AMPAK Technology Inc.

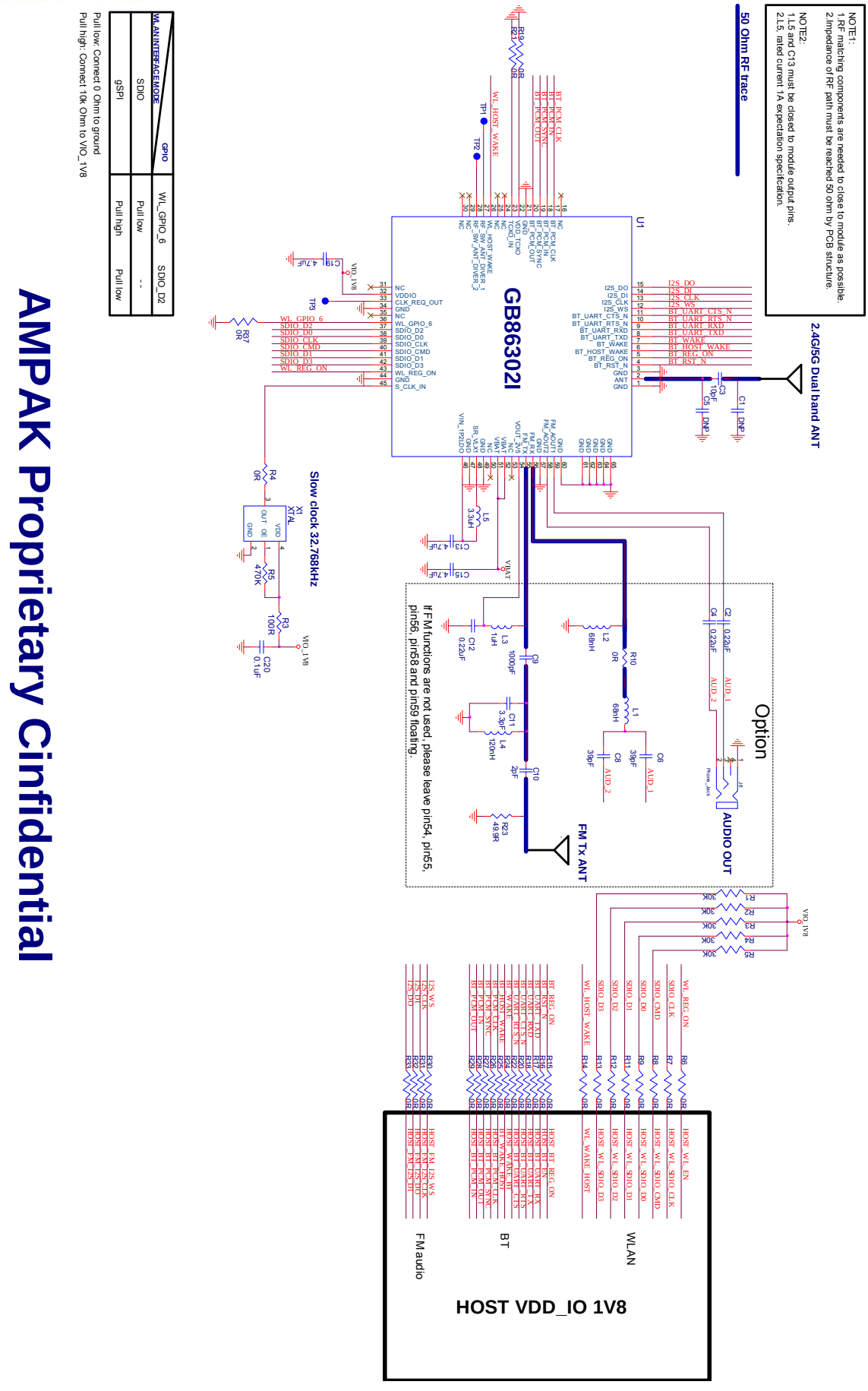
Advanced Module Packaging Solution

正基科技股份有限公司

Revision History

Date	Revision Content	Revised By	Version
2012/01/02	- Initial released	Bart	1.0

GB86302I reference design circuit for Host VDD I/O 1V8



AMPAK Proprietary Cinfidential

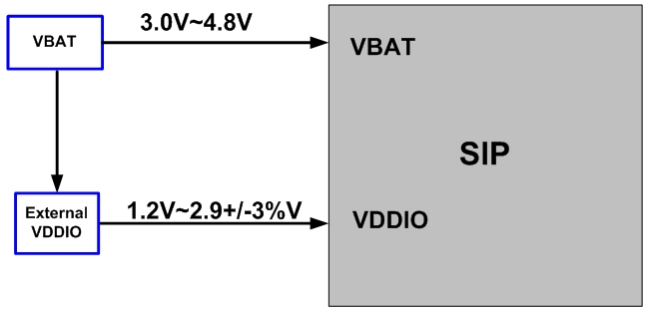
Note: Peripheral components highlight

Item	Qty	Reference	Value	Description	Vendor
1	1	C3	10pF	Capacitor 10pF 50V 0.25P(C) NPO 0402 T=0.5mm	Murata
2	3	C13,C15,C19	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	1	L5	3.3uH	Power Inductor 3.3uH 3.2*2.5mm Rated current 1.0A	Murata
5	5	R1,R2,R3,R4,R5	30K	Resistor 30K ohm 1/16W 5% 0402	YAGEO
6	1	R3	100R	Resistor 100 ohm 1/16W 5%m0402	YAGEO
7	29	R4,R6,R7,R8,R9,R10,R11,R12,R13,R14,R15,R16,R17,R18,R19,R20,R21,R22,R24,R25,R26,R27,R28,R29,R30,R31,R32,R33,R37	0R	Resistor 0 ohm 1/16W 5% 0402	YAGEO
8	1	R5	470K	Resistor 470K ohm 1/16W 5% 0402	YAGEO
9	1	U1	GB86302I	SIP Module 10x10mm 60P WiFi/BT/FM	AMPAK
10	1	X1	32.768KHz	Crystal oscillator 32.768kHz +/-20ppm 1.8V 3.2*2.5mm SMD -30~+85dC	TXC / HOSONIC
11	3	C2,C4,C12	0.22uF	Capacitor 0.22uF 25V 10%(K) X5R 0603 T=0.8mm	Murata
12	2	C6,C8	39pF	Capacitor 39pF 50V 5%(J) NPO 0402 T=0.5mm	Murata
13	1	C9	1000pF	Capacitor 1000pF 16V 10%(K) X5R 0402 T=0.5mm	Murata
14	1	C10	2pF	Capacitor 2pF 50V 0.1P(B) NPO 0402 T=0.5mm	Murata
15	1	C11	3.3pF	Capacitor 3.3pF 50V 0.1P(B) NPO 0402 T=0.5mm	Murata
16	2	L1,L2	68nH	Inductor 68nH 0402 5%(J) 100mA T=0.5mm	Murata
17	1	L3	1uH	Inductor 1uH 0603 10%(K) 25mA T=0.8mm	Murata
18	1	L4	120nH	Inductor 120nH 0402 5%(J) 100mA T=0.5mm	Murata
19	1	R23	49.9R	Resistor 49.9 ohm 1/16W 5% 0402	YAGEO

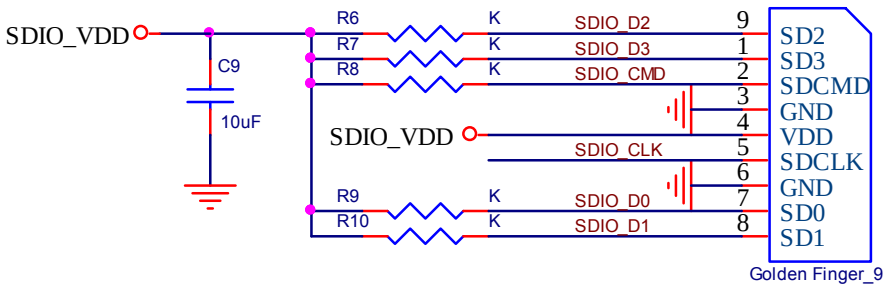
***The item11 to item19 are the material of FM functions.**

Peripheral interface highlight

❖ Power Source: A single host power supply can be used (including VBAT ranging from 3.0V to 4.8V) for GB86302I module and external VDDIO ranging from 1.2V to 2.9+/-3% V supplies for GPIO by host power. Power topology is shown as below figure.



❖ 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, the range is 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 GB86302I 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.

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

- Bluetooth PCM: The PCM Interface on the GB86302I can connect to linear PCM Codec devices in master or slave mode. 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 GB86302I. 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.