AVRTNC User Manual V1.1

APRS Digipeater



第一,AVRTNC 中继板的作用

AVRTNC 中继板是一款小型的 aprs 设备,它是专门针对 motorola GM300(系列)设计的一款硬件,使用时只要插入 GM300 的尾部数据口即可当作 aprs 中继台使用,简单方便。板载 LED 显示工作状态,板载 miniUSB 接口可以配置内部参数和升级软件。

The AVRTNC repeater board is a small APRs device, It is specific to Motorola station radio (GM300 Series) a design of the hardware, If connect to GM300 port can be as a repeater station to use, simple and convenient. On board LED display working status, the onboard miniUSB interface can configure the internal parameters and upgrade software.



第二,中继板可以和什么电台连接
中继板支持插在 motorola 尾部 16 针的数据口的电台。例如: GM300 SM120 SM50
GM338 GM398 GM3188 GM3688 GM950I

Digipeater board support Motorola series station radio . Behind the radio have the 16 pin data port. For example

GM300/M120/SM50/GM338/GM398/GM3188/GM3688/GM950I

- Note1: The relay board supports the connection of the digital temperature sensor DS18B20, the connection will automatically identify the additional temperature data and attached to the relay beacon.
- 备注 1: 中继板支持连接数字温度传感器 DS18B20, 连接上会自动识别附加上温度数 据并附加到中继信标中。
- Note2: The sound control endpoint, short-circuit connection, the internal speaker sound output
- 备注 2: 声音控制端点,短路连接后,内部喇叭声音输出

第三,中继板设置

AVRTNC 配置方法步骤:

1. 装好随机配 USB 串口线驱动;重启电脑。

2. 插上 USB 串口线到电脑(先不要插 AVRTNC 板);运行配置软件,选择 USB 串口 线的 COM 端口,

3. 点击读配置(Read Config)按钮;在底部提示 connection 1-20 秒之内,将 USB 插头插到 AVRTNC 小板的 USB 座上。底部提示读取成功,表示已经将配置参数读出。

4. 修改参数后,写入即可(Write Config)(建议每次写入后立刻读取检查一下,如果 有错误重复以上步骤);

1	¥	Config COM4 Sto	VER Config 20160517	
		Load Default Write C	onfig AVR DIGI	
		DISPLAY Please restart AP510	红线提示1至20	

红线提示1至20秒之内读取

配置

AVRTNC configuration steps:

1. Installed USB ttl data line driver and reset computer .

2. Connect USB line to computer (don't connect AVRTNC board). Open the configuration software AVRUBD, select the COM port of the data line,

3.Click the Config Read button (Read Config); in the connection 1-20 seconds, USB connect AVRTNC board. The tip reads successfully, which indicates that the configuration parameter has been read out.

4. Modify data later and save(Write Config). (it is recommended to read the test immediately after each write, if there is a mistake to repeat the above steps)

Note: DIGIpeater must set Virtual GPS enable and DIGI enable

🕈 AVR APRS DIGI CONFIG				
Main Callsigr NOCALL -1 VSSID Digi Path VIDE1-1 VII Out				
Symbol / voverlay r CHINA Only Nap fix PTT Delay600ms V FIC-E Lat 0 v				
Text				
Status Text AVR APRS DIGI				
Comment Tex 144.640MHz				
DIGI Save Power Beep ✓ Digi Enable ○ 0 Min Off Enable ALIAS FREQ Tx/RX CTCSS WIDE1+WIDE: ▼ Tx/Rx 144.6400 MHz CTCSS				
Auto Trans Trans ModeAuto Delay Time(s) 0600				
Virtual GPS 3035.00N/11417.00ErPHG101				
Config COM6 Read Config Load Default Write Config AVR DIGI DISPLAY Default Load Successed				
AVRINC DIGI config Exit				

Note: Use the included USB cable, containing USB-TTL circuit, can not use an ordinary USB

Callsign (Callsign): Set callsign (4-6 capital letters). For example: BG6QBV

Suffix (SSID): call sign suffix to distinguish between different mobile terminals. For example: 9

Digi path: setting propagation allowed relaying the scope and Times (can be customized). For example: PATH1: WIDE1-1

Symbol (symbol): "/" and "\." For instance: ! 3035.00N / 11411.00Er(<u>If use</u> <u>Virtual GPS enable then invalid</u>)

Emission delay (PTT Delay): the length of time the pre-synchronization code data packet, usually set Between 600ms, more power for the wake-up function of the receiver and easy to decode the receiving device. We recommend 600ms.

Send mode options, Two modes can be selected:

1. Manual send (Manual): supports only manual trigger button sent once.

2. automatically sent (Auto): According to the delay time (Delay time) set-up time from Move sent once. For example Delay time = 30 seconds, and then every 30 seconds after positioning device Automatically sent once. (Delay time in seconds). Note: APRS server receives the number According to the package required intervals recommended transmission interval of 20 seconds or more, avoid server Reject packets.

Note: DIGIpeater must set Virtual GPS enable and DIGI enable

DIGI ALIAS: We recommend WIDE1+WIDE2. Aprs path wide1 or wide2 can be forward

Write Config:Save data

第四,升级步聚

AVRTNC 升级软件方法:

将升级 ROM 写入到设备中刷机方法:

- 1. 下载刷机软件,设置好软件的串口号,速率是 115200bps 不要动。
- 2. 载入要升级的 HEX 升级 ROM
- 3. 先拔下 AVRTNC 小板, 然后点击升级软件中"操作"菜单中的"下载"
- 4. 看到密码连接时,立刻将 USB 线插入 AVRTNC 小板,直到升级过程完成。

AVRUBD - [F:\AVRTx\AYRT5\20161206PVI-aprs m64+VHF(fix decoder)\bg6qb	
File Operate Option Help 3. download firmware to AVRINC	
🔁 🔚 🌆 😂 🔚 ≫ 🖷 Language 🚯 📑	
deroder)/bg6qbv/20131127 AVRT5 test.hex]	~
File length: 0x8400/33/92	544 m
> Buffer size: 0x8400/33792	
Option	\mathbf{X}
X Open comport Tail.	
1. Load firmware	
> Start download	
\$ Send reset command: [00 AA 55 0D]	
> Start connect	*
\$ <1> Send connect key: AA	~
\$ <3> Send connect by: AA	
\$ <4> Send connect key AA Data bits 8	4
\$ <5> Send connect key: We 2 setup port and 115200bps	
\$ <5> Send connect key: AA	1
\$ <8 Send connect key: AA	
\$ <9> Send connect key: AA	
\$ <10> Send connect key: AA 4.IT IOOK THIS THEN CONNECT Flow control None	4
\$ (12) Send connect key: AA minil ISB to AVRTNO	
\$ <13> Send connect key: AA	
\$ <14> Send connect key: AA	
\$ <15> Send connect key: AA	
\$ \16 > Send connect key: AA	
\$ <18 Send connect key: AA	
\$ <19> Send connect key: AA	
\$ <20> Send connect key: AA	<u>O</u> k

Upgrade software methods :(will be written to the device)

1. Download the brush machine software ARUBD, set up the software serial number, the default rate is

Do not modify 115200bps; flash space, set to 64K.

2. Load to upgrade HEX;

3. Click on the upgrade software in "Operation" menu "download";

4. When the password to connect immediately miniusb to AVRTNC board until the rise stage process is complete;

第五,中继板的技术参数

待机工作电流 30 MA, 仅支持1200速率 工作温度-20至60度

Standby current :30MA, Support 1200 rate Working temperature: -20---60 C

整套包含:

AVRTNC 电路主板;
USB 数据线一条;

1. AVRTNC circuit board;

2. USB data a lines;