Litelink
Radio audio/digi interface
USER MANUAL

Venus Information Technology Co., Ltd

⚠️Caution

Although this product uses certain isolation, your

computer/radio/other terminal may still be damaged.

Please ground the equipment.

⚠️Caution

In order to reduce the development cost and ensure the health of the owner, this product has been using lead-free circuit boards, lead-free solder, rohs-compliant washing liquid and inexpensive connectors since January 2018. This product complies with RoHs standards. If you are located in an EU member state or other countries, please do not hesitate to contact me to produce customized products that meet your relevant standards.

⚠️Caution

Venus Info Tech. is not responsible for equipment damage caused by this product.

⚠️Caution

The use of this product requires a certain degree of electrical operation, as well as the English reading ability of related software. Because this product is very cheap, it does not provide all software

remote assistance.

Caution

This product contains chemicals such as Pb and Sn. Please keep it in a

safe place and keep it out of reach of children. If you have any food,

please contact the local fire department immediately.

NOTICE

This product cannot directly control the frequency of the radio (CIV

of ICOM, CAT of YAESU, etc.).

Part Name	Hazardous Substances					
	铅(Pb)及其化合物 Leadand its compounds	汞(Hg)及其化合物 Mercuryand its compounds	镉(Cd)及其化合物 Cadmium and its compounds	六价铬(Cr6+)化合物 Hexavalent Chromium compounds	多溴联苯（PBB）	多溴二苯醚（PBDE）
PCB	○	○	○	○	○	○
resistance	○	○	○	○	○	○
cap	○	○	○	○	○	○
transformer	×	○	○	○	○	○
Connector	○	○	○	○	○	○
Package	○	○	○	○	○	○

Product introduction

Lite link is a mini version of the radio audio interface. Unlike most interface on the market, the lite link has a PCB size of only 5*5cm. The following is the difference between litelink and other products.
1. The price is very cheap, the price can only buy a USB-COM cable
(If you go to the electronics market and don't know how to do it, you will be pitted)
2. Provides a 4-ring stereo jack for easy connection to hardware
(You can directly use the 4-ring male-to-public connection single-interface computer, as well as mobile phones, Android or other tablet devices)
3. With TTL write frequency interface
(The TTL write frequency interface is provided in the upper right corner of the board, which is convenient for you to write to GP88)

4. With DIY radio interface
(The 4P XH2.54 interface is provided in the lower right corner of the board, which is convenient for you to use for strange radio stations.)

Litelink uses common interface cable

USB uses a TYPE B USB cable.
Audio can choose 4 ring stereo male to male connector to connect the link to a laptop, smart phone, tablet device with only one audio interface, and also provides a common audio interface input , just use 3 ring ordinary stereo The male to male connector can be connected to the hardware.

The output of the radio adopts the PS/2 interface. The PS/2 interface is the most commonly used data channel for the UV radio station and the short-wave radio.

In order to improve the use value of litelink, link also provides a CW interface for daily CW use, as well as a set of TTL write frequency interfaces, a set of DIY radio interfaces.
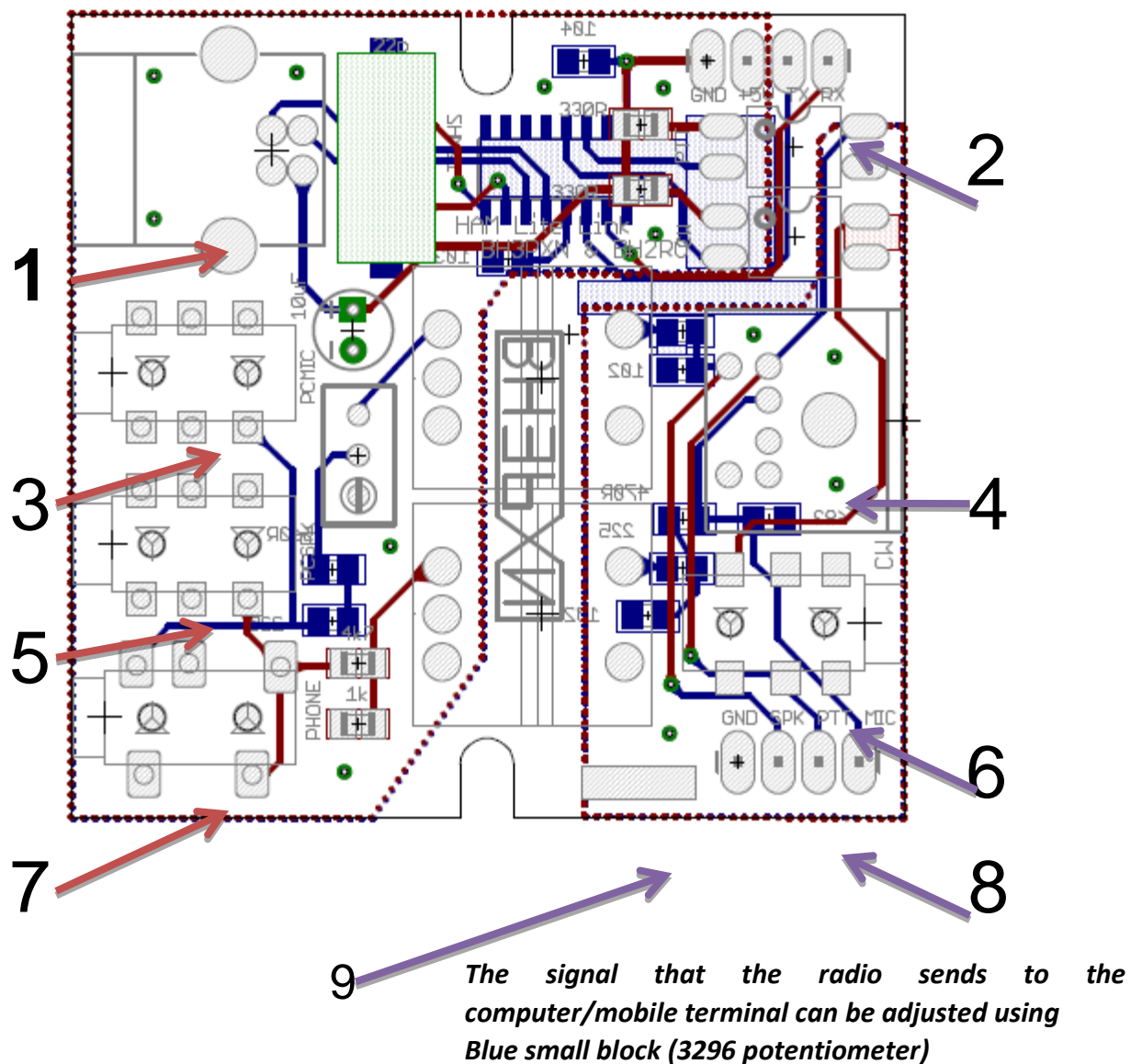
What can I do with lite link?

1. Connect to the U/V radio to run software such as ECHOLINK, APRS.
2. Connect to HF radio to run software such as RTTY/SSTV/FT8/PSK
3. Use TTL interface to write to GP88S and other radios
4. CIV connecting ICOM stations using TTL interface
5. Connected to an HF radio for transmitting CW signals
6. For radio and mobile phones, tablets and other devices connected to run APRS / RTTY / SSTV / FT8/ PSK and other software, and use the OTG cable to connect to the USB serial port (or use VOX voice control)

Where does the computer driver needed for Litelink?

Litelink uses CH340G produced by WCH as the serial port chip. The driver for this chip is recommended to go directly to the WCH.CN official website for download. If you use other channels to download the driver, the computer may not be able to shake hands with litelink.

Litelink PCB

The signal that the radio sends to the computer/mobile terminal can be adjusted using Blue small block (3296 potentiometer)

Wiring instructions

1 Type-B USB is used to connect to a computer, or connect to other mobile terminals via OTG adapter cable

2 XH2.54TTL write frequency (CIV) interface, pin definition from left to right is GND / +5V / TX / RX

3 3-ring stereo audio jack for connecting to the microphone of the

computer

4　PS2 6-pin connector for connecting stations with this data interface

5　3-ring stereo audio jack for connecting to the computer's speaker

6　3-ring 3.5mm jack for connecting the radio's straight key for computer transmission

7　4-ring stereo audio jack for connecting computers and mobile phones with this interface, or other terminals

8　XH2.54 custom radio interface, the pin definition moves from left to right in order of GND/SPK/PTT/MIC

9　Grounding

Serial port control instructions

PTT VIA RTS　　　CW VIA DTR

Lite link schematics

LiteLink   Component list

Part	Value	Device	Package	Library	Sheet
C1	10uF	10UF-25V-20%(PTH)KIT	CPOL-RADIAL-10UF-25V-KIT	SparkFun-Capacitors	1
C2	104	C-EUC0805	C0805	rcl	1
C3	103	C-EUC0805	C0805	rcl	1
C4	22p	C-EUC0805	C0805	rcl	1
C5	22p	C-EUC0805	C0805	rcl	1
C6	225	C-EUC0805	C0805	rcl	1
C7	225	C-EUC0805	C0805	rcl	1
C8	102	C-EUC0805	C0805	rcl	1
C9	683	C-EUC0805	C0805	rcl	1
C10	102	C-EUC0805	C0805	rcl	1
C11	225	C-EUC0805	C0805	rcl	1
IC6	CH340G	CH340G	SO16D	mylibraries	1
JP1	USB-B	USBPTH	USB-B-PTH	SparkFun-Connectors	1
JP2		M04LONGPADS	1X04_LONGPADS	SparkFun-Connectors	1
JP3		M04LONGPADS	1X04_LONGPADS	SparkFun-Connectors	1
OK1	CW	PC817	DIL04	optocoupler	1
OK4	PTT	PC817	DIL04	optocoupler	1
R1	330R	R-US_M0805	M0805	resistor	1
R2	560R	R-US_M0805	M0805	resistor	1
R3	4k7	R-US_M0805	M0805	resistor	1
R4	1k	R-US_M0805	M0805	resistor	1
R5	470R	R-US_M0805	M0805	resistor	1
R6	1M	R-US_M0805	M0805	resistor	1
R7	330R	R-US_M0805	M0805	resistor	1
R10		R-TRIMM3296W	RTRIM3296W	rcl	1
U$1	PCMIC	PJ-313-D	PJ-313-D	PJ-313	1
U$2	PS/2	MINI-DIN6PTH	MINI-DIN6	SparkFun-Connectors	1
U$3	PCSPK	PJ-313-D	PJ-313-D	PJ-313	1
U$4	CW	PJ-313-D	PJ-313-D	PJ-313	1
U$5	TR5_1	TR5_1	TR5_1	mylibraries	1
U$6	TR5_1	TR5_1	TR5_1	mylibraries	1
U$8	PHONE	PJ-327-E	PJ-327-E	PJ-313	1
Y1	12MHZ	CRYSTALSMD	HC49UP	SparkFun-FreqCtrl	1

Litelink test environment

Each Litelink will be tested before packaging. The test equipment is FT-8900R, power 5W, using GP antenna to test the USB and audio parts of litelink (using ECHOLINK software). In the development process, the ICOM7100, long-line antenna was used to test the CW function.

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