R1 User Manual_ V1.3

EchoLink Controller
Radio-Network link Controller
Radio-Network Differential Rotation Controller

2019-12-31 V1.3 version : Added support for connecting "MotoTRBO" Series 26-pin Accessory Connector (optional)

Product features:

1, built-in USB sound card chip, high-quality audio output and input.。
2, Built-in USB serial chip, launch control using RTS, receive control using DSR。（ECHOLINK **User**）
3, built-in audio detection chip control Radio's PTT button, the radio transponder computer speakers sound output.（ZELLO **User**）
4, with USB chip detects SQL radio signal, the control software forwarding microphone input voice.。（ZELLO **User**）
5, with optocouplers and isolating transformer for audio, so that the computer will not end crosstalk noise power to the radio.
6, with inductance isolated power interference and high-frequency radiation..
7, Full Metal Jacket, shielding all spatial interference.
8, Industrial design and production processes.

Control Principle:

Internet voice chat software output audio controller detects audio output, will control the radio PTT, the radio will sound emitted. Radio received voice, the controller detects the SQL signal through the USB control network voice chat software will be forwarded to the voice of the radio network. In this way, it will be on the radio link network.

Controller applications:

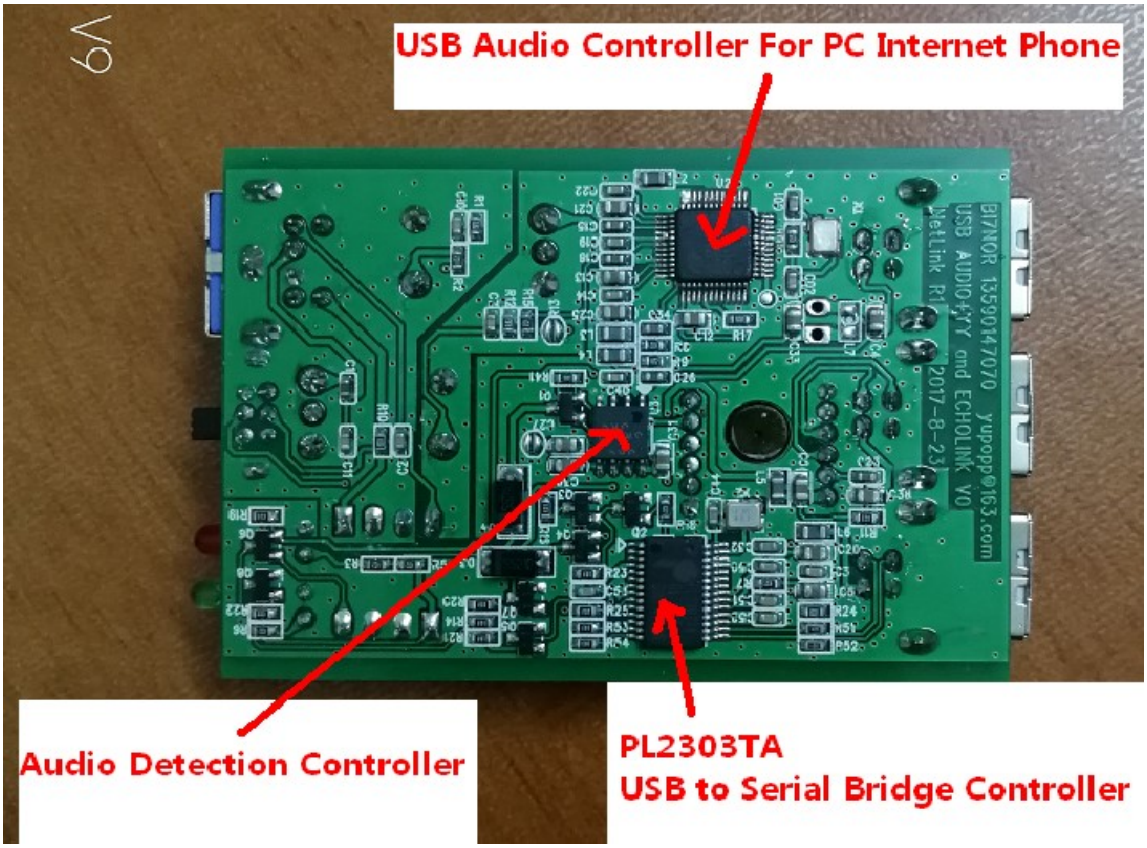
the radio link to the network, you can set up radio links or relay links, extended range radio transceiver or repeater. Can achieve global radio link.

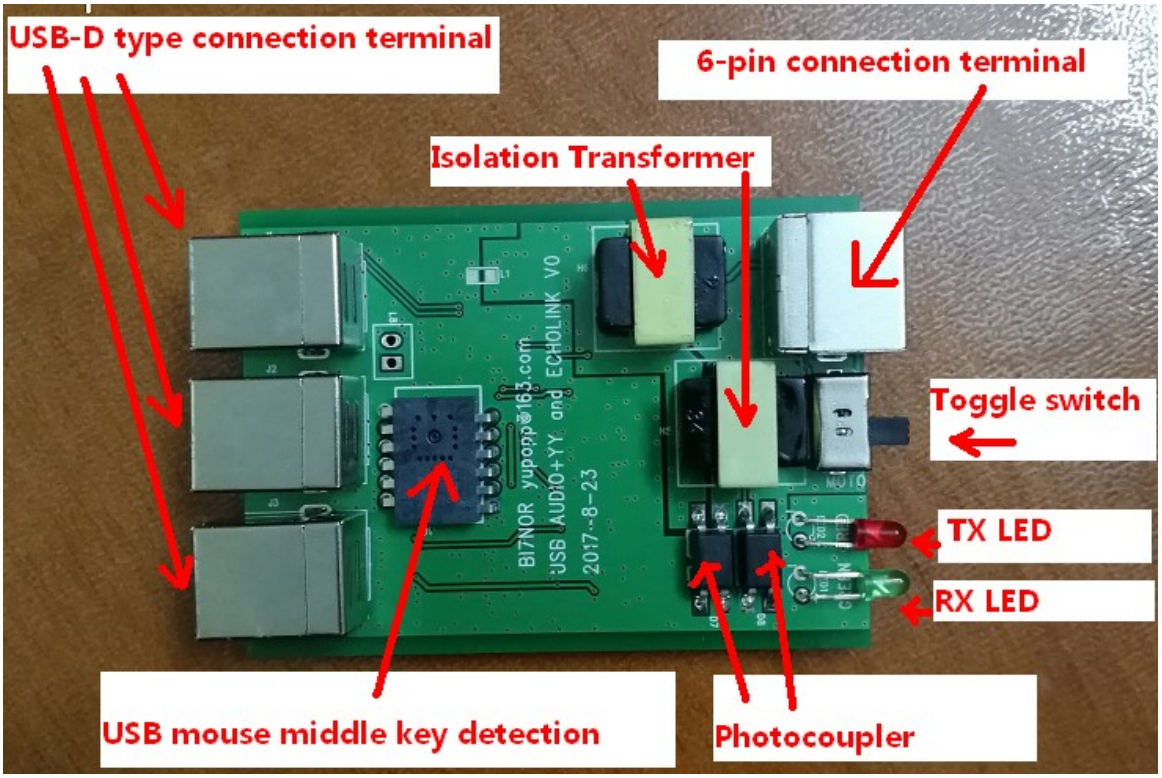
This product supports software:

ECHOLINK、ZELLO、SSTV、psk31、SKYPE、QQ、QT、YY、 etc. chat intercom and data transfer software.

Note1: There are some software does not support USB detection and control, this time, computer microphone input, you can use the software VOX function, or use the keyboard conversion software trigger.

Motherboard function diagram





TX LED （PTT LED） When the external radio is controlled, the red light is on

RX LED （SQL LED） When the external radio receives a signal, the green light is on

Switch position-MOTO:

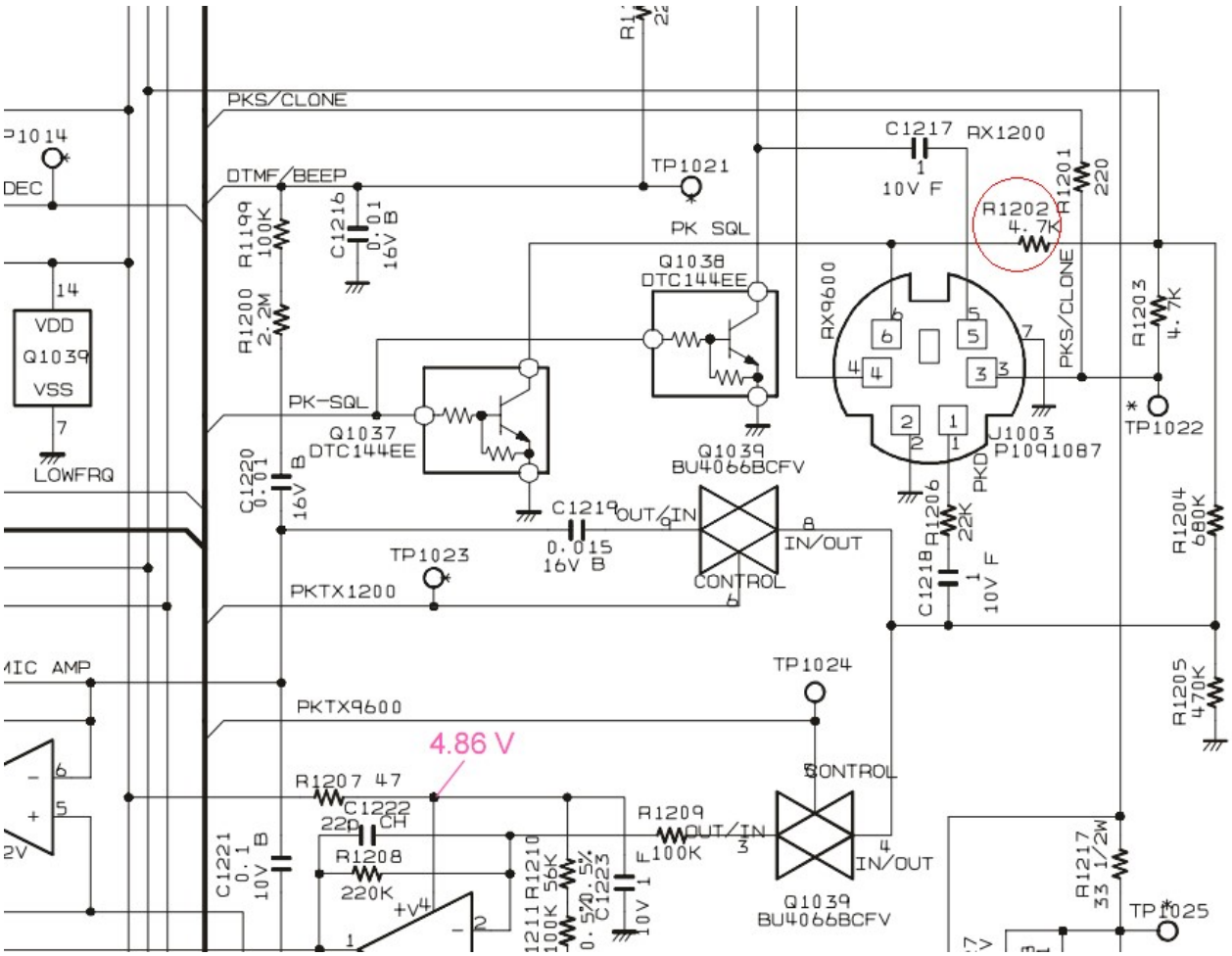
Connect 6-pin to 16-pin converter board, used by Motorola radio stations（16-pin interface）

Switch position -Y, K, C:

Direct connection, YAESU、Kenwood、 ICOM ... Radio use （6-pin TNC interface）

Note2: YAESU, Kenwood, ICOM radio internal, SQL signal on the resistance of the maximum 10K, the test passed. SQL signal on the resistance value is greater than 10K, does not support the use of.

The following schematic is YAESU FT-7800, SQL on the resistance number R1202 is 4.7K, is to support the use of



FT-7800 Schematic - 6-pin TNC interface

Note 3: **About YAESU, Kenwood, ICOM car radio whether to support the use of connection, if you do not understand the schematic confirmation, you can take pictures of HD radio schematic sent to me to confirm, please send the schematic at the same time two e-mail address: bi7nor@yahoo.com yupopp@163.com**

6-pin to 26-pin conversion board (connected to motoTRBO-26 pin accessory):

This is the XPR4550 physical connection:

Accessories Terminal Settings by CPS:

RX Audio Type : Filtered Squelch

Pin #17 : Ext Mic PTT Action Level : Low

Pin #21 : PL/Talkgroup Detect Action Level : Low

"6-pin to 26-pin conversion board" supports most Motorola mobile radios with 26-pin accessory connector including but not limit to below models:

XPR Series : XPR4300, XPR4350, XPR4380, XPR4500, XPR4550, XPR4580, XPR5350, XPR5550, XPR8300

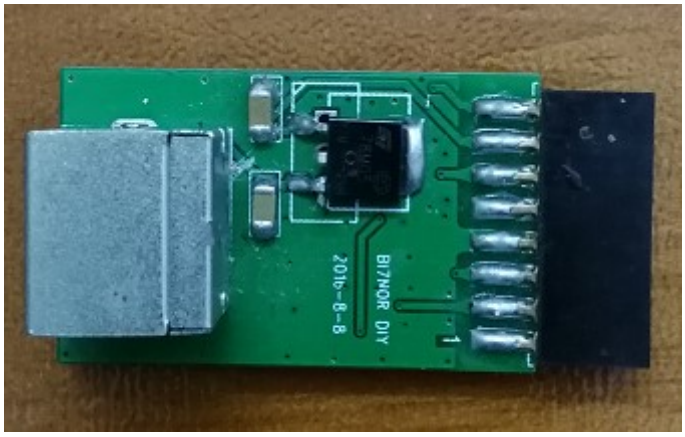
XiR Series : XiRM8200, XiRM8220, XiRM8228, XiRM8620, XiRM8628, XiRM8660, XiRM8668

DGM Series : DGM4100, DGM6100

DM Series: DM3400, DM3401, DM3600, DM3601, DM4400, DM4401, DM4600, DM4601

Note 4: Each regional radio version is different, there is no guarantee that all versions can be used normally.

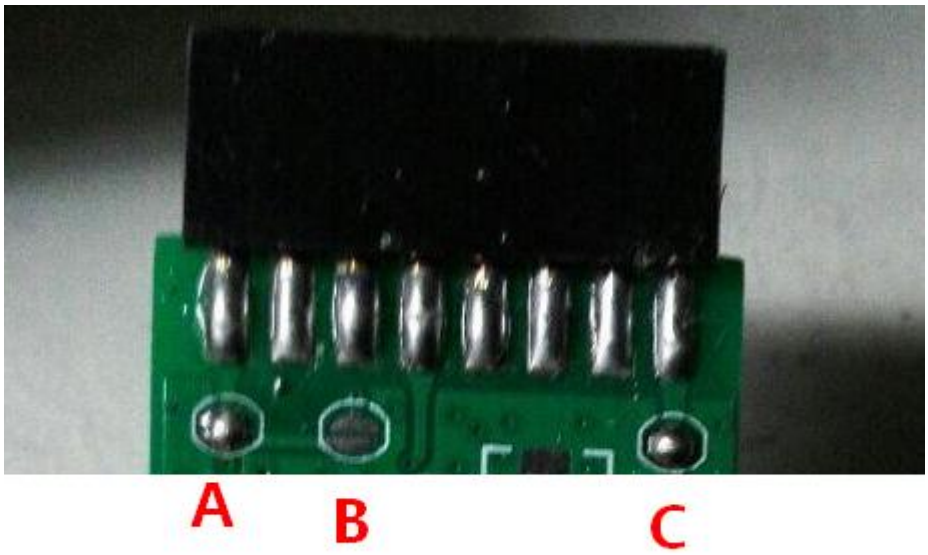
6-pin to 16-pin conversion board (connected to Motorola-16 pin accessory):



6-pin to 16-pin conversion board, connected to the Motorola radio to use to support the connection GM300、SM50、SM120、GM338、GM398、GM3688、GM950I

Radio default setting :

PIN2=MIC INPUT， PIN3=PTT， PIN7=GND， PIN8=SQL (Action Level : Low)， **PIN11=AF OUT**



6 pin to 16 pin conversion board, PCB pad description

A, welding = 2 PIN MIC input (default setting PIN2=MIC INPUT)

B, welding = 5 PIN MIC input

C, welding = 15 PIN and 16 PIN connected, The RADIO built-in speaker = sound output enabled;

PCB blank = no sound output

Driver Installation:

USB sound card chip: windosw system has been integrated driver, do not need to install

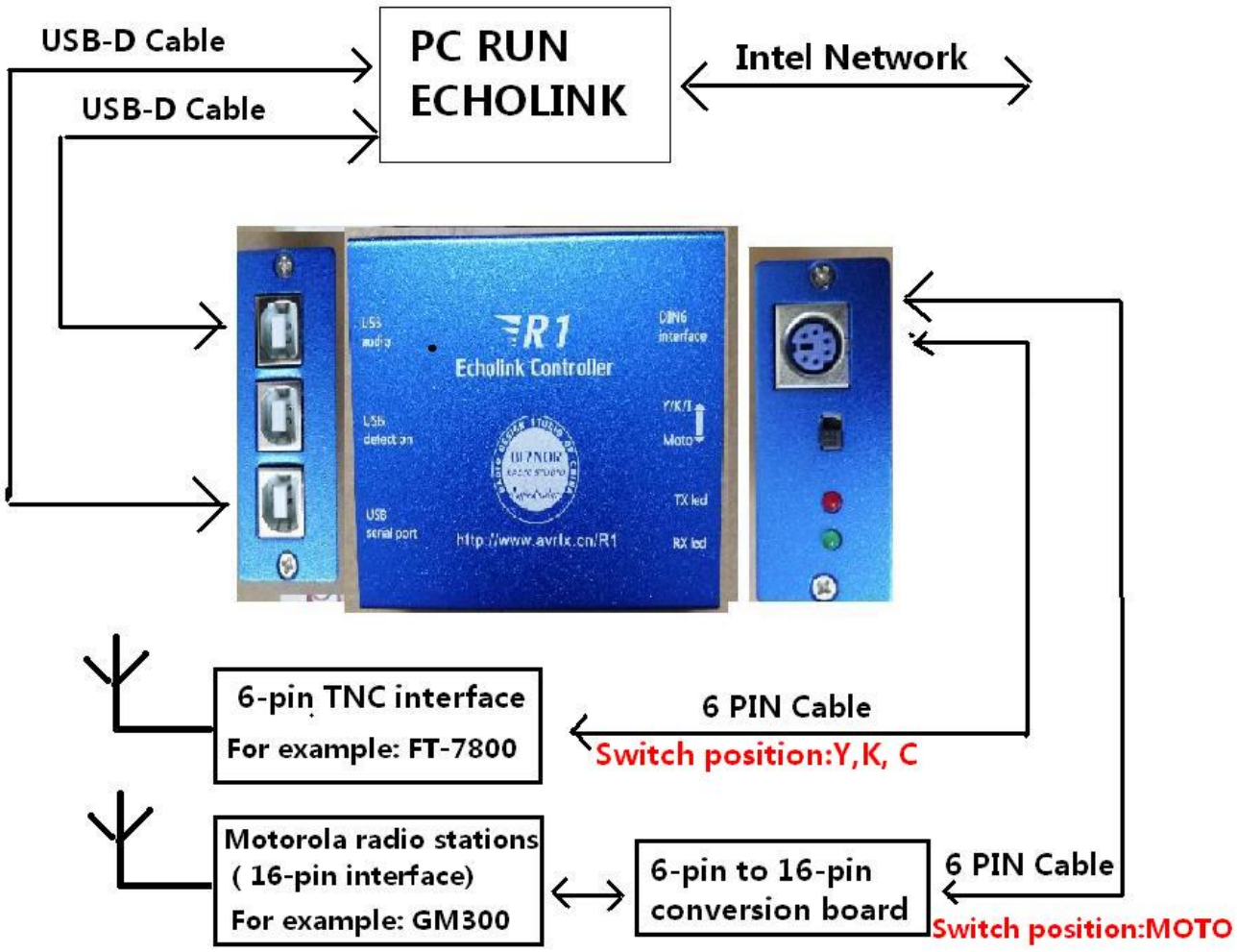
USB mouse middle key detection chip: Windosw system has been integrated driver, do not need to install

USB serial driver download address:

http://prolificusa.com/portfolio/pl2303ta-usb-serial-bridge-controller/

http://www.prolific.com.tw/us/showproduct.aspx?p_id=225&pcid=41

ECHOLINK Connect to use:

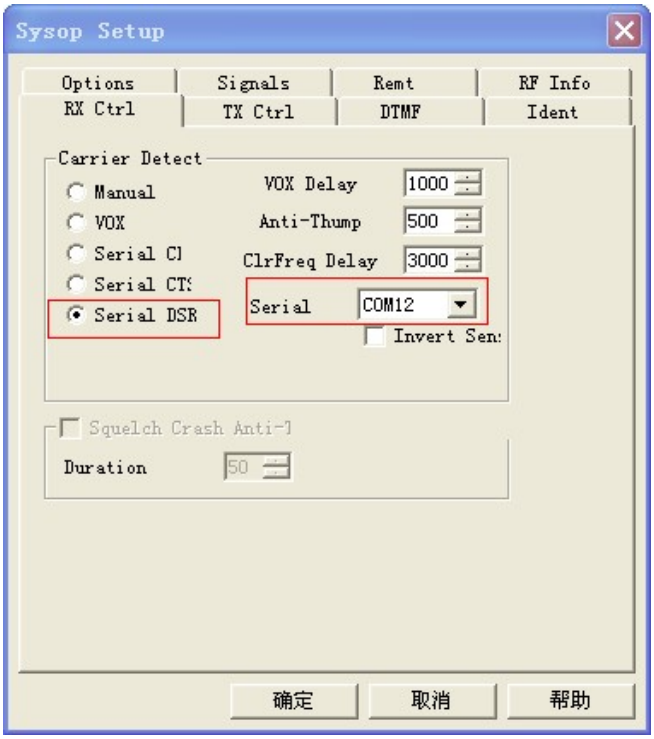


ECHOLINK Set reference

Select audio input and output as: USB pnp sound device

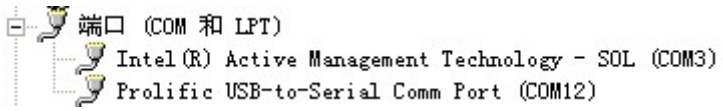
Input and output volume setting, please set to the system audio management interface

System audio management interface, do not choose the microphone to enhance or AGC, if you choose, copy the other party audio noise is very large。

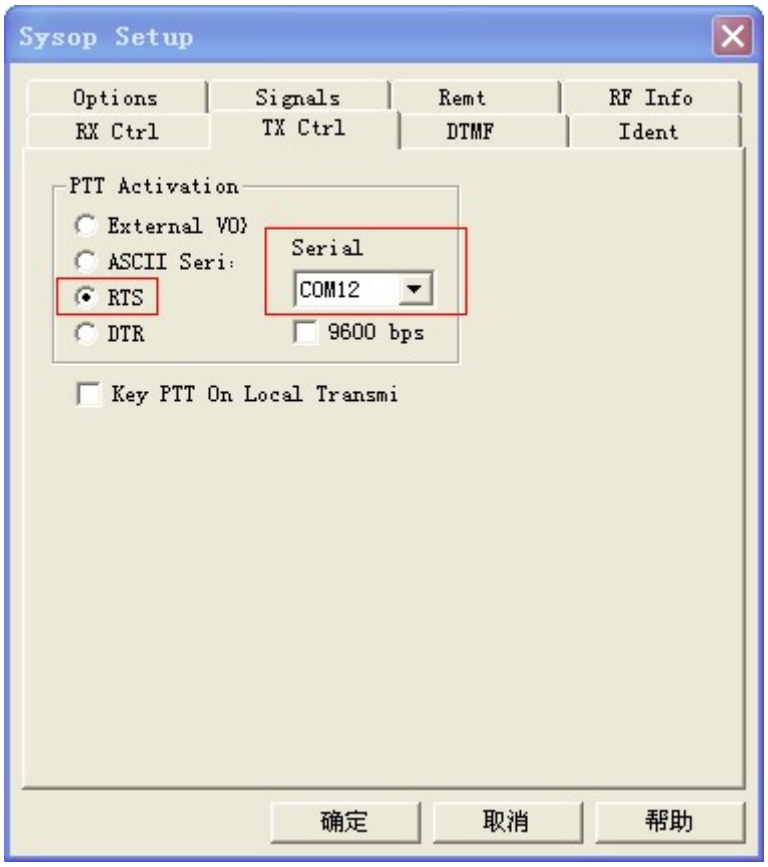


Set receive control as: Serial DSR

Select: USB serial number



USB serial number, see the hardware manager



Set the launch control as: Serial port RTS

Select: USB serial number

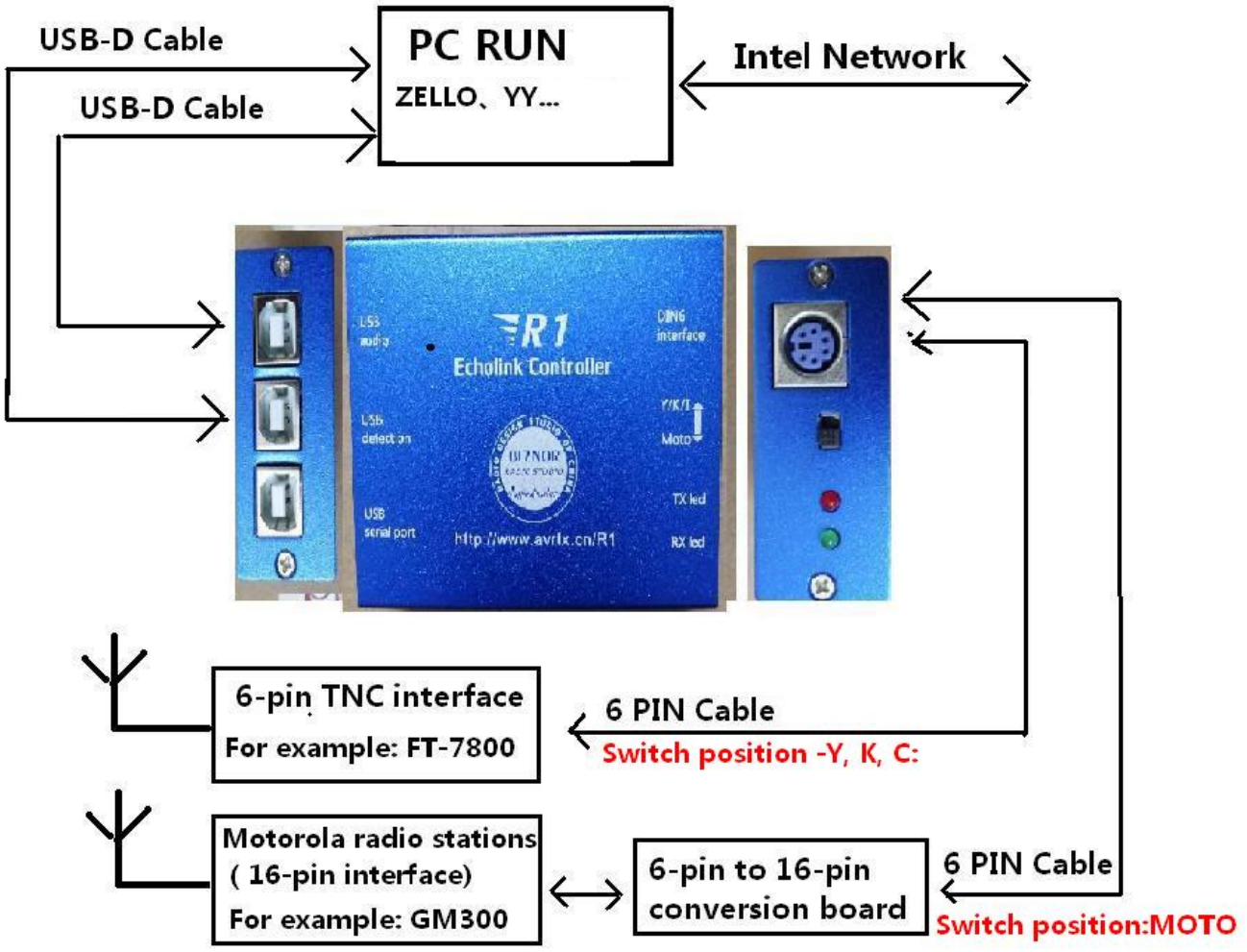
Note 5:

Regarding R1, when the PC is restarted, the work is abnormal. The radio power supply must be turned off first. Then the PC restarts.

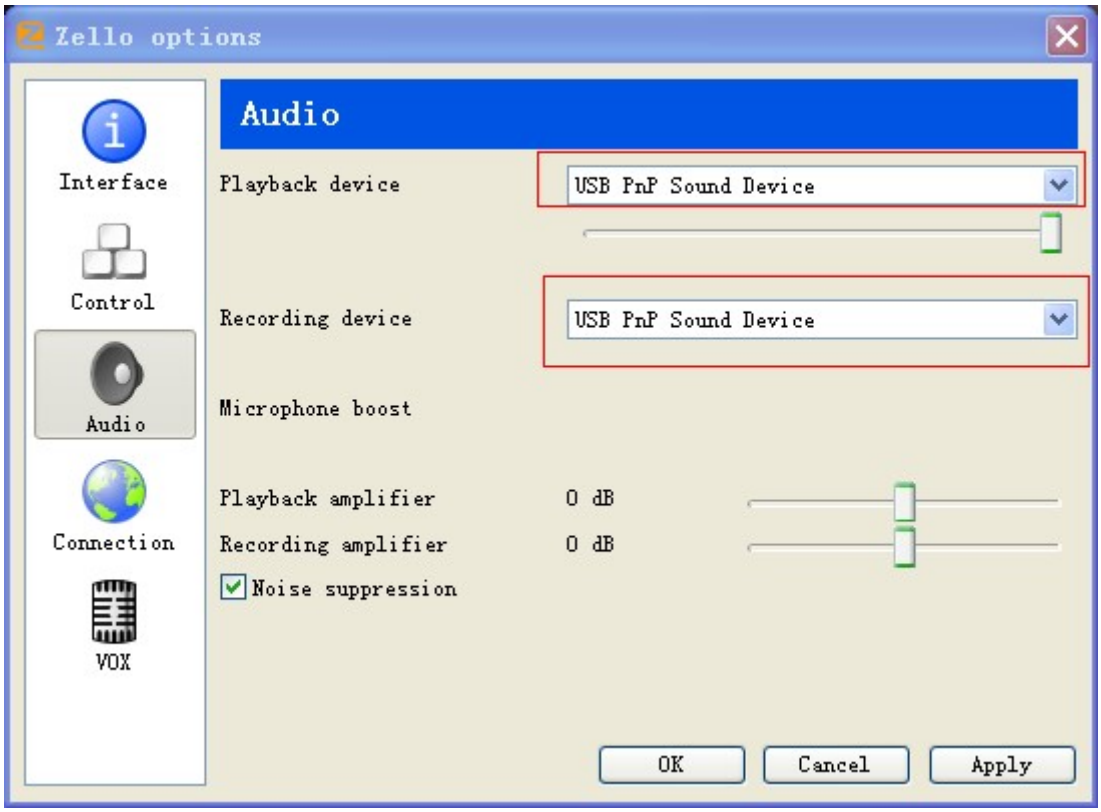
The reason for the above problem is related to the driving control principle of R1 and PC. There is no solution to this problem.

In addition, if the R1 control abnormality occurs after the PC is turned off, please set "PC shutdown = USB no power supply" in the PC BIOS.

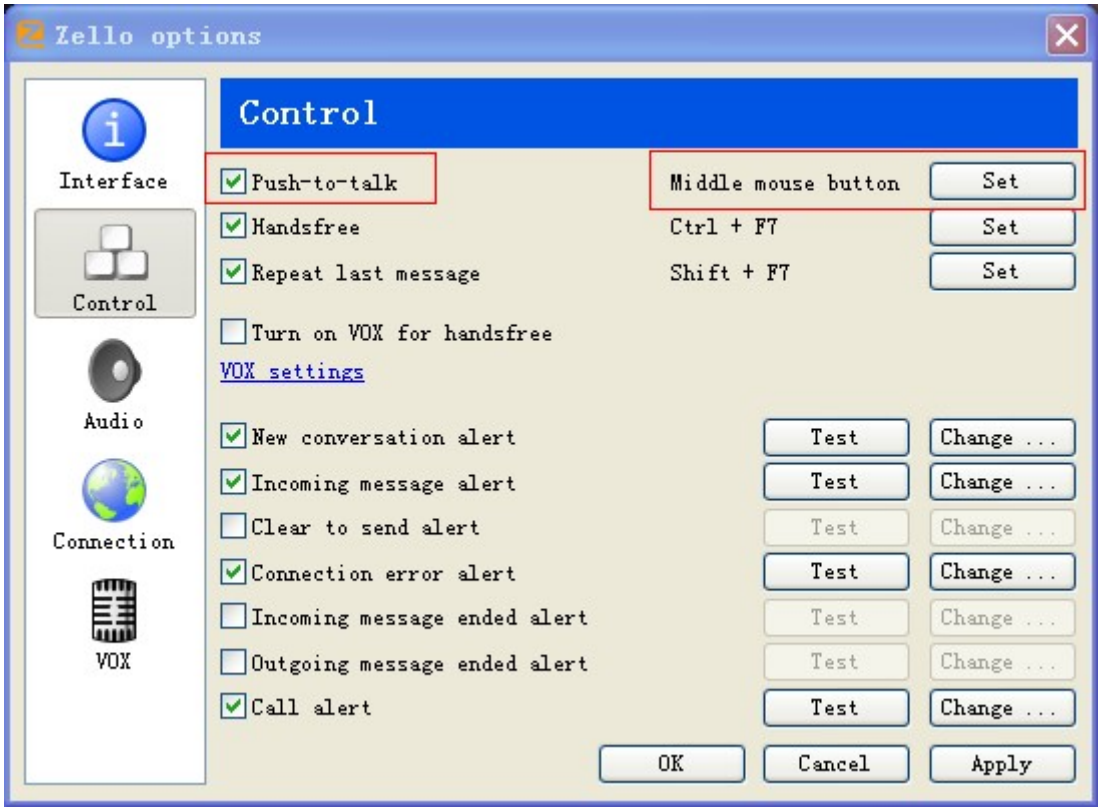
ZeLLO Connect to use:



ZeLLO Set reference

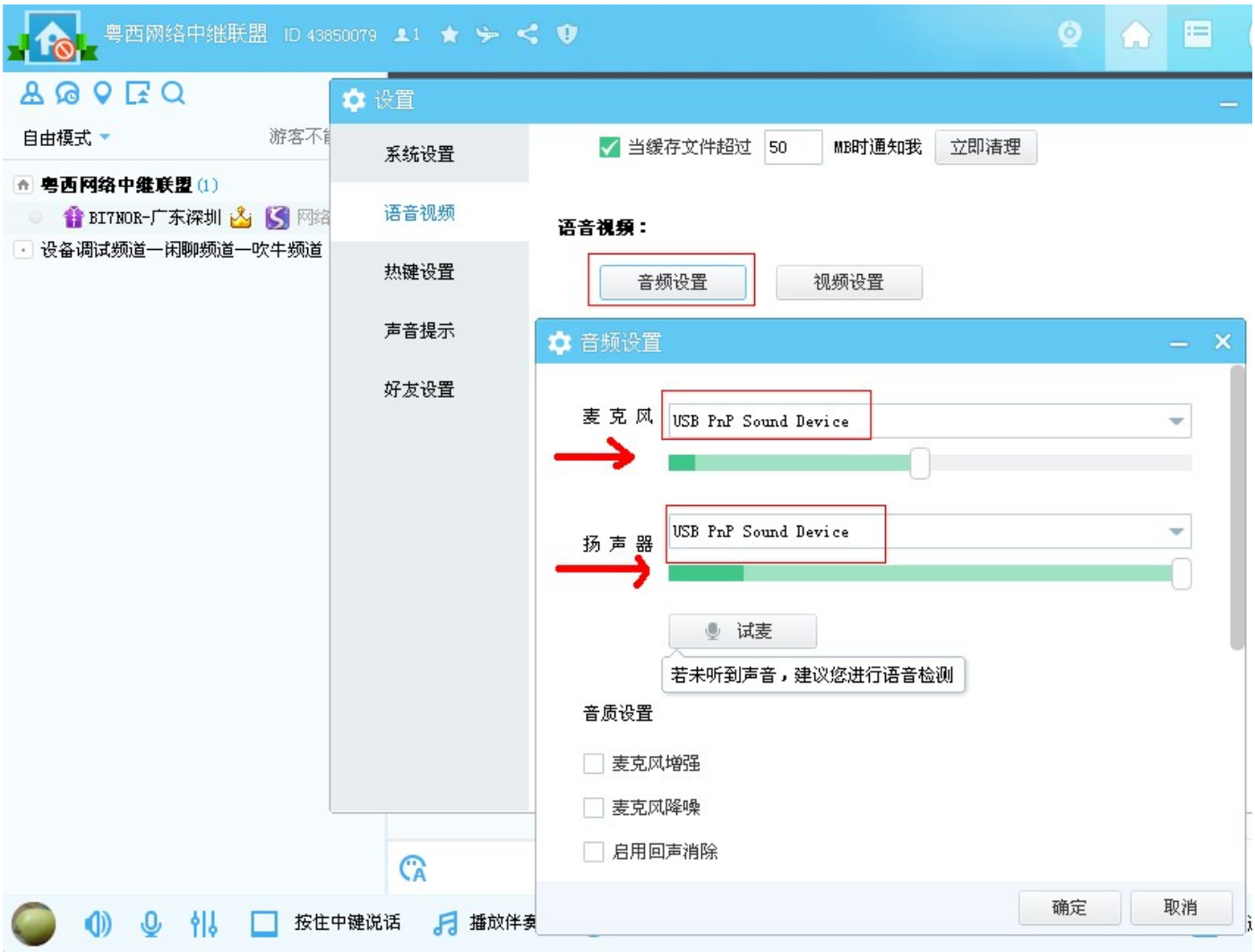


1, set the audio input and output for the USB pnp sound device (windows system has integrated driver)



2，Set ZELLO Push to talk = Middle Mouse Button

YY Connect to use: (YY , Only Chinese Simplified version)



Into the YY channel, select the audio microphone input and speaker output for the USB pnp sound device, the system audio management interface, do not choose microphone enhancement or AGC, if you choose, copy the other party audio noise is very large

Set the external radio to receive the audio sent through the network to each

other, choose to press the mouse to speak: the middle button (selected green point, click the middle mouse button).

External radio transmission is the internal default control, do not need to set.

Tip: The middle mouse button control function should be reserved for YY software. In order to avoid mis-forwarding network communications, other software can not reuse the middle mouse button.

The last two are disabled voice prompts to avoid false trigger communication.

Accessories list ：

R1 controller	**1 PCS**	
USB-D Cable	**2 PCS**	
6 PIN Cable	**1 PCS**	
6PIN-16PIN	**1 PCS**	**(6PIN-26PIN , Optional, one of two)**

Manual Download URL：**http://avrtx.cn/**

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manufacture： BH7NOR (Old callsign: BI7NOR) **2019-12-31**