BWR-YSP88459-SMA Manual

1. Overview

#. BWR-YSP88459-SMA is a Class2 Bluetooth Module for automotive audio/video system

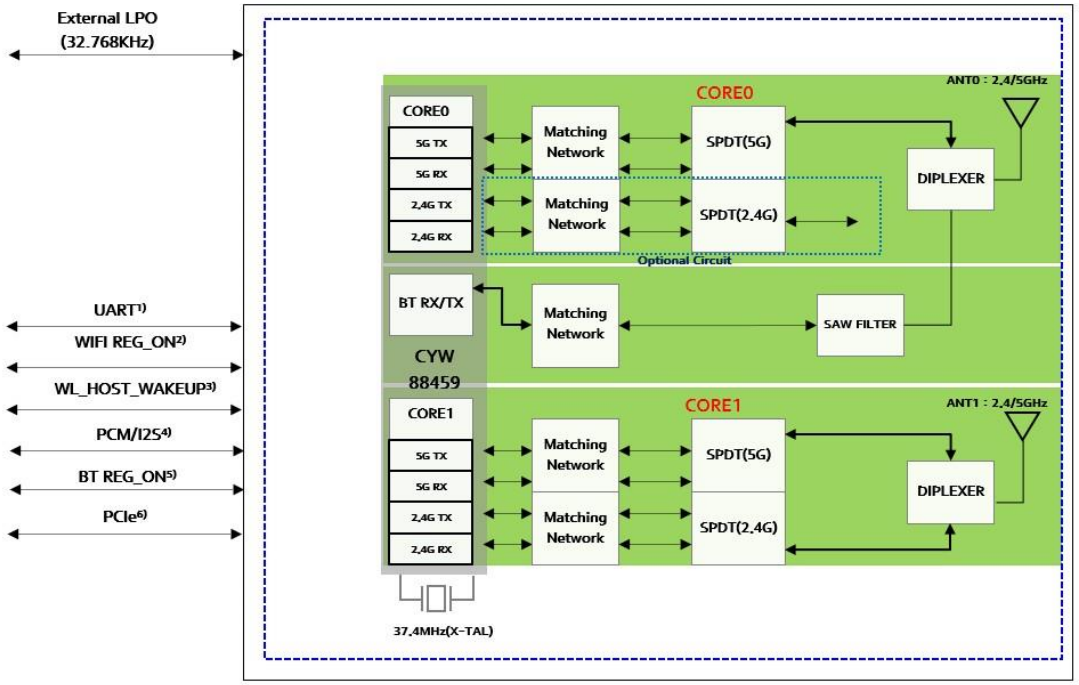
#. Module type : 62 pin LGA type

#. RoHS compliant

#. This module has deployed part which are AEC-Q100 qualified

#. BWR-YSP88459-SMA is limited Module. The module doesn't have its own power supply regulation.

2. Configration



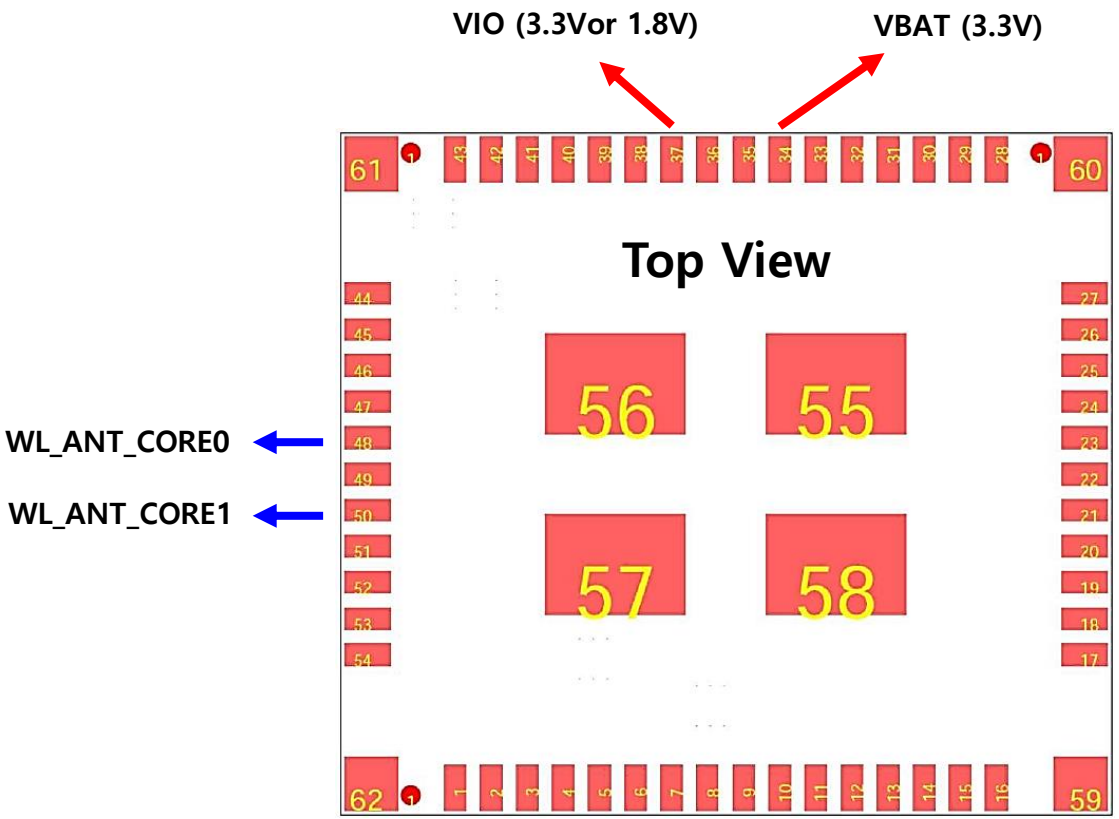
1) Host Interface for Bluetooth: 4 Pins (BT_UART_TXD, BT_UART_RXD, BT_UART_CTS, BT_UART_RTS)
2) WiFi On/Off and Reset: 1Pins (WL_REG_ON for Wi-Fi)
3) WiFi Host wake up
4) Audio Interface for Bluetooth: 4 Pins (BT_PCM_CLK, BT_PCM_SYNC, BT_PCM_IN, BT_PCM_OUT)
5) Bluetooth On/Off and Reset: 1Pins (BT_REG_ON for Bluetooth)
6) Host Interface for WiFi: 9 Pin (PCIE_REFCLK_P, PCIE_REFCLK_N, PCIE_TDN, PCIE_TDP, PCIE_RDN, PCIE_RDP, PCIE_CLKREQ_L, PCIE_PERST, PCIE_PME_L)

3. Pin map

1) Operating Temperature : -40 ~ +85℃

2) Operating Voltage : VBAT 3.3V

VIO 3.3V or 1.8V



1	BT_UART_RXD	22	SDIO_DATA2	43	LPO
2	BT_UART_TXD	23	SDIO_CLK	44	WL_HOST_WAKE
3	BT_PCM_SYNC	24	SDIO_PAD	45	BT_HOST_WAKE
4	BT_PCM_CLK	25	SDIO_DATA1	46	GND
5	BT_PCM_IN	26	SDIO_DATA0	47	GND
6	BT_PCM_OUT	27	SDIO_CMD	48	ANT_CORE0
7	GND	28	GND	49	GND
8	PCIE_PERST_L	29	CO_EX_OUT1	50	ANT_CORE1
9	PCIE_PME_L	30	CO_EX_OUT0	51	GND
10	PCIE_CLKREQ_N	31	CO_EX_IN	52	GND
11	PCIE_CLK_N	32	BT_RST_N	53	BT_UART_CTS_N
12	PCIE_CLK_P	33	GND	54	BT_UART_RTS_N
13	PCIE_TD_N	34	VBAT	55	GND
14	PCIE_TD_P	35	GND	56	GND
15	PCIE_RD_N	36	VER_VOLTAGE	57	GND
16	PCIE_RD_P	37	VIO	58	GND
17	PCIE_EN	38	GND	59	GND
18	WL_DEV_WAKE	39	NC	60	GND
19	BT_DEV_WAKE	40	GND	61	GND
20	SDIO_DIS	41	WL_REG_ON	62	GND
21	SDIO_DATA3	42	BT_REG_ON		

4. Notice

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.

Any changes or modifications (including the antennas) to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF Radiation exposure limits set forth for an uncontrolled environment.
This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

5. Module Integration Guide

1. Applicable FCC Rules
- CFR 47 Part 15.247

2. Operational Condition
The module is limited to OEM installation ONLY. The OEM integrator is responsible for ensuring that the end-user has no manual instruction to removeor install module.

3. Limited Module Procedure
BWR-YSP88459-SMA is limited Module. The module doesn't have its own power supply regulation. Therefore, the host product manufacturer must design the host product. so that a constant voltage of 3.3V is applied to the module.

4. Trace antenna desings : N/A

5. RF Exposure consideration (CFR 47 Part 1, 1.1307(b), 1.1310)
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum 20 cm between the radiator and human body.

6. Antenna
This modular has PCB pattern antenna. Any changes of antenna designs might require additional assessment. The Host antenna type shall be same type and antenna gain shall be less or equal to below information.

Item	Contents	
Antenna Type	PCB Pattern Antenna	
Antenna peak gain	Ant 1	2 400 MHz ~ 2 483.5 MHz: 2.28 dBi
		5 150 MHz ~ 5 250 MHz: 1.68 dBi
		5 250 MHz ~ 5 350 MHz: 1.68 dBi
		5 470 MHz ~ 5 725 MHz: 2.38 dBi
		5 725 MHz ~ 5 850 MHz: 3.04 dBi
	Ant 2	2 400 MHz ~ 2 483.5 MHz: 1.84 dBi
		5 150 MHz ~ 5 250 MHz: 1.90 dBi
		5 250 MHz ~ 5 350 MHz: 2.92 dBi
		5 470 MHz ~ 5 725 MHz: 3.55 dBi
		5 725 MHz ~ 5 850 MHz: 3.32 dBi

7. Label and compliance information
The end user manual shall include all required regulatory information/warningas shown in this manual. If the FCC identification number is not visible when the module isinstalled inside another device, then the outside of the device into which the module isinstalled must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains FCC ID : 2ADQJ-YSP88459SM” any similar wording that expresses the same meaning may be used.

8. Information on test modes and additional testing requirements
This modular was tested in standalone configuration. Integration of this modular into ahost equipment would require additional testing.

9. Additional testing, Part 15 Subpart B disclaimer
The grantee should include a statement that the modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15.
Subpart B compliance testing with the modular transmitter installed.