i-MX6 HYTEM Subracks

DATA SHEET

Configuration for HYTEM Firmware subracks

And software use.

This apply for Hytem subracks with I.MX6 controller

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1.1 OVERVIEW

Firmware 4.x is the latest generation of test system firmware from HYTEM France. It allows the test system to execute commands and interact with users in ways that were previously not available. Below is a list of features that are available for test systems running firmware 4.x.

- Touch Screen display
  Allows you to control attenuators in a simple way.
  Providing an intelligent hand over in a one touch button.

- Ethernet interface configurable using the touch
  Screen display.

- DHCP capable
  By default subrack test systems will attempt to obtain network interface information from a listening DHCP server.

- Multi users

(Preliminary) Using Ethernet, it could be as many users as attenuators in the subrack (To be upgraded soon)

- Auto Execute

  Sequence scenarios can be uploaded to the subrack to run them without the latency of the network using our internal SSD drive

- connection

  Remote connection can be done with scripts, telnet software or our included graphical web server.

- Auto upgrading to last firmware with internet connection.

1.2 ETHERNET INTERFACE

One RJ-45 connector with 10Base-T interface provides a 10 Mbps Ethernet connection. Using Telnet Software each attenuator is accessible with a unique port. The first attenuator is on 10001 then second 10002 etc…

1.2.1 ETHERNET SETUP

The network interface by default uses DHCP to attempt to obtain IP, net mask, and gateway IPv4 address. If it is successful, then the IP address will be displayed on display. If there is no DHCP server to issue dynamic network address then the network address can be set manually via the touch screen display.

Note: If you update any network options without being physically cabled to a network, then you will need to connect the test

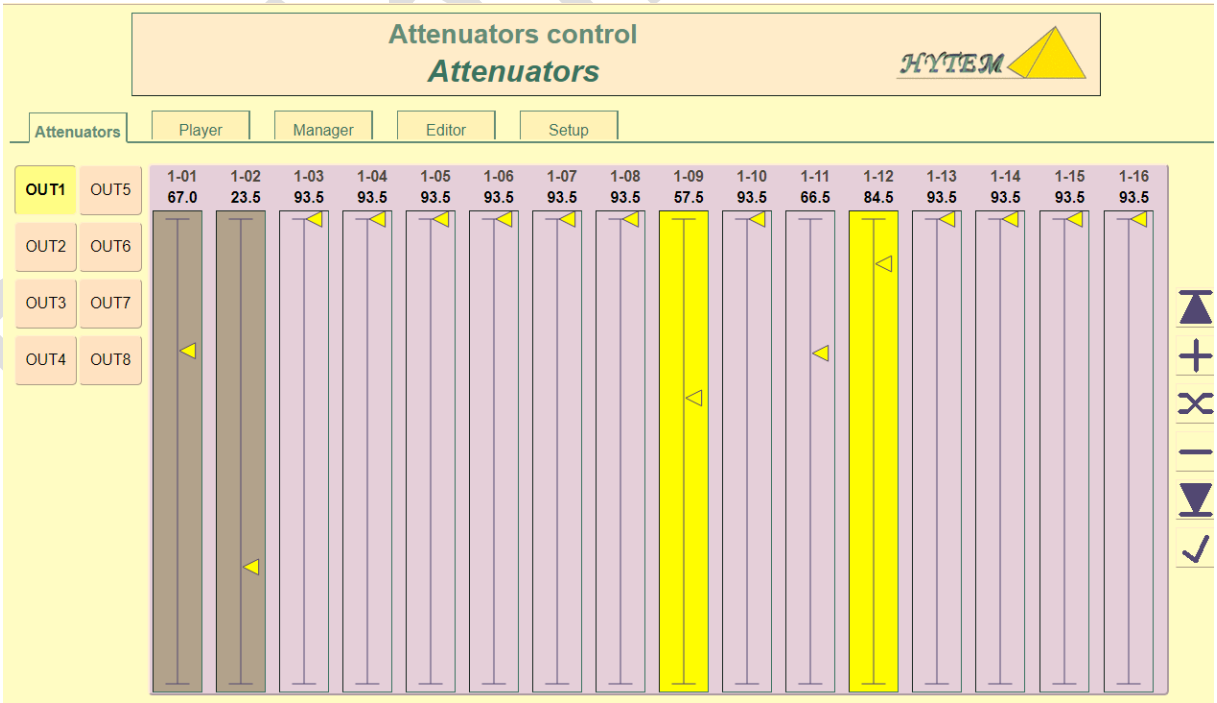
system to the network and power cycle the test system for the changes to take effect.

1.3 WEB SERVER connecting

After the subrack is plugged to your network or USB, you can connect it with our internal web server.

Use your Internet browser (Chrome is recommended) and type IP address given by display for LAN.

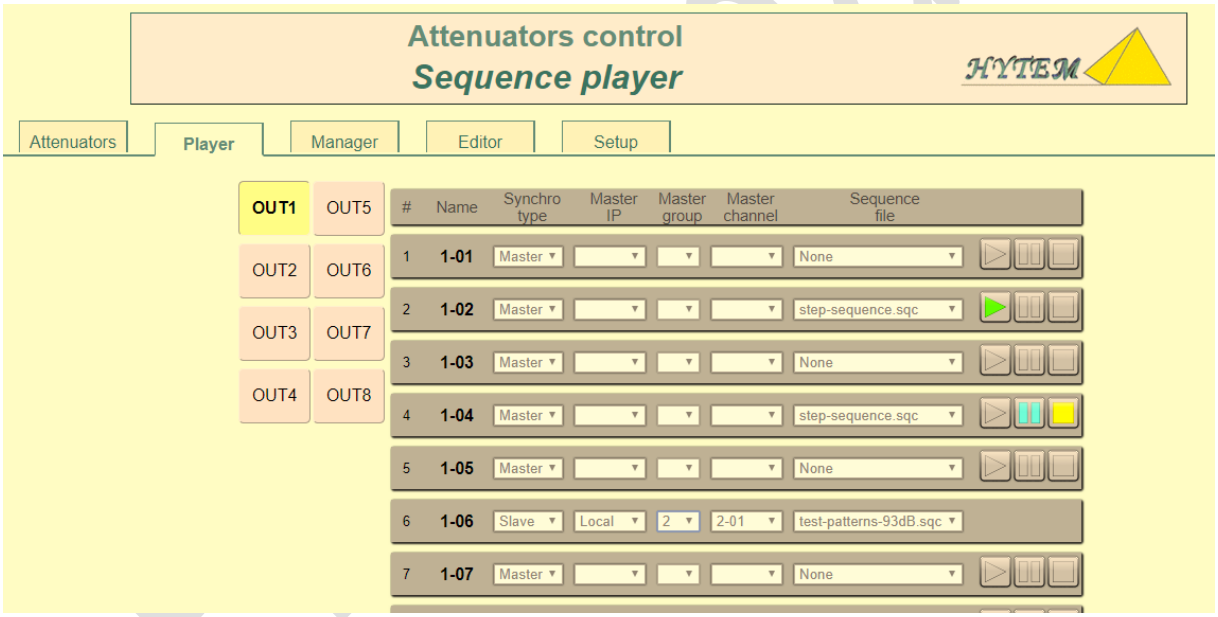
1.3.1 Attenuators



The first 2 attenuators are actually remotely connected by one or more users. They are greyed and you cannot move them. You can select attenuators you want to move,

background become yellow, then you can change their values with your mouse, the “+” button, the “-“ button, the Max  or Min  buttons or make a handover with the “cross”  button.
To use the handover cross button, you need choose, at least 2 attenuators and as many as you want. You can also select / deselect all available attenuator with the “check” button 

1.3.2 Player



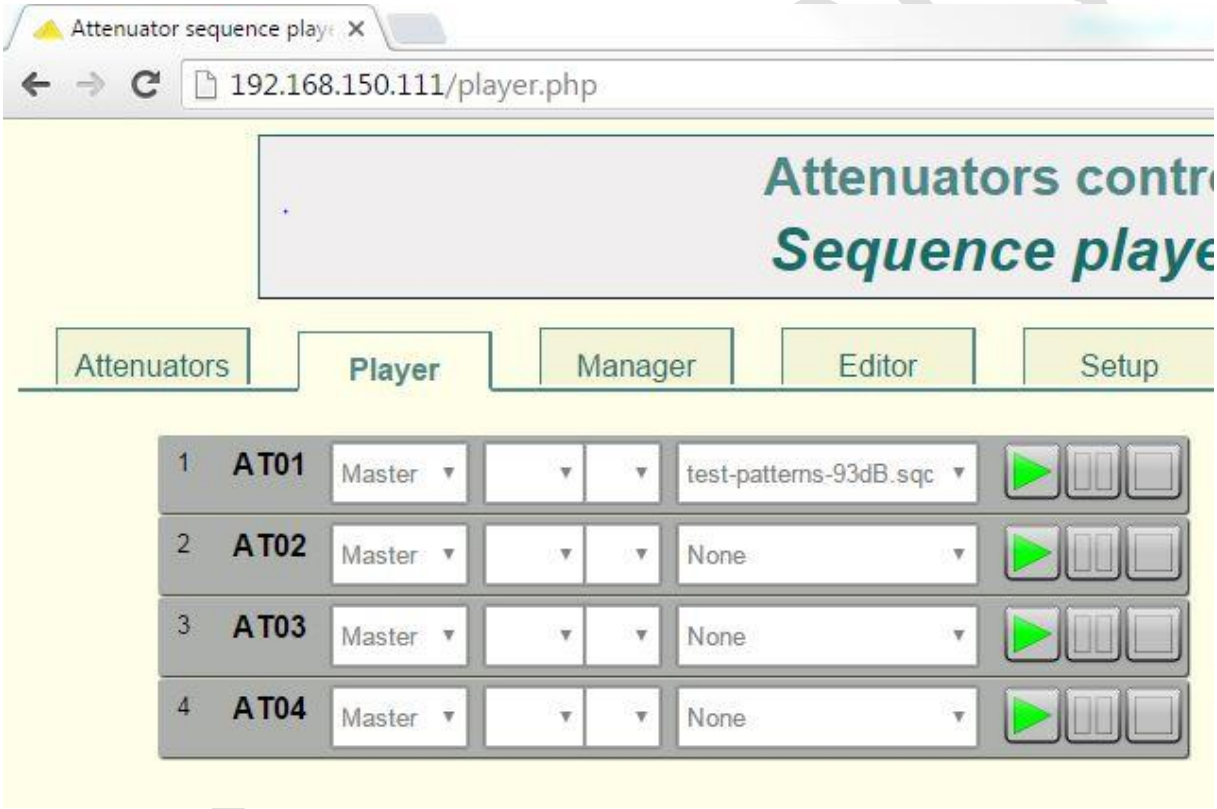
The player permits to launch sequences from the web server. In this case the attenuator number 2 has a sequence in memory named by the author “step-sequence.sqc” and the attenuator number 6 has his own sequence named “test-patterns-93dB.sqc” in memory.

As the option “Synchro type” is selected as “slave”, and the attenuator2 is in master mode the player launch 2 sequence (at02 + AT06) at the same time. (synchro)

With this player, you can configure multiple subracks. IE: One subrack start command can automatically start another subrack on the same LAN.

The two IP address must be the same for the 3 first case. In our example we use 2 subracks with IP **192.168.150.111** & **192.168.150.120**

Case in BLACK must be the same !

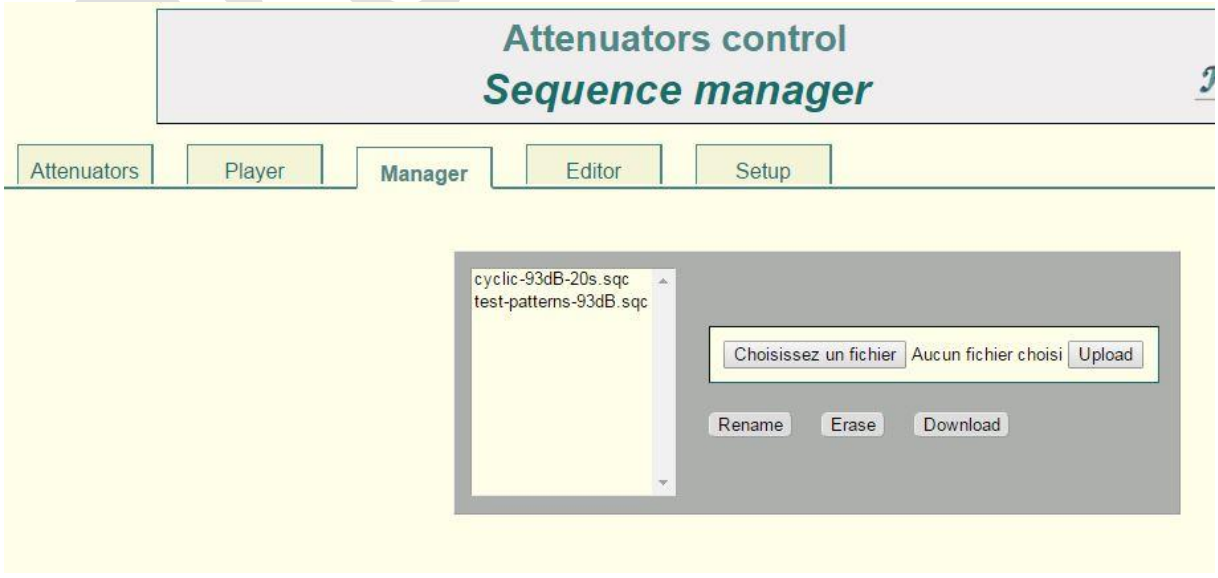


On this first subrack connection (111 here), the AT01 WAY1 is in **MASTER mode** with it's own sequence

On this second subrack connection (120 here), the AT02 WAY2 is choosen to be the slave of the subrack (**111)** (**Extern**) and the WAY1 (**1**). This slave way has it's own sequence

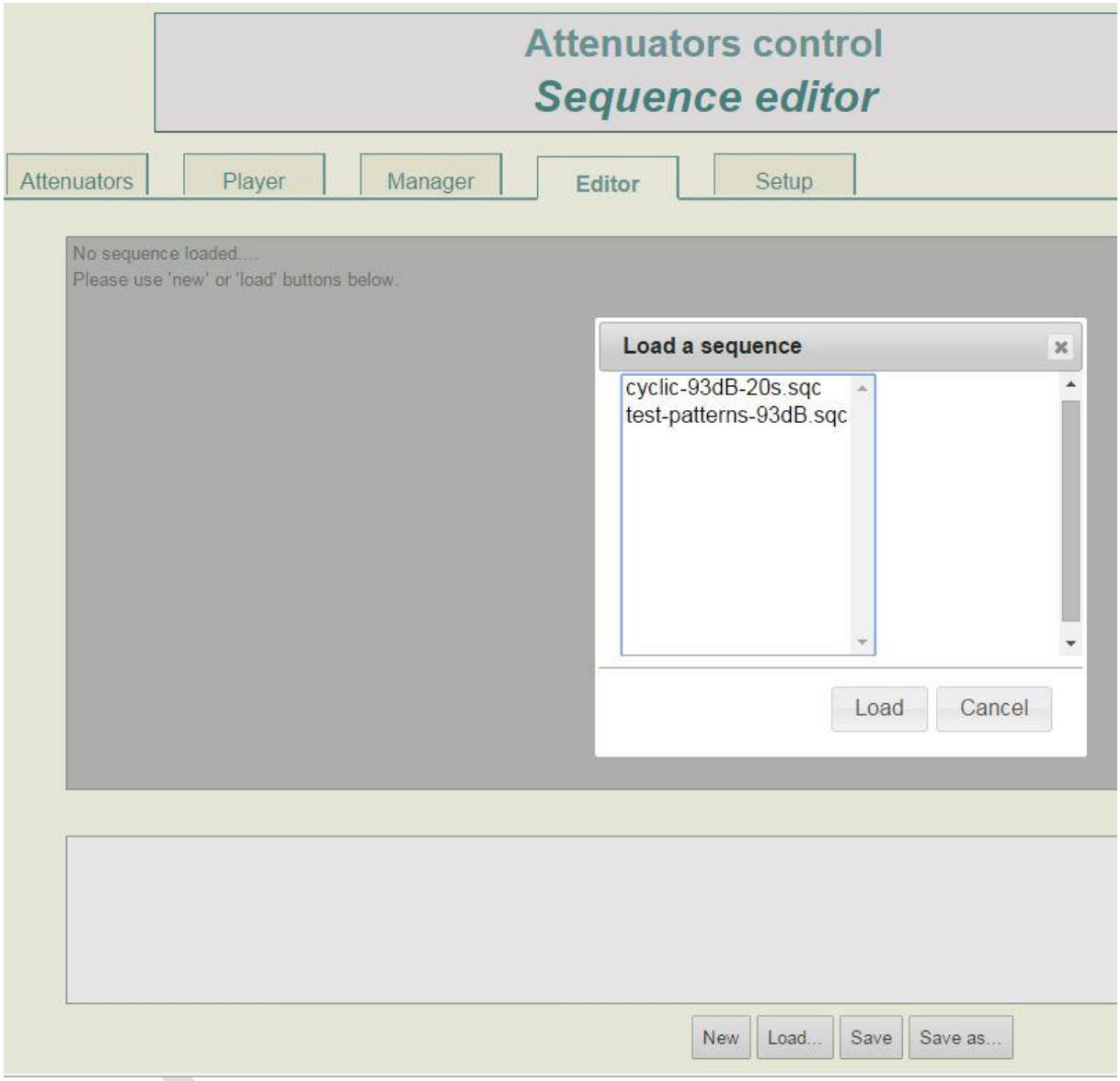
When "Extern" is choosen the PLAY,PAUSE & STOP buttons aren't available because only the MASTER can control them.

1.3.3 Manager



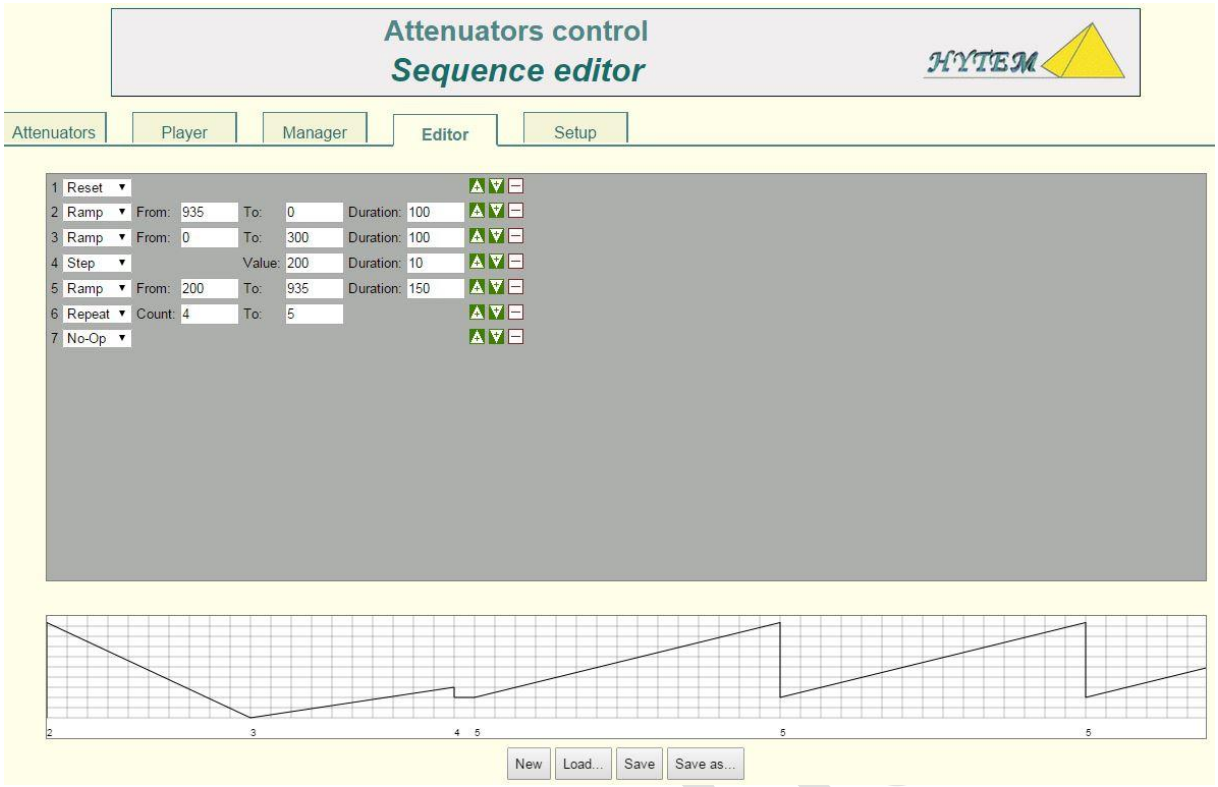
Sequence are uploaded/downloaded into or from the SSD drive with the computer you are using with the **Manager.**

1.3.4 Editor



You can press “New” button to create a new sequence or

Press “load” to read a sequence from the subrack SSD drive, choose the sequence you want to modify.



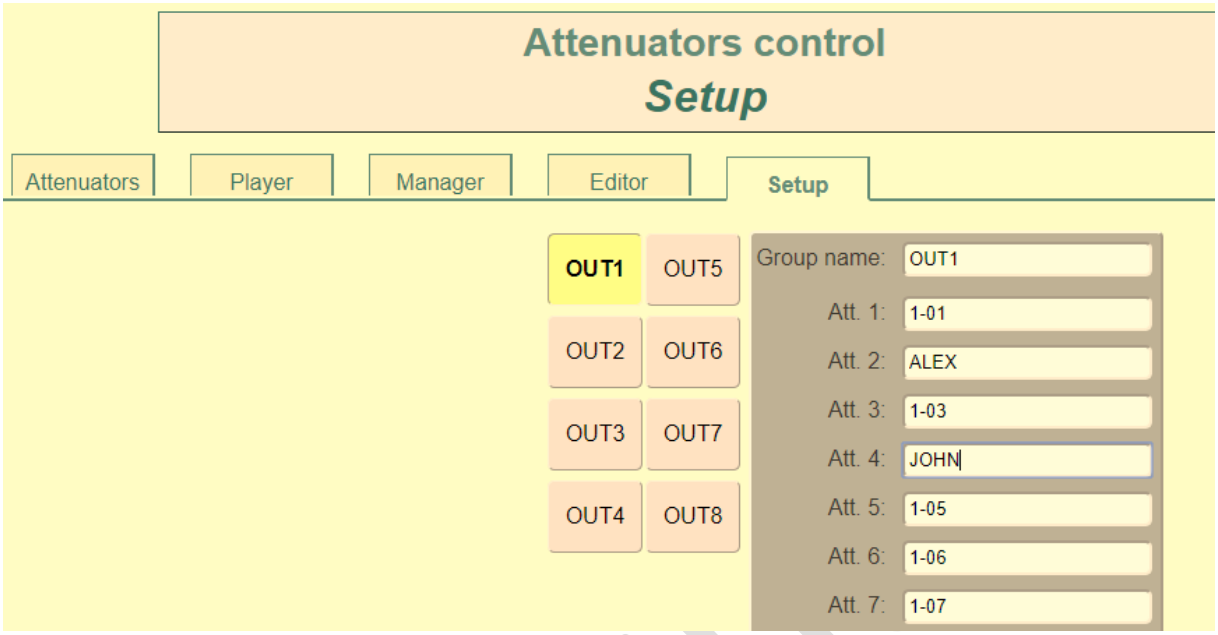
Sequence are created with the web server but could also be created/modified with a text editor like the notepad++ freeware.

The sequence above appear in text type:

```
1   RACKS SELECTED
2
3   Rack 1 :  att01
4
5   ACTIONS
6   #Num     Time     Action  From    To  Duration
7   1    0    3    0    0    100
8   2    100  3    0    5    100
9   3    200  3    0    10   100
10  4    300  3    0    20   100
11  5    400  3    0    40   100
12  6    500  3    0    80   100
13  7    600  3    0    160  100
14  8    700  3    0    320  100
15  9    800  3    0    935  100
16  10   900  4    0    1    0
17
```

Duration: 100 = 1.0 seconds

1.4.4 Setup



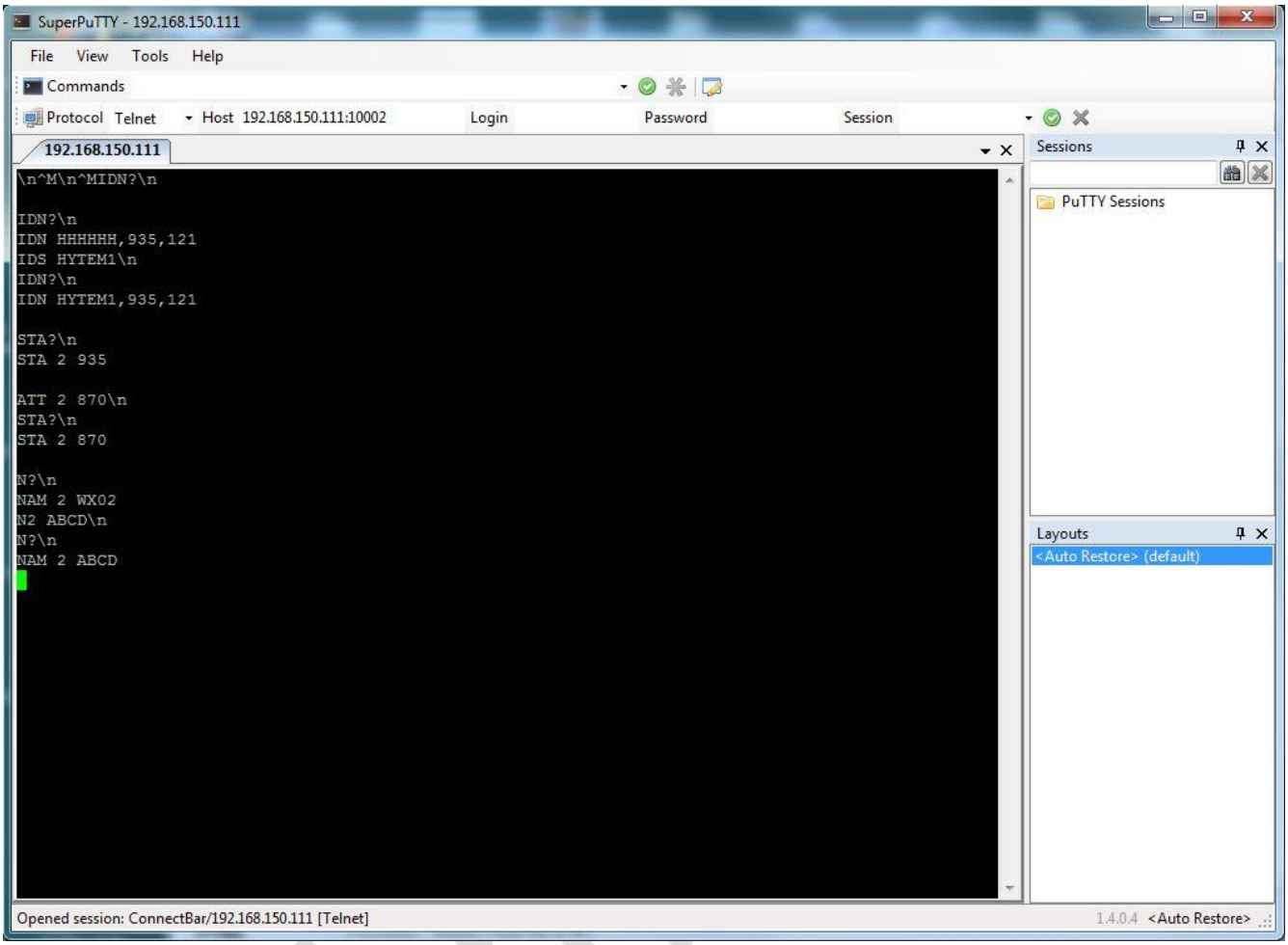
With Setup, you can rename Attenuators (4 alphanumerics)

1.4 DISTANT SOFTWARE connecting

Our new firmware is NOT compatible with our ancient windows software named HRB “Hytem Radio Box”.

1.5 TELNET connecting

Our subrack can easily be controlled over TCPIP using a Telnet program. In this example we use the free software: SuperPUTTY



HOST: Input the IP address of the subrack then input the PORT number.

(10001 = attenuator 1, 10002 = attenuator 2…..)

Then select Telnet and Valid

In the above case, the used port is 10002 so we can only change attenuator number with this simple session.

1.6.1 Protocol

IDN?\n

Ask for name of the subrack.

Return:

IDN xxxxxx,yyy,zzz

xxxxxx = name of the subrack

yyy = max attenuation (935 = 93.5dB)

zzz = firmware version

IDS xxxxxx\n

Change the name of the subrack.

Return: Nothing

STA?\n

Ask for actual value for the attenuator

Return:

ATT x zzz

X = attenuator number

zzz = actual value (ex:870 = 87.0dB)

ATT x yyy\n

Place attenuator x (dependent on port number) at yyy value

Return : Nothing

N?\n

Ask for name of the actual attenuator (also visible on front display)

Return:

NAM x zzzz

X = attenuator number

zzzz = Name of this attenuator (A-Z and 0-9 on 4 digits)

Nx yyyy\n

Change the name of the actual attenuator. Must be (A-Z and 0-9 on 4 digits)

Return : Nothing

1.6.2 DISTANT SEQUENCE LAUNCHING (from firmware 1.25)

Example for playing a sequence from TCP on attenuator 2, done width Linux Telnet. This must be sent on the TCP 2000 port of the subrack.

Each key word must be followed by the attenuator number

SEQ = key word to give the subrack the sequence to play

START = key word to start sequence

PAUSE = key word to suspend

STOP = key word to stop the sequence

```
[~]$ telnet 192.168.3.143 2000
Trying 192.168.3.143...
Connected to 192.168.3.143.
Escape character is '^]'.

SEQ 2 orig-cyclic-93dB-20s.sqc
Ok
START 2
Ok
   (sequence is starting)
PAUSE 2
Ok
   (sequence suspend)
START 2
Ok
```

```
   (sequence continue)
STOP 2
Ok
   (sequence stopped)
    CTRL + ALTGR + ]      <-- Ask for Telnet prompt
telnet> quit
Connection closed.
[~]$
```

Version V4.x: Preliminary

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