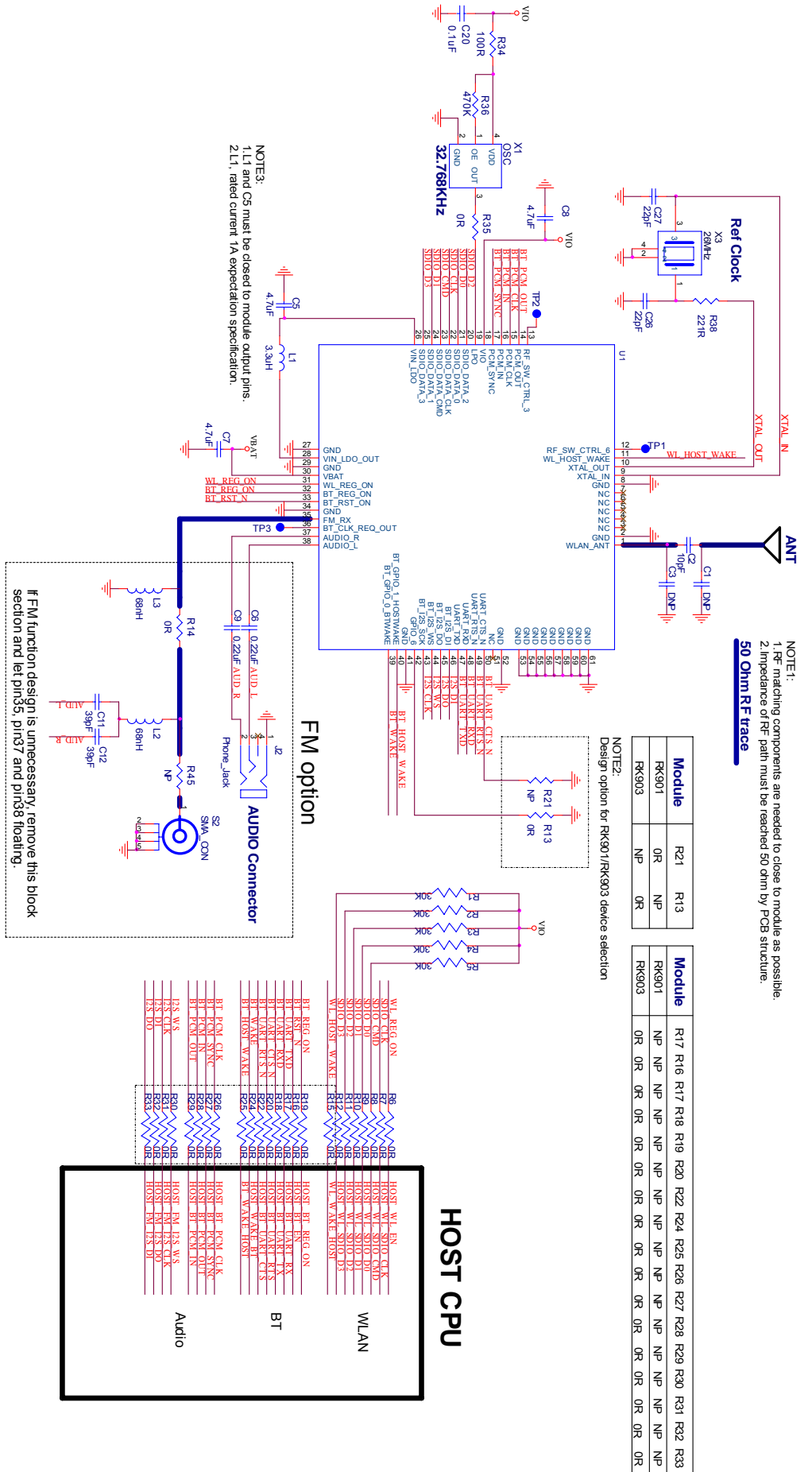


RK901 / RK903
pin to pin application note

Revision History

Date	Revision Content	Revised By	Version

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Note: Peripheral components highlight

Item	Qty	Reference	Value	Description	Vendor
1	1	C2	10pF	Capacitor 10pF 50V 0.25P(C) NPO 0402 T=0.5mm	Murata
2	3	C5,C7,C8	4.7uF	Capacitor 4.7uF 10V 10%(K) X5R 0805 T=1.25mm	Murata
3	1	C20	0.1uF	Capacitor 0.1uF 16V 10%(K) X5R 0402 T=0.5mm	Murata
4	2	C26,C27	27pF	Capacitor 27pF 50V 5%(J) NPO 0402 T=0.5mm	Murata
5	1	L1	3.3uH	Power Inductor (HF) 3.3uH 2.5*2.0mm Rated current 1.0A	Murata
6	5	R1,R2,R3,R4,R5	30K	Resistor 30K ohm 1/16W 5% 0402	YAGEO
7	1	R34	100R	Resistor 100 ohm 1/16W 5% 0402	YAGEO
8	27	R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R22, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R35	0R	Resistor 0 ohm 1/16W 5% 0402	YAGEO
9	1	R36	470K	Resistor 470K ohm 1/16W 5% 0402	YAGEO
10	1	R38	221R	Resistor 221 ohm 1/16W 5% 0402	YAGEO
11	1	U1	GB9663	SIP Module 9.5x9.5mm 60P WiFi/BT/FM	AMPAK
12	1	X1	32.768KHz	Crystal oscillator 32.768kHz +/-20ppm 1.8V 3.2*2.5mm SMD -20~+70dC	TXC / HOSONIC
13	1	X3	37.4MHz	Crystal (HF) 37.4MHz +/-20ppm 12pF 3.2*2.5mm SMD -20~+70dC	TXC / HOSONIC
14	2	C6, C9	0.22uF	Capacitor 0.22uF 25V 10%(K) X5R 0603 T=0.8mm	Murata
15	2	C11, C12	39pF	Capacitor 39pF 50V 5%(J) NPO 0402 T=0.5mm	Murata
19	2	L2, L3	68nH	Inductor 68nH 0402 5%(J) 100mA T=0.5mm	Murata

Please apply 26MHz for RK901.

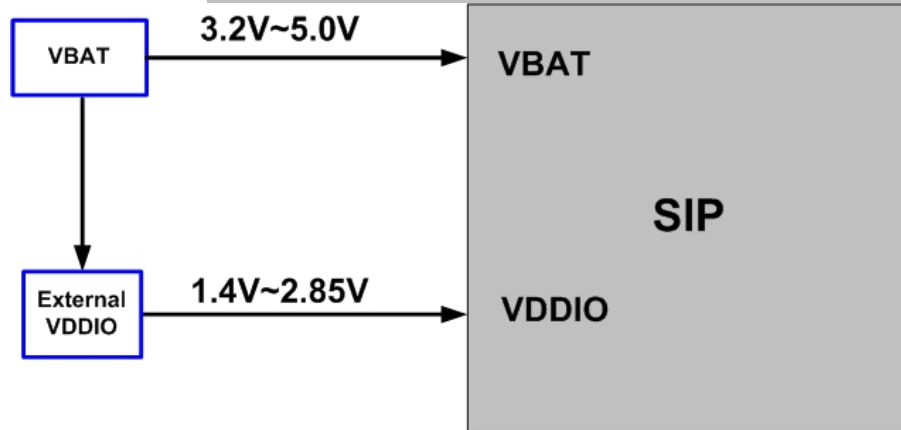
Please apply 26MHz for RK903 if FM is useless.

Peripheral interface highlight

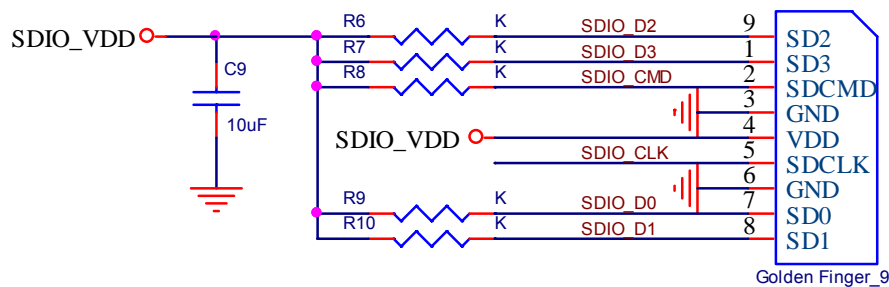


Power Source: A single host power supply can be used (including VBAT ranging from 3.2V to 5.0V) for the Module and external VDDIO ranging from 1.4V to 2.85V supplies for GPIO by host power. Power topology is shown as below figure.

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- ❖ WIFI SDIO: Using external pull up resistors depends on the SDIO supply voltage. For 1.8V, the resistance range is 30 KΩ~82KΩ. For 2.6V, it range from 21 KΩ~41 KΩ on the four data lines and the CMD line as the following circuitry.



- ❖ Bluetooth UART: External patches may be downloaded from the host to the Module through the UART transports and connection interface is shown in above reference design circuitry. Support adjustable baud rates from 9600bps to 4Mbps.
- ❖ GPIO: WL_GPIO_6 and SDIO_D2 are initially used as a WLAN strapping option to change WLAN operating mode. To change the mode, connect an external PU resistor to VDDIO or PD resistor to ground, using 10k Ohm or less.

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WLAN INTERFACE MODE \ GPIO	WL_GPIO_6	SDIO_D2
SDIO	Pull low	--
gSPI	Pull high	Pull low

- ❖ **Bluetooth PCM:** The PCM Interface on the Module can connect to linear PCM Codec devices in master or slave mode as following figure. In master mode, it generates the PCM_CLK and PCM_SYNC signals, and in slave mode, these signals are provided by another master on the PCM interface and are inputs to the Module. It supports up to three SCO or eSCO channels through the PCM interface and each channel can be independently mapped to any of the available slots in a frame.

