User manual WSBTM520A00

1. Introduction

This product is Bluetooth 4.0 products, including embedded UART interface optimized for Mac and compatible radio / low-power applications

2. Hardware Architecture:

2.1 Main Chipset Information

Item	Vendor	Part Number
Bluetooth 4.0 mac/baseband/radio	CSR	CSR8811A12

3. Operational Description

It is mounted in the refrigerator communication controller for using a wireless device user
The Bluetooth devices that act.
Channel based on the 802.15.1 / 1a of the Bluetooth standard IEEE 79 channels and frequency
Use the 2402MHz ~ 2480MHz band and channel interval is 1 MHz.

- Time base of the RF frequency

ZERO IF intermediate frequency using the method and the reference frequency is 26MHz crystal without Use the Clock.

- Synthesizer

Transceiver size is relatively fresh inside the internal voltage controlled oscillator (VCO) and the PLL system To respond to a wide adjustment range.

- Transmission

Baseband processing FHSS (frequency hopping spread spectrum run) and (GFSK / DQPSK / 8DPSK) modulation,
Data transfer speed is 1Mbps, 2Mbps (EDR), it will have a 3Mbps (EDR).
It handles the digital data signal to GFSK, 1MHz Data Rate
By the DAC in the BBP IC TX IQ signal is input through the modulation process and a TX carrier frequency
The amplifier stage shelter will be sent.

- Reception

This transceiver IC is isolated to prevent unwanted noisy radiation by internal amplifier noise LOW month
And the RF signal is through the intermediate frequency conversion and demodulation, and a RX IQ signal via a low-pass filter
The input to baseband Processing.

- Product pwr Spec.

Symbol	Parameter	Min	Typ.	Max	Unit
VDD	Power supply	3.0	3.3	3.6	V

- Product Spec.

Parameter		Min	Typ.	Max	Unit
RF Characteristics					
RF Frequency Range		2.402	-	2.480	GHz
Output power **[TRM/CA/01/C] class1**		0	8	20	dBm
TX Spurious Emission 30.0MHz to 1.0GHz 1.0GHz to 12.5GHz 1.8GHz to 1.9GHz 5.15GHz to 5.3GHz		-	-	-35	dBm
TX Frequency Tolerance		-75	-	75	KHz
Carrier Frequency Drift		-20	-	20	KHz
TX Output Spectrum_20dB bandwidth		-1	-	1	MHz
Modulation Characteristics	DELTA F1	140	-	175	KHz
	DELTA F2	115	-	-	KHz
	DELTA F2/ DELTA F1	0.8	-	3	-
Receiver sensitivity BER at -70dBm		-	-	0.1	%
Maximum Input Level BER at -20dBm		-	-	0.1	%
TX output Spectrum Adjacent Channel Power	IM-NI=2	-	-	-20	dB
	IM-NI≥3	-	-	-40	
Rx Adjacent Channel Rejection at 3MHz GFSK, 0.1%BER Pi/4-DQPSK, 0.1%BER 8-DPSK, 0.1%BER		-	-	-40 -40 -33	dB
Co Channel Rejection GFSK, 0.1%BER Pi/4-DQPSK, 0.1%BER 8-DPSK, 0.1%BER		-	-	11 13 21	dB
RX Spurious Emission 30.0MHz to 1.0GHz 1.0GHz to 12.5GHz 1.8GHz to 1.9GHz 5.15GHz to 5.3GHz		-	-	-54	dBm

4. Detailed specification

- Transmission frequency: 2402 ~ 2480 MHz
- Number of channels: 79ch
- oscillating manner: VCO
- Operating Voltage: DC 3.3 V
- Size: 20 mm X 35 mm X 3.5 mm
- Temperature, humidity range: -20 ℃ ~ + 70 ℃
- Communication system: repeated Shin way
- Modulation: GFSK, pi / 4 DQPSK, 8DPSK

Instruction to OEM

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

This application and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter. A minimum separation distance of 20cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

Host labeling requirement: "Contains transmitter module

FCC ID: A3LWSBTM520A00
IC ID: 649E-WSBTM520A00"

This device complies with part 15 of the 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.