User manual for Bluetooth module (Model: MY-DJAP-BD)

Features description

- Use Bluetooth 2.1 + EDR specifications based on CLASS 2 power level
- Support L2CAP/A2DP (AVCTP / AVDTP / AVRCP to receive stereo audio signal and control the Prev/Next operation of the audio transmitter by agreement;
- Support Simple Pairing, without the pairing code, support automatic back even function

Note:

- SBC decode for Bluetooth audio streaming
- Easy to build using simple SMD
- Support Piconet

Note

a. That module is limited to OEM installation ONLY

b. That module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).

c. That separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations.

d. The OEM integrator is responsible for ensuring that the end-user has no manual instructions to remove or install module.

e. The module is limited to installation in mobile or fixed applications

Technical Specifications

General Specification

Number	Items	Description
1	Bluetooth Standard	Bluetooth v2.1+EDR
2	Chipset	CW6639E
3	Dimension	16.9mm x 14.2mm x 2mm
4	Voltage	3.3V
5	Temperature	-20～+70 ℃
6	Storage Temperature	-40～+85 ℃
7	Frequency Range	2402～2480MHz
8	Maximum RF Transmit Power	6dBm
9	Receive Sensitivity	-80dBm
10	Bluetooth® Profile Supported	A2DP,AVRCP,HFP,HSP,APTX

Power Consumption

BMLE45	Item	Min	Typ	Max	Unit	Note
State	Working voltage		3.3		V	
	Working current		12		mA	Call and music
	Standby current		86		uA	
Power supply：3.3V						

Operational Mode	*Minimum*	*Typical*	*Maximum*
Page scan, time internal 1.28s	-	1mA	-
Inquiry	-	55mA	-
Page scan and Inquiry	-	1.6mA	-
ACL no traffic	-	26mA	-
ACL with file transfer	-	47mA	-
SCO HV3	-	52mA	-
Sleep	-	80uA	-

Stereo Codec: Analogue to Digital Converter

Analogue to Digital Converter						
Parameter	**Conditions**		**Min**	**Typ**	**Max**	**Note**
Resolution	-		-	-	16	Bits
Input Sample Rate,F_{SAMPLE}	-		8	-	48	kHz
SNR	f_{in}=1kHz B/W=20Hz-Fsample/2 (20kHz max) A-Weighted THD+N<0.1% 1.6V_{pk-pk} input	**F_{SAMPLE}**				
		8kHz	-	93.5	-	dB
		16kHz		92.5		dB
		32kHz		91.4		dB
		44.1kHz		90.4		dB
		48kHz		89.6		dB
THD+N	f_{in}=1kHz B/W=20Hz- Fsample/2 (20kHz max) 1.6V_{pk-pk} input	**F_{SAMPLE}**				
		8kHz	-	0.0041	-	%
		48kHz	-	0.0072	-	%
Digital Gain	Digital Gain Resolution=1/32dB		-24	-	21.5	dB
Analogue Gain	Pre-amplifier setting = 0dB, 9dB, 21dB or30dB Analogue setting = -3dB to 12dB in 3dB steps		-3	-	42	dB
Stereo separation (crosstalk)			-	-88.5	-	dB

Stereo Codec: Digital to Analogue Converter

Analogue to Digital Converter						
Parameter	**Conditions**		**Min**	**Typ**	**Max**	**Note**
Resolution	-		-	-	16	Bits
Output Sample Rate,F_{SAMPLE}	-		8	-	96	kHz
SNR	f_{in}=1kHz B/W=20Hz-20kHz A-Weighted THD+N<0.1% 0dBFS input	**F_{SAMPLE}** **Load**				
		48kHz 100kΩ	-	95.6	-	dB
		48kHz 32Ω	-	95.8	-	dB
		48kHz 16Ω	-	95.6	-	dB

THD+N	f_{in}=1kHz	**F_{SAMPLE}**	**Load**				
	B/W=20Hz-20kHz	8kHz	100kΩ	-	0.0025	-	%
	0dBFS input	8kHz	32Ω	-	0.0056	-	%
		8kHz	16Ω	-	0.0108		%
		48kHz	100kΩ	-	0.0027		%
		48kHz	32Ω	-	0.0067		%
		48kHz	16Ω	-	0.0122		%
Digital Gain	Digital Gain Resolution=1/32dB			-24	-	21.5	dB
Analogue Gain	Analogue Gain Resolution = 3dB			-21	-	0	dB
Stereo separation (crosstalk)				-	-87.5	-	dB

Auxiliary ADC

Auxiliary ADC		Min	Typ	Max	Unit
Resolution		-	-	10	Bits
Input voltage range[(a)]		0	-	VDD_AUX	V
Accuracy	INL	-1	-	1	LSB
(Guaranteed monotonic)	DNL	0	-	1	LSB
Offset		-1	-	1	LSB
Gain error		-0.8	-	0.8	%
Input bandwidth		-	100		kHz
Conversion time		1.38	1.69	2.75	µs
Sample rate[(b)]		-	-	700	Samples/s

(a)LSB size = VDD_AUX/1023

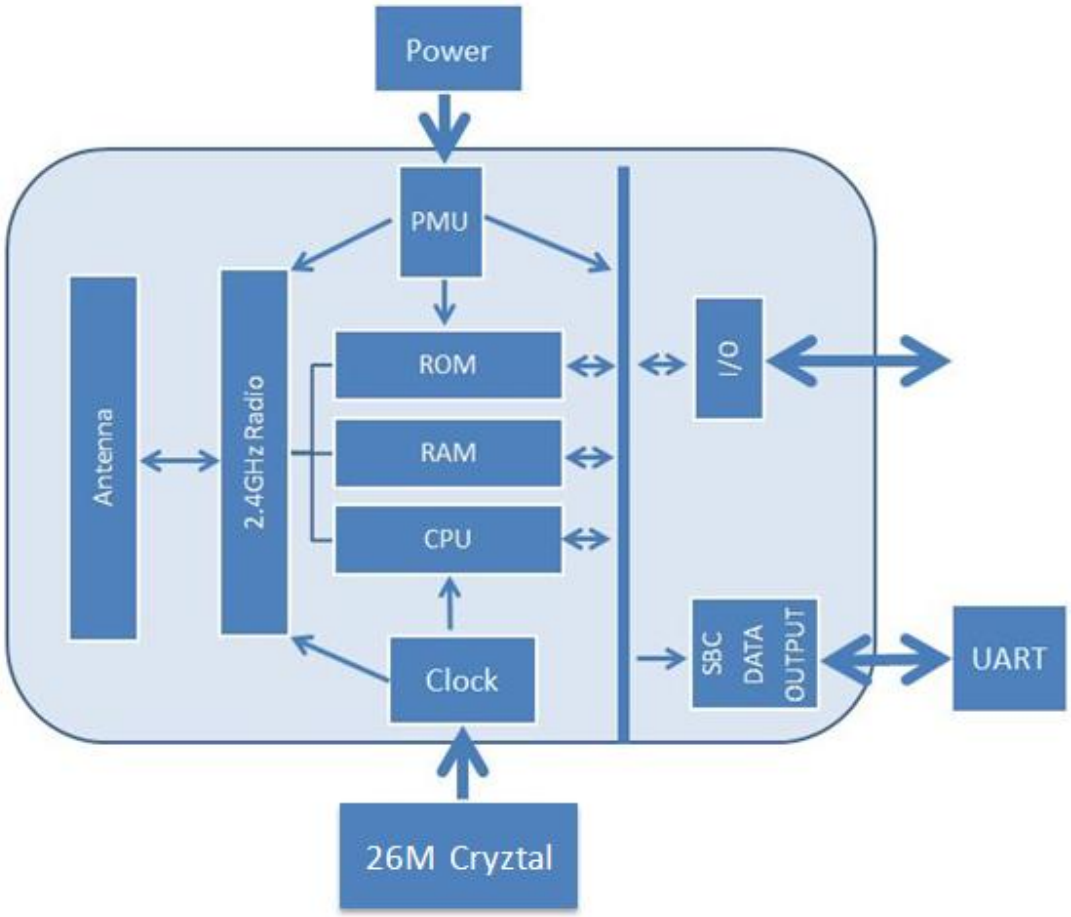
(b)The auxiliary ADC is accessed through a VM function. The sample rate given is achieved as part of this function.

Auxiliary DAC

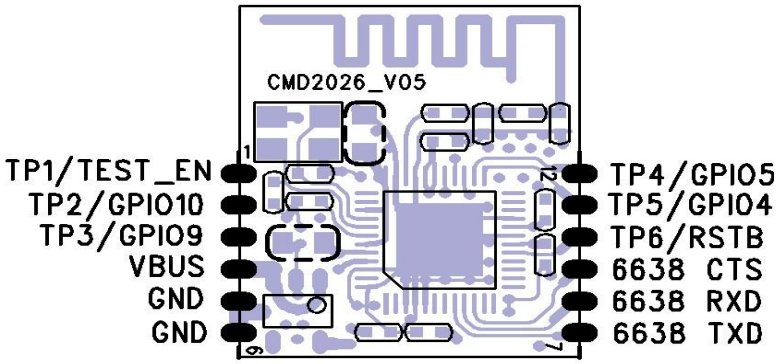
Auxiliary DAC	Min	Typ	Max	Unit
Resolution	-	-	10	Bits
Supply voltage, VDD_AUX	1.30	1.35	1.40	V
Output voltage range	0	-	VDD_AUX	V
Full-scale output voltage	1.30	1.35	1.40	
LSB size	0	1.32 -	2.64	mV
Offset	-1.32	0	1.32	mV
Integral non-linearity	-1	0	1	LSB
Settling time [(a)]	-	-	250	ns

(a) The settling time does not i nclude any capacitive load

Block Diagram



Mechanical Dimensions and Electrical feature



Pin number	Name	Electrical specification	State
1	TP1	Digital I/O	Test PIN
2	TP2	Digital I/O	Test PIN
3	TP3	Digital I/O	Test PIN
4	VIN	Power	Power Input
5	GND	Power	Digital Ground
6	GND	Power	Digital Ground
7	TXD	Digital I/O	CMD2026 CW6638 UART Transfer
8	RXD	Digital I/O	CMD2026 CW6638 UART Receiver
9	CTS	Digital I/O	APB8202 CW6638 UART Flow Control
10	TP6	Digital I/O	Test PIN
11	TP5	Digital I/O	Test PIN
12	TP4	Digital I/O	Test PIN

Related recommended

● Module output audio is a differential signal

● If you want to use the MIC function, in order to achieve the best sound effects, please don't take MICAnd SPK is placed in the same plane, preferably vertically placed

● Full metal shell will greatly shorten the Bluetooth transmission distance

● Bluetooth antenna below PCB plate not copper

Disclaimer

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OEM Labeling Requirements

USERS MANUAL OF THE END PRODUCT:

In the user's manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the user's manual:

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party Responsible for compliance could void the user’s authority to operate this equipment.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX
FCC ID: 2AATW-20140913AP ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled Environment. This equipment should be installed and operated with minimum distance 20cm. Between the radiator & your body.

Attention

The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module. Appropriate measurements (e.g. 15 B compliance) and if applicable additional equipment authorizations (e.g. Verification , Doc) of the host device to be addressed by the integrator/manufacturer.

This RF Module does not have an own shielding, so that a Limited Modular Approval (LMA) was granted: This RF module is strictly limited to the integration by the Grantee himself or the dedicated OEM integrators under the control of the Grantee. and This LMA with a Integral antenna, antenna gain is 0.0dBi.

Proper measurements of the host device including this RF module (radiated spurious emissions and bandage) are required to assure compliance with the FCC regulations.

Any other integrator must contact the Grantee to determine necessary compliance measurements and/or additional equipment authorizations (e.g. Class II Permissive Change or New Equipment Authorization) for his configuration. This RF Module must not be sold to the general public.

IMPORTANT NOTE: In the event that these conditions cannot be met (for example: certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.