

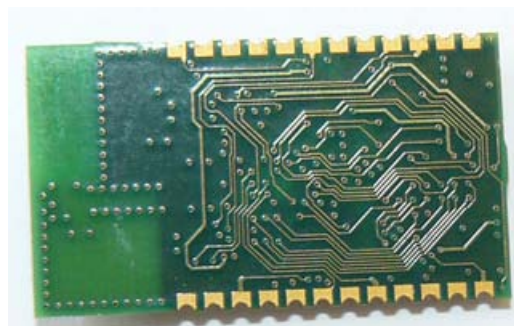
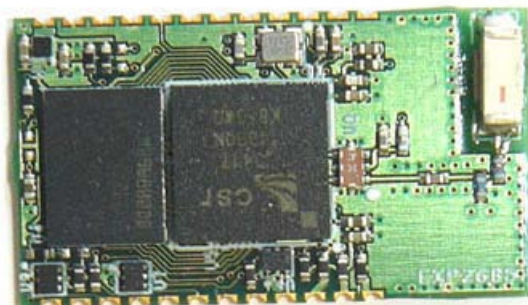


LM781 Specification Sheet

Bluetooth Module - LM781

Features

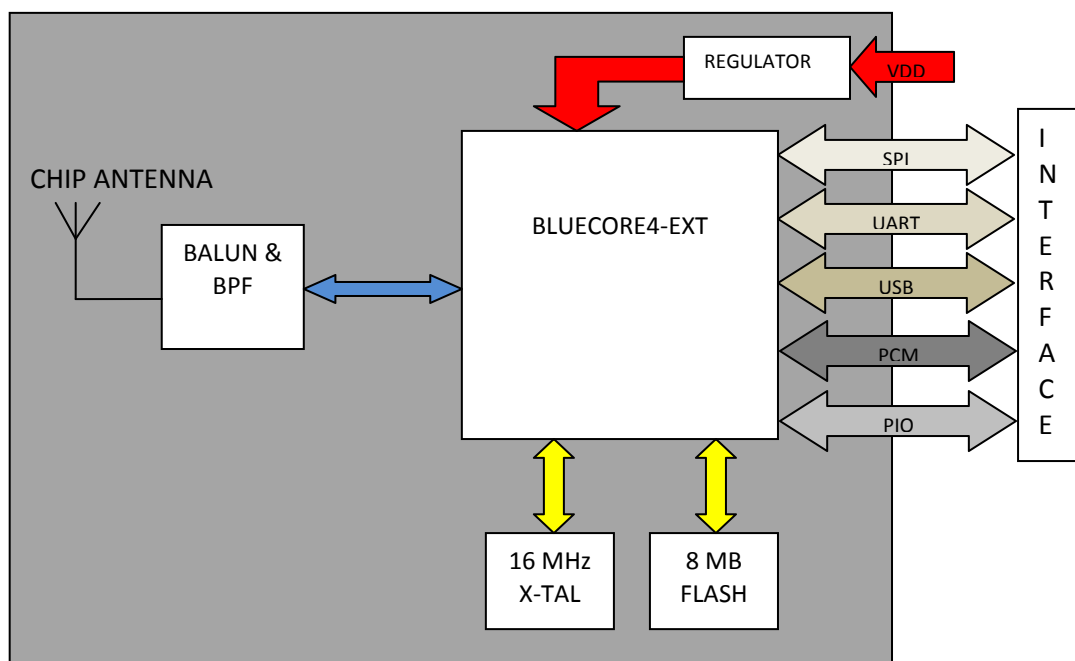
- Bluetooth v2.1 + EDR
- Class 2 radio with integrated chip antenna - 25 m Range in open space
- Secure Simple Pairing Support
- Low power consumption
- 2.2 V -3.6 V operation
- Full Bluetooth Data rates upto 3Mbps supported
- Interface: UART
- Multipoint support
- SPP firmware available by default, HID firmware also offered
- AT Command set used for module configuration
- 802.11 Co-Existence
- Lead free - RoHS compliant
- Small Size : 15.20 mm × 26.92mm × 2.0 mm



Application Areas

- Serial Communications
- Medical devices
- Domestic and Industrial applications
- Embedded devices
- Remote Monitoring & control
- Personal Digital Assistant (PDA)
- GPS, POS, Bar Code Reader

Block Diagram





Electrical Characteristics

Recommended Operating Conditions			
Parameter	Min	Max	Unit
Storage Temperature	-10	+70	C
Supply voltage (VDD)	+2.2	+3.6	V
UART pins: RX, TX, RTS and CTS	0.	+5.5	V
All other pins	VSS-0.4	+4.0	V

Absolute Maximum Ratings			
Parameter	Min	Max	Unit
Storage Temperature*	-40	+150	C
Supply voltage* (VDD)	-0.3	+7.5	V
UART pins: RX, TX, RTS and CTS	-0.5	+7.0	V
All other pins	VSS-0.4	+4.0	V

* Estimated values. To be Confirmed

General Electrical Specification				
Parameter	Description	Min	Max	Unit
Input low voltage	RESET, PIO, PCM	-0.3	0.8	V
Input low voltage	UART		0.3 x VDD	V
Input High voltage	RESET, PIO, PCM	0.7 x VDD	VDD + 0.3	V
Input High voltage	UART	0.7 x VDD		V

Power Consumption Figures

Input Voltage: 3.3V**

UART Data Rate: 19200 bps

Firmware: LMSPPv6.13

Current Consumption		
Operation Mode	Average	Unit
Slave mode, Unconnected Idle state	19	mA
Master mode, Unconnected Idle state	5.3***	mA
Connected state , No Data Transfer (master and slave mode)	19	mA
Unidirectional Data Traffic	27	mA
Bidirectional Data Traffic	29	mA
Low Power Sleep Mode	0.9	mA

** : Increasing the Power Supply voltage to 5V has negligible effect on power consumption figure

*** : When switching the role from Master to Slave, the current goes up to 37mA and then falls to 5.3 mA after about 15 seconds



Pin Assignments

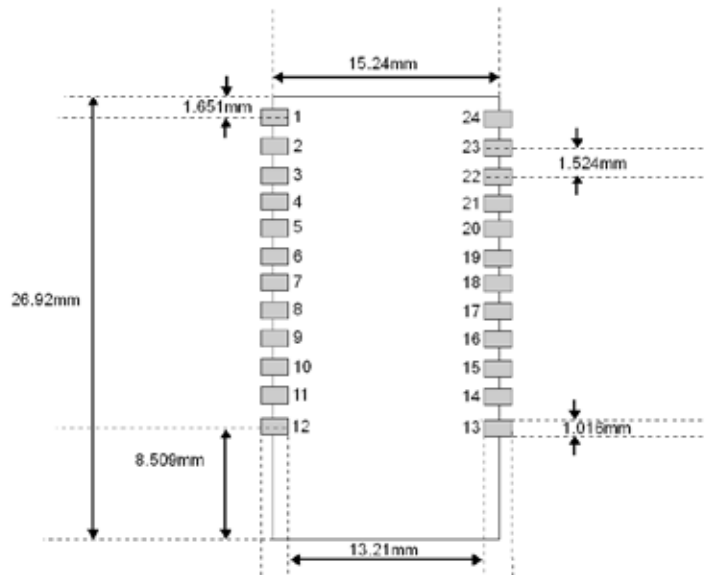
Pin Number	Name	Type	Description
1	SPI_CLK	I	SPI clock input
2	PIO[0]	I/O	Programmable I/O terminal
3	RESET	I	Active low reset
4	PCM_IN	I	Synchronous data input
5	PCM_OUT	O	Synchronous data output
6	UART_TX	O	UART data output
7	PCM_CLK	I/O	Synchronous data clock
8	UART_RX	I	UART data Input
9	UART_CTS	I	Clear to send (active low)
10	UART_RTS	O	Request to send (active low)
11	USB_DN	I/O	USB data minus
12	USB_DP	I/O	USB data plus
13	PCM_SYNC	I/O	Synchronous data sync
14	PIO[7]	I/O	Programmable I/O terminal
15	PIO[6]	I/O	Programmable I/O terminal
16	SPI_MISO	O	SPI data output
17	SPI_MOSI	I	SPI Data input
18	PIO[1]	I/O	Programmable I/O terminal
19	SPI_CSB	I	Chip select for SPI interface
20	PIO[2]	I/O	Programmable I/O terminal
21	PIO[8]	I/O	Programmable I/O terminal
22	PIO[3]	I/O	Programmable I/O terminal
23	VSS		Ground
24	VDD		POWER



Dimensions



Side View



Module dimensions and suggested landing pattern