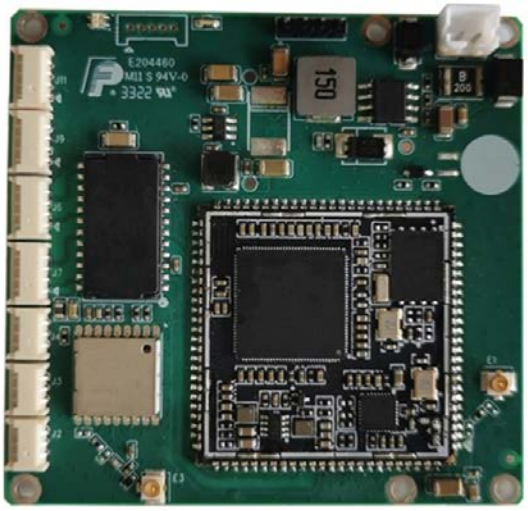
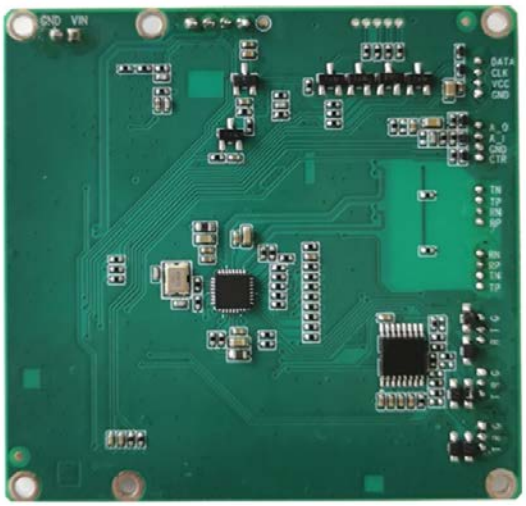
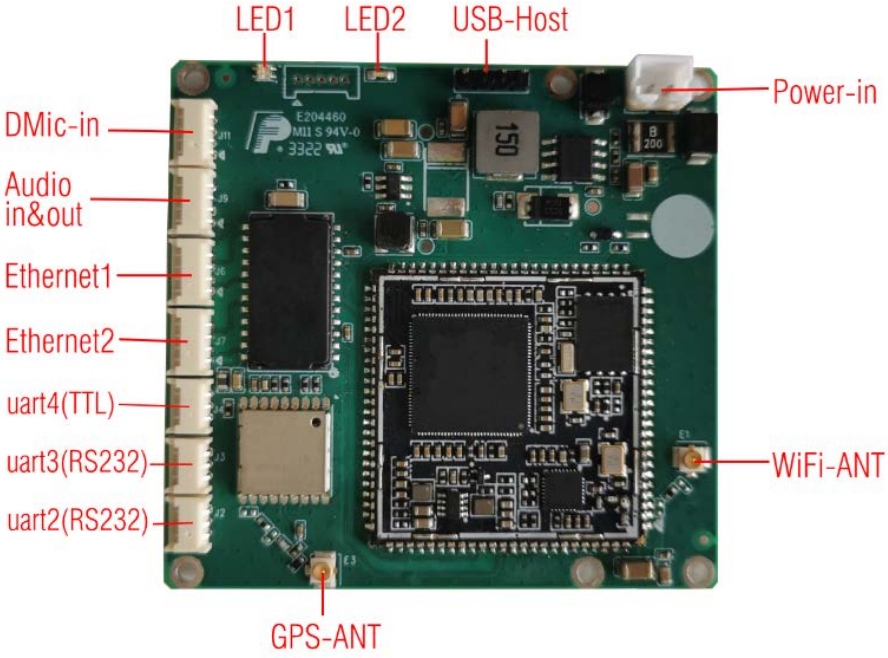
SiB1 WiFi-GPS-Audio-uart Module





-- Low power consumption ARM Cortex-A7 dual core SoC, embedded linux system
-- Can be connected with DLC/DLM transceiver module via Ethernet port
-- Manage the DLC/DLM transceiver via Ethernet Web UI or control uart
-- On board 2.4GHz WiFi
-- On board GPS/BDS
-- Two RS232 uart + 1 TTL control uart
-- Two Ethernet port
-- Analog audio in/out and digital audio in to support two way audio intercom for network system

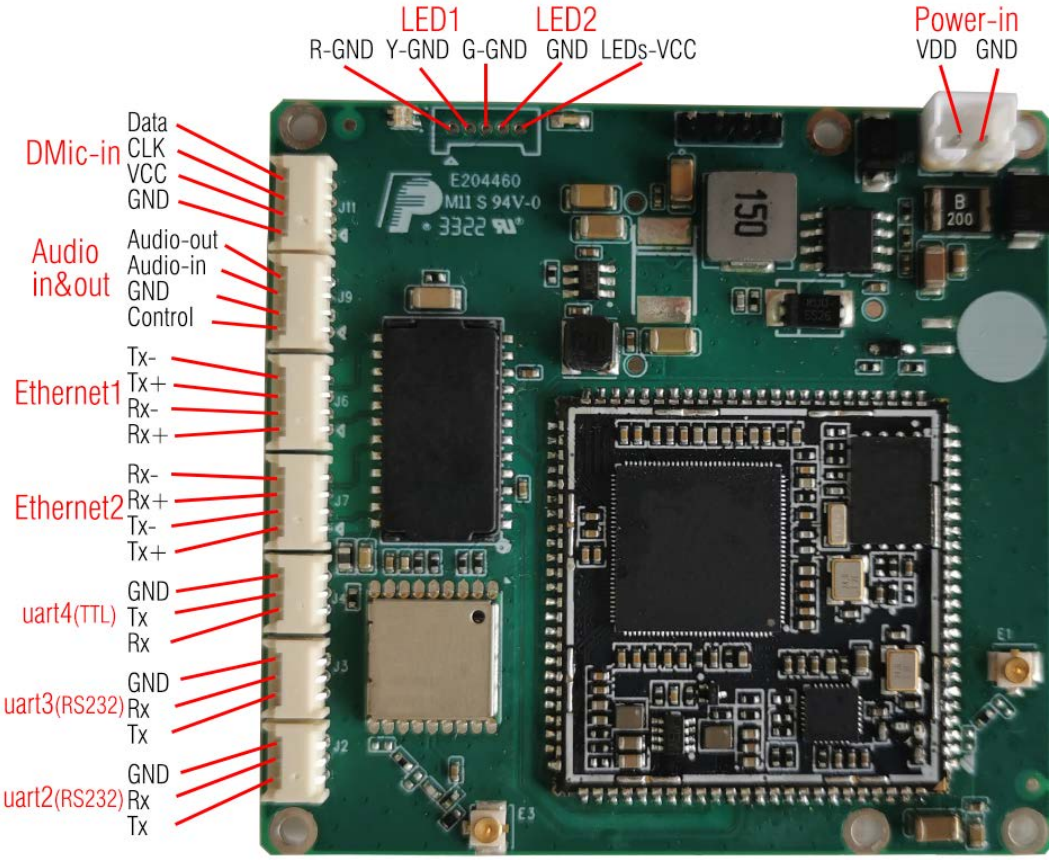
SiB1 is a function expansion module for wireless transceiver module like DLC/DLM. It communicates with DLC/DLM via Ethernet port and provide WiFi/GPS/BDS/Audio intercom/additional uart function for DLC/DLM wireless transceiver. SiB1 can also manage DLC/DLM system via control uart connection. SiB1 provide web UI management system too.



Features:

- Power-in
  2PIN PH2.0mm connector, power supply DC9~30V, power consumption<2.4W.
- WiFi
  2.4GHz WiFi, 802.11 b/g/n, working as WiFi AP as default. One IPEX port for connecting WiFi antenna.
- Ethernet1 and Ethernet2
  Two 4PIN PH1.25mm connectors, Ethernet1 and Ethernet2 is bridged as default, so the IP address of the two Ethernet ports are the same. Ethernet1 and Ethernet2 can be two separated Ethernet port (different IP address then) by change the firmware.
- Uart4(J4)
  TTL uart, 3PIN PH1.25mm connector, working as control uart to connect with DLC/DLM control uart in default firmware.
- UART2(J2) and UART3(J3)
  RS232 uart, two 3PIN PH1.25mm connector, expansion data transmission uart for DLC/DLM wireless transceiver. The baud rate is configurable.
- Audio in&out
  4 PIN PH1.25mm connector, analog audio input and output, MIC in as default and can be modified to line in according to application requirement. Audio out can be connected to microphone directly or send to audio amplifier. SiB1 have on-board audio codec to enable two-way audio communication via Ethernet connection or wireless connection working with DLC/DLM transceiver together. It supports full duplex intercom or Push-to-talk(PTT). When SiB1 works with multiple DLC/DLM wireless points, it can supports multiple points intercom or voice broadcasting.
- DMic in
  Digital Mic input interface, 4 PIN PH1.25mm connector. Digital MiC has strong anti-interference ability to RF signal, the voice quality will be more better than analog input when it works with wireless system.
- GPS/BDS
  On-board GPS/BDS system with IPEX antenna interface. It need to add antenna via IPEX interface. The SiB1 system will send the GPS/BDS positioning information data to a fixed IP device directly via Ethernet connection, customers can setup the destination IP address via web UI.
- USB Host
  4 PIN PH2.0mm connector, reserved for possible special application.
- LED1/LED2
  LED1: red/yellow/green three color LED;
  LED2: Blue LED.
  The board also has five 1.25mm spacing welding holes for these LEDs signal, it enables customer to connect the LEDs signal to their own housing case. The function of LED1/LED2 is software defined. When SiB1 works with DLC/DLM wireless transceiver, we use LED1/LED2 to indicate the wireless linking status.
- Power consumption: <2.4W
- Dimensions: 60*57mm, PCB thickness 1.6mm, maximum height of the reverse side is 2.5mm, maximum height of the obverse side is less than 4mm(without power-in connector).
- Weight: 20.8g
- Working Temp. -20℃ ~ +65℃
- Storage Temp. -40℃ ~ +80℃

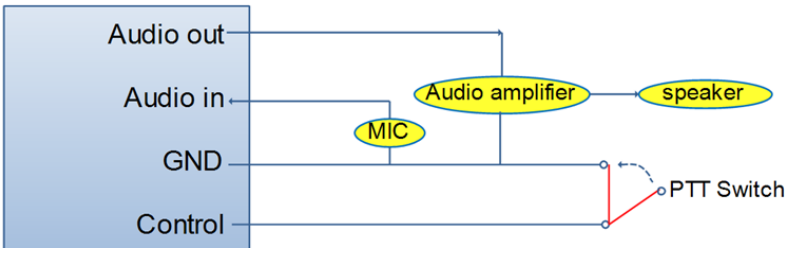
The interface signals of SiB1 board is showed as below.



Analog audio in&out

This port is for analog audio input and output with on-board audio codec supporting. Customers can use this audio port for two-way wireless audio communication application.

PIN	Signal	Description
Audio in	Mic in by default(Specify line in)	The audio will send to the target SiB1 board.
Audio out	Can be connected to microphone directly or send to audio amplifier.	When it received audio data from remote SiB1, the audio will be played out on this PIN.
GND	GND	GND
Control	Software defined	On/off switch control of audio input to enable PTT



- To implement “push to talk”: use a “PTT Switch” key between the “GND” and “control” signal connection, when “GND” and “control” signal is connected, mic in will be valid. When “GND” and “control” signal is disconnected, then mic in is not valid.
- To implement full duplex audio communication, just connect “GND” and “control” signal without switch key.

LED1/LED2 status

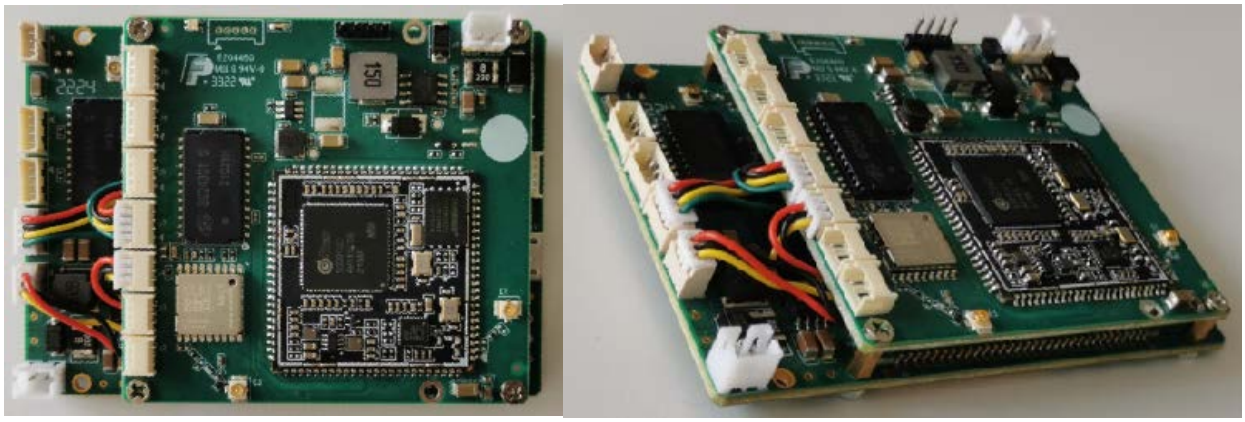
When SiB1 works with DLC/DLM wireless transceiver, we use LED1/LED2 to indicate the wireless linking status.

LED2: blue LED. When the DLC/DLM transceiver works as central node, LED2 will light on all the time. When the DLC/DLM transceiver works as access node/Mesh node, LED2 will blinks all the time.

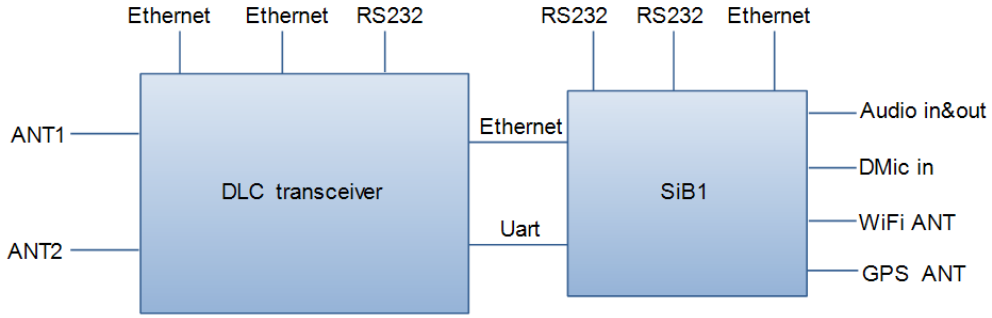
LED1: indicate the wireless linking status as described in below table.

LED1	Status description
Light off	indicate that the node is not linked to the wireless network;
Red light	indicate that the node is linked, but wireless signal is weak;
Yellow light	indicate that the node is linked, wireless signal is middle;
Green light	indicate that the node is linked, wireless signal is strong.

Working with DLC transceiver module



SiB1 board can be assembled with DLC wireless transceiver module with four screw holes, total weight 64.2g. The function dialog of DLC&SiB1:



Working with DLM transceiver module

SiB1 board can be assembled with DLM wireless transceiver module with three screw holes, total weight 49.9g. The function dialog of DLM&SiB1: