internal pull-down	Synchronous data output
29	GND			Ground
30	GND			Ground
31	PIO6	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line or optional WLAN_Active/Ch_Data input for co-existence signaling
32	PIO7	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line
33	PIO4	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line or optional BT_Priority/Ch_Clk output for co-existence signaling
34	PIO5	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line or optional BT_Active output for co-existence signaling
35	SPI_CSB	I	CMOS input with weak internal pull-up	Chip select for Synchronous Serial Interface. Active low.
36	SPI_MOSI	I	CMOS input with weak internal pull-down	Serial Peripheral Interface data input
37	SPI_CLK	I	CMOS input with weak internal pull-down	Serial Peripheral Interface clock
38	SPI_MISO	O	CMOS output, tri-state, with weak internal pull-down	Serial Peripheral Interface data output
39	PIO10	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line
40	PIO3	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line
41	3V3	I		+3.0 to +3.6 VDC Power Input
42	GND			Ground
43	PIO1	I/O	Bi-directional with programmable strength internal pull-up/down	Control output for external PA (If fitted)
44	PIO0	I/O	Bi-directional with programmable strength internal pull-up/down	Control output for external LNA (if fitted)
45	PIO11	I/O	Bi-directional with programmable strength internal pull-up/down	Programmable input/output line
46	GND			Ground
47	GND			Ground

Radio Characterictics

Transmitter

Radio Characteristics	Min	Typ	Max
Maximum RF transmit power, dBm	1	4	-
RF power control range, dB	25	35	-
RF power range control resolution, dB	-	0.5	1.2
20dB bandwidth for modulated carrier, kHz	-	790	1000
2nd Harmonic Content, dBm	-	-90	-
3rd Harmonic Content, dBm	-	-75	-

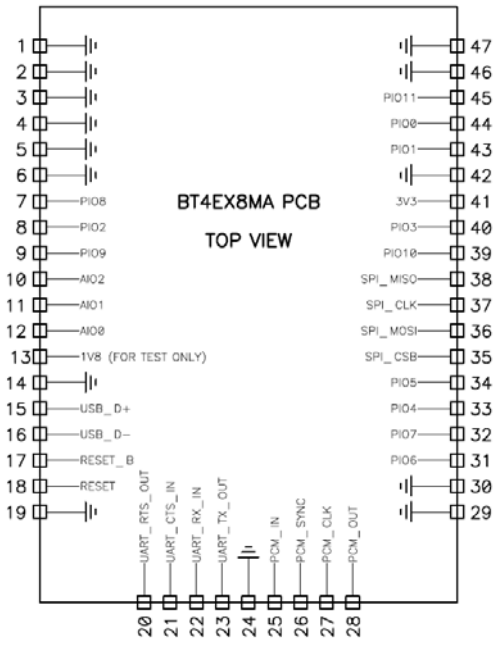
Receiver

Radio Characteristics	Frequency(GHz)	Min	Typ	Max
Sensitivity at 0.1% BER for all packet types	2.402	-	-85.0	-81.0
	2.441	-	-85.0	-81.0
	2.480	-	-87.0	-83.0
Maximum received signal at 0.1% BER, dBm		-20	10	-
C/I co-channel, dB		-	6	11
Adjacent channel selectivity C/I F= F_O+1MHz		-	-5	0
Adjacent channel selectivity C/I F= F_O-1MHz		-	-4	0
Adjacent channel selectivity C/I F= F_O+2MHz		-	-44	-30
Adjacent channel selectivity C/I F= F_O-2MHz		-	-23	-20
Adjacent channel selectivity C/I F= F_O+3MHz		-	-45	-40
Adjacent channel selectivity C/I F= F_O-5MHz		-	-45	-40

Measured at F_O = 2441MHz

Compliance

Parameter	Specification
FCC	47CFR PT 15.247
Industry Canada	RSS-210
R&TTE	ETSI EN 300 328 ETSI EN 301 489-17



Specifications are typical and subject to change without prior notice

ArWest Communications Corp. 900 Rock Avenue, San Jose, CA 95131
Tel+1 408 770 1790 Fax: +1 408 770-1799 Email: sales@arwestcom.com