

6 Controlling the Technomad Encoder

The Technomad Encoder has a local web server built in. You can control the Technomad Encoder from anywhere on your network using a standard web browser (from your PC, PDA or web tablet).

STEP 1

Open your web browser.

STEP 2

Type in the IP address of the Encoder in the address bar then press Enter. The IP Address is usually written on the unit (ip ending in ".2") You should now see the device status panel of the Technomad IC in the browser window:



F1

F2

F3

F1 User control interface

This frame shows the volume control options and the link to the configuration pages.

F2 Status and control

This frame shows the current device status. Several links allow control and simulation of button inputs, relay output and serial signals.

F3 Help

This frame shows the help for the available links in the device status page.

6.1 User control interface



(+)

This action increases the volume in steps of 5 %.



VOLUME SLIDER

This action lets you adjust the volume level. Click closer to the + (plus) sign for higher volume or closer to the - (dash) sign for lower volume.









(-)

This action lowers the volume in steps of 5 %.



A click onto this button will bring you to the device configuration page.

6.2 Status and control

Status		TALKING
Input peak value	29	
Output peak value	7	
FORCE TALK STOP	TALKING	
SET CLR	BUTTON 0	
SET CLR	BUTTON 1	
TOGGLE SET CLR	RELAY	
SET CLR	CTS IN	
SET CLR	RTS OUT	

Status

Shows the current status:

"INACTIVE"

"TALKING"

"TALKING SUPPRESSED"

"FORCED TALKING"

"LISTENING"

Input peak value

The number [0..65535] shows the peak value of the encoder (Line or Mic In).

Output peak value

The number [0..65535] shows the normalized peak value of the encoder when encoding (e.g. Talk) or the normalized peak value of the decoder when decoding (e.g. Listen).

TALKING

Click the "FORCE" link to force the talking. This overrides the "TALKING SUPPRESSED" mode, e.g. when an other device is talking to this device.

Click the "TALK" link to start talking.

Click the "STOP" link to stop talking.

The LED next to TALKING has the following meaning: GREY for not talking, GREEN for talking, RED for forced talking

BUTTON 0 and 1

Click the "SET" link to simulate the button being pushed.

Click the "CLR" link to simulate the button being released.

The LED next to "BUTTON" has the following meaning: GREY for released, GREEN for pushed (simulation is not shown!)

RELAY

Click the "TOGGLE" link to activate the relay for the "Relay toggle duration" time, adjustable in "Settings" under "I/O".

Click the "SET" link to activate the relay.

Click the "CLR" link to deactivate the relay.

The value next to "RELAY" has the following meaning: GREY for inactivated, GREEN for activated

CTS IN (RS-232)

Click the "SET" link to simulate CTS being activated.

Click the "CLR" link to simulate CTS being deactivated.

The value next to "CTS IN" has the following meaning: GREY for inactivated, GREEN for activated (simulation is not shown!)

RTS OUT (RS-232)

Click the "SET" link to activate RTS.

Click the "CLR" link to deactivate RTS.

The value next to "RTS OUT" has the following meaning: GREY for inactivated, GREEN for activated

7 Device Configuration

To enter the Technomad Encoder device configuration you can log onto its local web server.

STEP 1

Open your web browser

STEP 2

Type in the IP address of the Technomad Encoder and press Enter

Example: 192.168.0.12

STEP 3

Click on the Config button



7.1 Configuration Overview



A INFO FRAME

This frame shows the Encoder's MAC address and the installed version of Firmware, Web application, Bootloader and Setup.

B MENU FRAME

This frame shows the available menu icons. A click on SETTINGS brings you to the settings page when you are on the DEFAULTS, REBOOT or UPDATE page. A click on HOME brings you to the device status page.

C SETTING TABS

This bar shows the available tabs within the settings menu.

D HELP FRAME

This frame shows the help to all settings and menus.

7.2 Network settings

Here you can configure the Encoder's **Static IP** address.

With this you can set a permanent IP address so that the device does not have to get a new one upon power-up.

We recommend that you set a **Static IP** address.

IP Address

Enter the 4 values of the desired device IP address e.g.: "0.0.0.0" for automatic discovery (DHCP, IPzator, AutoIP) "192.168.0.12" for an internal LAN

Netmask

Enter the 4 values of the desired **Static IP** e.g.: "0.0.0.0" for a default Netmask depending on the used IP Address. "255.255.255.0" for a C class network

Gateway IP Address

Enter the 4 values of the desired Gateway IP address e.g.: "0.0.0.0" for no Gateway "192.168.0.1" for a Gateway in a LAN

Note: The Gateway has to be set only when connecting to other devices over the WAN (through a router).

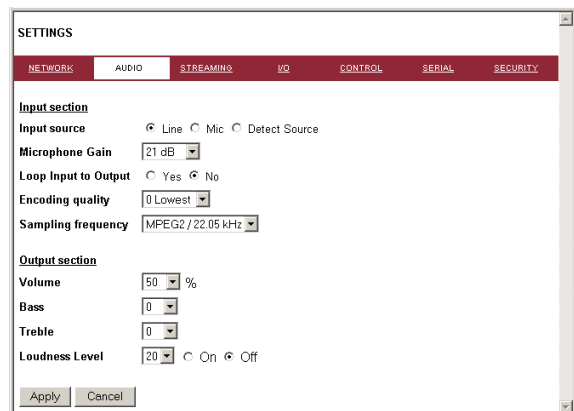
Use Sonic IP

If set to yes, the Technomad Encoder will announce its IP address over the audio output.

To store these settings click on Apply button. The device will restart with the new settings.

7.3 Audio settings

These settings adjust the audio input and output.



Input source

Choose the desired input source. On Detect Source the device chooses the input with higher audio level during start up.

Microphone gain

Choose the desired gain (21 - 43.5dB) for the microphone.

Loop Input to Output

Choose "Yes" to hear the input signal on the local output. (For testing only, feedback may occur when using a speaker).

Encoding Quality

Choose between "0 lowest" and "7 highest" in steps of 1.

See the Encoder Quality table below that shows average bit rate in kbit/s for all quality settings and several sampling frequencies in kHz.

Qual.	0	1	2	3	4	5	6	7
44.1	65	68	73	80	90	105	125	140
22.05	35	38	40	45	50	60	75	90

Sampling Frequency

Choose between 6 different settings. From "MPEG1 / 48kHz" down to "MPEG2 / 16kHz".

Volume

Choose between "0%" and "100%" in 5% steps.

Bass

Choose between "-10" and "10".

Treble

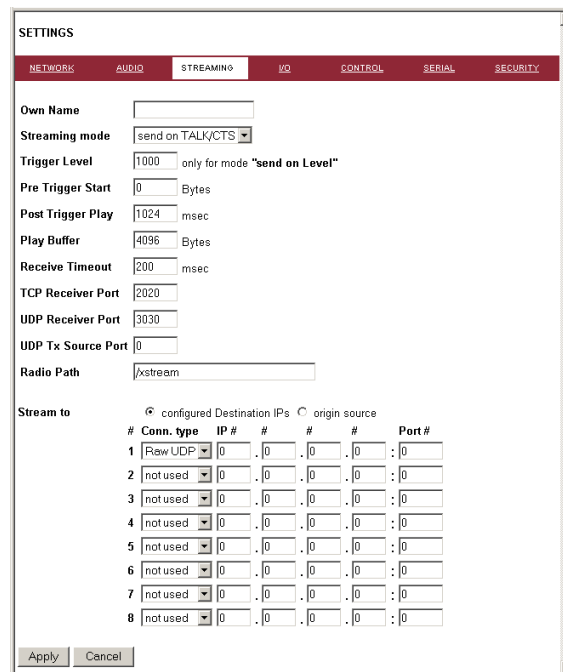
Choose between "-10" and "10".

Loudness Level

Choose between "0" and "20" and switch the Loudness "On" or "Off".

7.4 Streaming settings

These settings adjust the streaming mode, parameters and destinations.



Own Name

You can enter the name of the Encoder here. This name will be returned when using the DISCOVER command (see technical documentation)

Streaming mode

"send always" will stream always

"send on TALK/CTS" will stream if the TALK button is pressed or CTS (Pin 8 Serial connector) is connected to a positive supply like 9VDC (Pin 4 Serial connector), see section I/O settings on how to configure CTS behavior

"send on Level" will stream if the incoming sound is above the Trigger level

"auto answer" will stream back for the Post Trigger Play duration after a stream has been received

"receive only" can receive a stream but will never send one

Default setting is "send on TALK/CTS".

Trigger level

Only used when Streaming mode is "on Level".

Set to a value between 0 and 65535.

Open the Device status page and look for the Input peak value to get a hint for the trigger value. This page refreshes itself every second.

Default setting is "1000".

Pre Trigger Start

Pre Trigger Start can be adjusted to prevent cut offs when starting to talk too early. Defines the amount of time that will be streamed before the actual trigger occurred. Default setting is "0" milliseconds.

Post Trigger Play

Post Trigger Play can be adjusted to prevent cut offs when releasing the button too early. Defines the amount of time that the device will stream on after the actual trigger has been cleared.

When *Streaming mode* is set to "auto answer" this defines the duration the device will stream back after a stream has been received.

Default setting is "1024" milliseconds.

Play Buffer

Defines the amount of bytes that will be stored before playing the received stream. Lower this value to minimize delay, increase this value to prevent dropouts.

Default setting is "4096" Bytes.

Receive Timeout

Defines the amount of time between the end of a received stream and switching to preparation of talking.

Default setting is "200" milliseconds.

TCP Receiver Port

Enter the port number for receiving a TCP stream.

Set to a value between 0 (disabled) and 65535.

Default port for TCP is "2020".

UDP Receiver Port

Enter the port number for receiving a UDP stream.

Set to a value between 0 (disabled) and 65535.

Default port for UDP is "3030".

UDP Tx Source Port

This setting is only used when working with a custom software application.

Enter the source port number to be used when sending a UDP stream. Set to a value between 0 and 65535. When set to 0 the source port is set to the same port as selected in destination port in section *Stream to*. If destination is set to "origin source" then UDP Receiver Port is used.

Default setting is "0".

Radio Path

Enter a radio path to listen to the transmitted stream of this device using an MP3 player program like WinAmp. The URL to connect is **http://x.x.x.x/p**. Where **x.x.x.x** is the IP address of this device and **p** is this path.

Example: *http://192.168.0.24/xstream*

The device can serve up to 6 radio streams.

Default setting is "/xstream".

Stream to

Choose if the stream should be sent to the defined destinations or to the last calling station (to the device where the last communication came from).

There are up to 8 destinations to stream to. Each one can be directed to a device, multicast or broadcast address.

Conn. type

Choose the type of connection:

"not used" for unused destinations

"Raw UDP" for a UDP connection

"Raw TCP" for a TCP connection

IP

Enter the 4 values of the destination IP address e.g.:

"0.0.0.0" for unused destinations except when connection type set to UDP it will be broadcasted e.g. "192.168.0.255"

"192.168.0.34" for a directed connection

"192.168.0.255" for a broadcast

Port

Enter the port number to be used for each destination.

Set to a value between 0 and 65535. A "0" for used

destinations will use the respective "Receiver Port". If these are set to "0" then the default ports are used (TCP "2020", UDP "3030").

Note

The default setting (factory defaults) for the streaming destination # 1 is Raw UDP 0.0.0.0 : 0. This means it is UDP broadcasting on port 3030!

Considerations

The choice of settings to distribute the stream to the other station(s) depends on your environment and desired functionality.

If the stream should be received guaranteed by only a few devices (up to 8) we recommend to use TCP since lost packets are retransmitted automatically.

If the stream is intended to be received by many devices we recommend to use UDP broadcast as long as all devices are on the LAN as broadcast is not be able to pass over a WAN.

If your network infrastructure is capable of multicasting use multicast to reduce the traffic generated by broadcasting.

A mix of all the above is possible as each of the 8 destinations allow the individually choice of the connection type.

7.5 I / O settings

These settings adjust the device behavior for inputs and outputs (attached buttons, the serial CTS signal and the relay toggle duration).

Setting	Value
I0 pushed command	c=83
I0 released command	c=84
I1 pushed command	r=c=78
I1 released command	r=c=79
Relay toggle duration	30 x 0.1 sec (Door buzzing duration)
CTS close command	r=c=78
CTS open command	r=c=79

I0 pushed command

Configures which command should be issued when the I0 button is pushed (see further below for commands).
Default: c=83

I0 released command

Configures which command should be issued when the I0 button is released (see further below for commands).
Default: c=84

I1 pushed command

Configures which command should be issued when the I1 button is pushed (see further below for commands).
Default: r=c=78

I1 released command

Configures which command should be issued when the I1 button is released (see further below for commands).
Default: r=c=79

Relay toggle duration

Defines the amount of time (in tenths of a second) the door strike will buzz when the "Dout" toggle command is received.

Default: 30 (3 seconds)

CTS close command

Configures which command should be issued when the CTS signal on the serial connector is activated (see further below for commands).

Default: r=c=78

CTS open command

Configures which command should be issued when the CTS signal on the serial connector is deactivated (see further below for commands).

Default: r=c=79

Commands

Commands can be joined using the "&" character and will be executed sequentially.

TALKING MODE

c=83 : Activate the talking mode

c=84 : Deactivate the talking mode

c=91 : Activate the forced talking mode

STREAMING

c=77 : Set destination Syntax :

c=77&entry=x&ip=a.b.c.d&port=p&type=t

For x use 1 to 8 (Streaming destination 1 to 8)

a.b.c.d is the IP address to stream to

p stands for the port number to be used

For t use 0 (not used), 1 (Raw UDP) or 2 (Raw TCP)

(Example:

c=77&entry=2&ip=192.168.0.100&port=3030&type=1 sets the destination 2 to Raw UDP to IP 192.168.0.100 on port 3030)

I/O

c=78 : Activate the relay

c=79 : Deactivate the relay

c=80 : Toggle the relay for the preset time

c=85 : Simulate the I0 button being pressed

c=86 : Simulate the I0 button being released

c=87 : Simulate the I1 button being pressed

c=88 : Simulate the I1 button being released

SERIAL

c=89 : Simulate the CTS Signal being activated

c=90 : Simulate the CTS Signal being deactivated

c=60 : Activate the RTS Signal

c=61 : Deactivate the RTS Signal

REMOTE COMMANDS

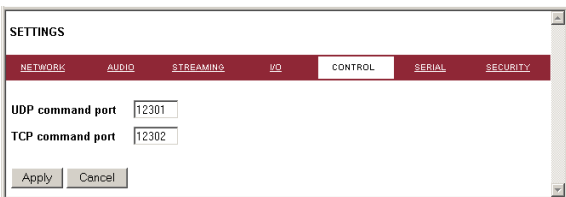
r=x : send command x to the last calling station remotely

r=a.b.c.d:p/x : send command x, using UDP, to the remote IP a.b.c.d on the optional port p. Default if no port is defined is the configured UDP command port.

Example: r=192.168.0.99:12301/c=83 (sets the remote station to talking mode)

7.6 Control settings

These settings adjust the control port properties.



SETTINGS

NETWORK AUDIO STREAMING I/O CONTROL SERIAL SECURITY

UDP command port 12301

TCP command port 12302

Apply Cancel

UDP command port

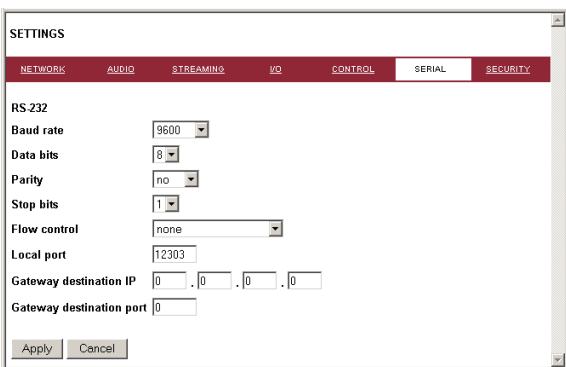
Define the port on which the device will receive commands via UDP. To disable set port to "0".
Default: 12301

TCP command port

Define the port on which the device will receive commands via TCP. To disable set port to "0".
Default: 12302

7.7 Serial settings

These settings adjust the serial port, local port and serial gateway properties.



SETTINGS

NETWORK AUDIO STREAMING I/O CONTROL SERIAL SECURITY

RS-232

Baud rate 9600

Data bits 8

Parity no

Stop bits 1

Flow control none

Local port 12303

Gateway destination IP 0 . 0 . 0 . 0

Gateway destination port 0

Apply Cancel

Baud rate

Select the serial transmission speed (300 to 115200 Baud).
Default: 9600

Data bits

Select 7 or 8 data bits.
Default: 8

Parity

Select no, even or odd parity.
Default: no

Stop bits

Select 1 or 2 stop bits.
Default: 1

Flow control

Select the type of flow control:
none, software (XON/XOFF) or hardware (RTS/CTS).
Default: 9600

Local port

Define the port on which the serial port can be accessed for serial gateway application. Only when Local port is set to "0" the serial port can be used as a command interface.
Default: 12303

Gateway destination IP

To actively establish a "Serial Gateway" select the destination IP address to which the serial data will be transmitted and received from.
Default: 0.0.0.0 (disabled)

Gateway destination port

Select the port to be used when used as a Serial Gateway.
Default: 0 (disabled)

Notes

Both settings, Gateway destination IP and Gateway destination port have to be set to enable the function.

When Serial Gateway is activated the serial port cannot be used as a command interface. This also applies for the device on the other side of the "Serial Gateway".

To establish a "Serial Gateway" between two devices only one device has to be activated. In other words: Only one device will need a Gateway destination IP and Port set. On power up the active device will connect to the selected device and will try to reconnect automatically in case of a lost connection. This allows you to establish a serial connection between the attached devices on each side over LAN or WAN.

7.8 Security settings

These settings can be used to secure the access to the Encoder on several levels. The status is shown next to each password (set or not set). Access is free for levels without a password (default setting).

Level	Password	Status
Telnet/Serial Configuration	<input type="text"/>	not set
Save Configuration	<input type="text"/>	not set
View Configuration	<input type="text"/>	not set
Control/Command	<input type="text"/>	not set
4 (User)	<input type="text"/>	not set
5 (User)	<input type="text"/>	not set
6 (User)	<input type="text"/>	not set

Buttons: Apply, Cancel

Telnet / Serial configuration

Enter up to 7 characters to secure the access to the Telnet and Serial configuration. Without a valid password the network configuration cannot be changed.

Enter 8 characters to erase the current key.

Save configuration

Enter up to 24 characters to secure the saving of the device configuration (Clicking the Apply button). Without a valid password the device configuration cannot be saved!

Enter 25 characters to erase the current key.

Save configuration password usage

When the password is set the user has to type in the password in the "Save Config Password field" before hitting the "Apply" button.

6 (User) not set

Buttons: Apply, Cancel

Save Config Password

Otherwise a warning will be displayed without saving the changes made.

Your are not authorized!

View configuration

Enter up to 24 characters to secure the viewing of the device configuration (Clicking the Config button). Without a valid password the device configuration cannot be viewed!

Enter 25 characters to erase the current key.

View configuration password usage

When the password is set the user clicking on the "Config" link has to type in the password into the password field of the pop up window (the user name does not matter).

Enter Network Password

Please type your user name and password.

Site: 192.168.0.168

Realm:

User Name

Password

Save this password in your password list

Buttons: OK, Cancel

Only one user can log in at a time. Further connections will be refused while one user is logged in.

To log out click on the "Logout" link next to the "HOME" icon in the menu bar.

RTHER Setup V1.4

Buttons: HOME, Logout

Please hit your browser's Reload button if the "Logout" link is not visible while logged in.

Control / Command

Enter up to 24 characters to secure the access to all control and command interfaces (WEB/CGI, Serial, TCP and UDP). Without a valid password the device cannot be controlled. Enter 25 characters to erase the current key.

Note

This security option should be used very carefully and is intended for advanced users only. Since the CGI commands used in the web interface do not make use of passwords, setting this password would disable any control of the Technomad Encoder using a browser.

Level 4 to 6 (User)

Enter up to 24 characters to secure the access to customized web pages in 3 levels. Intended for advanced users only, for details see the Tec hnomad IC Technical Documentation. Without a valid password these user web pages cannot be viewed.

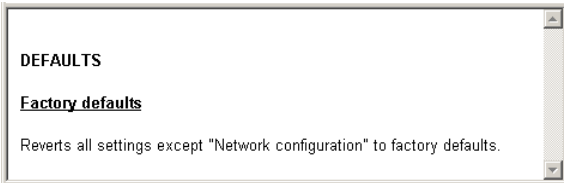
Enter 25 characters to erase the current key.

7.9 Reverting to factory defaults

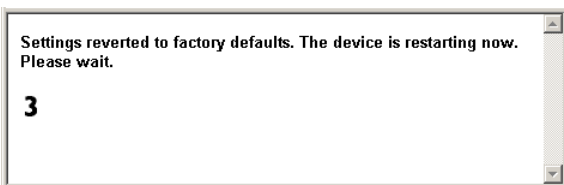
Click on the DEFAULTS button to enter the defaults page.

DEFAULTS

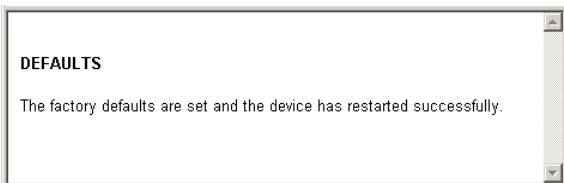
You will see the following screen:



Click on "Factory defaults" to revert all settings except "Network configuration" to factory defaults. While restarting the device the following screen appears showing a number counting down:



Upon start up the following screen appears stating the successful reverting to factory defaults:



Hard default settings

To revert all settings (including the network settings) to factory defaults the Reset button has to be pressed for about 5 seconds while the Technomad Encoder is powered.

7.10 Rebooting the device

Click on the REBOOT button to enter the reboot page.

REBOOT

You will see the following screen:



Click "Reboot the device" to restart the Encoder. While restarting the device the following screen appears showing a number counting down:



Upon start up the following screen appears stating the successful restart:

