



impulse

User Guide

V1.0

About This Manual

This manual describes the detailed installation, setup and operation of the Sencore impulse. Read carefully to make sure all steps are completed properly. For additional support assistance, visit www.sencore.com/support.

Important

To avoid injury or product damage, make sure to review and understand all safety instructions.

Use a quality cabling and make sure the connections are in good operating condition. Use provided power supply, or one with an equivalent rating. Do not open the device as it may result in electrical shock to the user. Specifications and functions may be changed for improvement without advanced notification.

Notices

Trademark Acknowledgments

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Safety Instructions

Respect all warning symbols to avoid personal injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing injury.

Electric Shock Hazard

This equipment meets applicable safety standards. Refer to this equipment's Identification label or contact factory for details about regulatory compliance approvals.



WARNING:

To reduce risk of electric shock,

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times. The protective ground connection, where provided, is essential to safe operation and must be verified before connecting the power supply.

Heed the following safety warnings and guidelines:

- Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
- Only qualified service personnel are allowed to remove chassis covers. Any repairs should be performed by the factory.
- No user-serviceable parts inside. Do not open.

Important Safety Reminders

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this device near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with Sencore's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
- Protect the power cord from being walked on or pinched particularly at wall plugs, convenience receptacles, and the point where they exit from the device.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the device. When a cart is used, use caution when moving the cart-device combination to avoid injury from tipping over.

- Use quality surge suppression device to prevent damage during lightning storms.
- Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, such as damage to power-supply cord, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.



WARNING:

To reduce the risk of fire or electric

Installation Site

When selecting the installation site, comply with the following:

- Protective Ground - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- Environmental Condition - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water.

Installation Requirements

Installation of the equipment must comply with local and national electrical codes.

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1 Overview

1.1 General

Impulse is a single-channel encoder/streamer/web streamer for cost effective audio and video processing and transport. It supports professional encoding and IP streaming for live encoding, uploading, playback, channel insertion, and live broadcasting, AD/local program playback/streaming, remote meetings, digital signage and more.

1.2 Architecture

Front Panel



1. Display screen: This LCD screen displays the management IP address, operational mode, input stream standard, output protocol, running status and etc.
2. Power and status indicator: This LED light is turned on when the Impulse is powered on and changes colors based on operational status.
3. Navigation and menu buttons, for entering setup menu and navigation through front panel display.
4. USB storage input for use with playback and/or recording features

Back Panel



1. DC Input - DC Power connection
2. RJ45- management / IP output connection port (10/100)
3. HDMI OUT- HDMI pass through port

4. SD card slot for use with playback and/or recording features
5. HDMI IN- HDMI input port
6. CVBS/CCIN- closed caption input
7. SDI IN- SDI input port
8. RS232 input – future use for data input/data overlay
9. Audio input – for use with external audio source

2 Installation

2.1 Introduction

This chapter contains the information for technicians installing the equipment.

2.2 Installation Preparation

Before You Start

Make sure that the device is in good condition and that you have the cabling needed to complete the installation.

Unpacking and Inspecting the Housing

As you unpack the unit, inspect it for shipping damage. If you find any damage, contact your dealer or your customer service representative.

2.3 Equipment Wiring and Connection

2.3.1 Power Connection

Use of proper power connection is vital to the safe operation of the device. Only use the supplied power connector or one with equal specifications.

2.3.2 Connection Setup for Web Management

Connect to the device's management port with a CAT5 or better cable and set up a management network with a computer connected to the same network or directly to the impulse.

3 Operation Guide

3.1 Powering Up and Initialization

Connect the supplied transformer to the unit and proper power source. The unit will begin the boot up process which may take more than 1 minute.

3.2 Operating the Front Panel Interface

The Impulse can be controlled using the front panel. The "OK" button responds

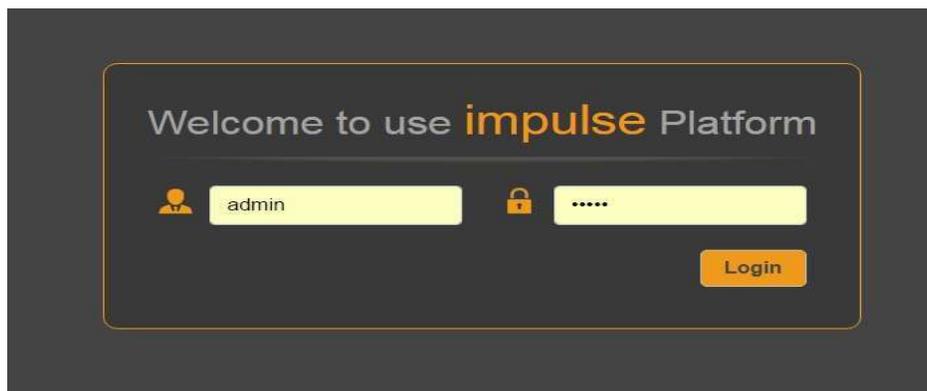
similar to enter or save, the “Menu” button responds similar to a back button. The Left, Right, Up, and Down arrows can be used to navigate selections.

3.3 Operating the Web Interface

3.3.1 Access Interface PC Web-UI

Impulse can be accessed and configured via web UI. The instructions are as follows:

1. Connect the Impulse to a management PC/server directly, or to a network switch.
2. The Impulse default IP address is 192.168.1.100 . Modify the IP address of your management computer or Impulse IP address so they are both in the same subnet range.
3. Open a web browser and enter Impulse’s default IP address - The browser will connect to the device. Once the connection is established successfully, a login page will appear. (default username/password: admin/admin)

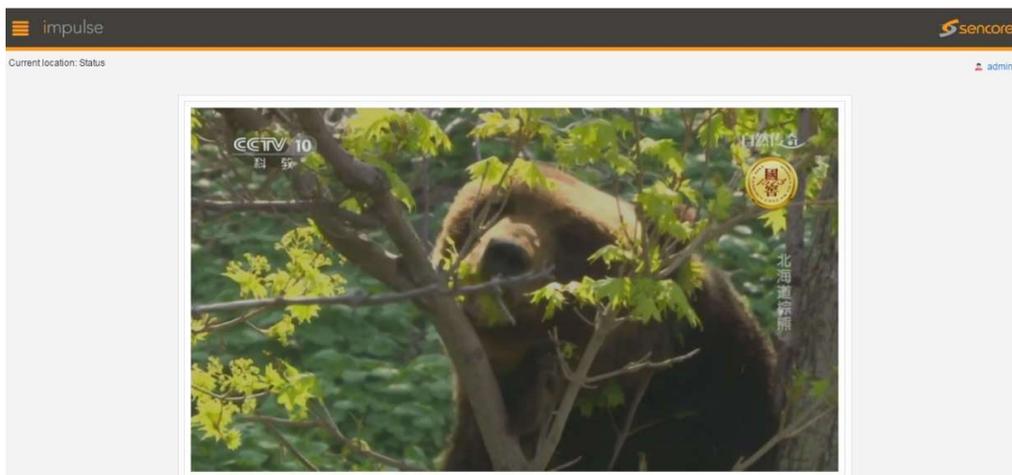


After login, there is an icon in the upper left corner. Click this drop down menu and options will be displayed, including Status, Live Service/Streaming Settings, Record Settings, Play Back and System Settings.



3.3.2 Status

Preview window—This page displays a preview window, showing active video on the input. The video will refresh approximately every 4 seconds, however if video is showing, the live video footage is full frame rate even though the status



page does not show full frame rate.

Live Stream / Record Stream— This section displays Information such as input/output status, resolution, bitrate of live/record stream. Using this page as a reference, the user can make sure everything is operating properly or quickly identify issues with incoming/outgoing content.

Live Stream			
Input Status:	good	Output Status:	good
Input:	HDMI	Output:	rtsp://192.168.1.100:8554/live
Input Resolution:	1080p	Output Resolution:	1080p
Audio Bit Rate:	48kHz	Effective Bit Rate(kbps):	4296

Record Stream			
Input Status:	good	Output Status:	bad
Input:	HDMI	Output File:	record
Input Resolution:	1080p	Output Resolution:	1080p
Audio Bit Rate:	48kHz	Effective Bit Rate(kbps):	4296
Record Time:	00:00:00		
Record Size:	0kbyte		

3.3.3 Broadcast/Live Stream Settings

On this page, there are 2 sections for settings: Basic Settings (quick setup using presets etc.) and Advanced Settings (provides the ability to control low level encoder settings).

General Settings	
Input:	HDMI
Output:	UDP
IP:	227.40.50.60
Port:	1234
Video Profile:	1080p-8000Kbps-192Kbps

Basic Settings:

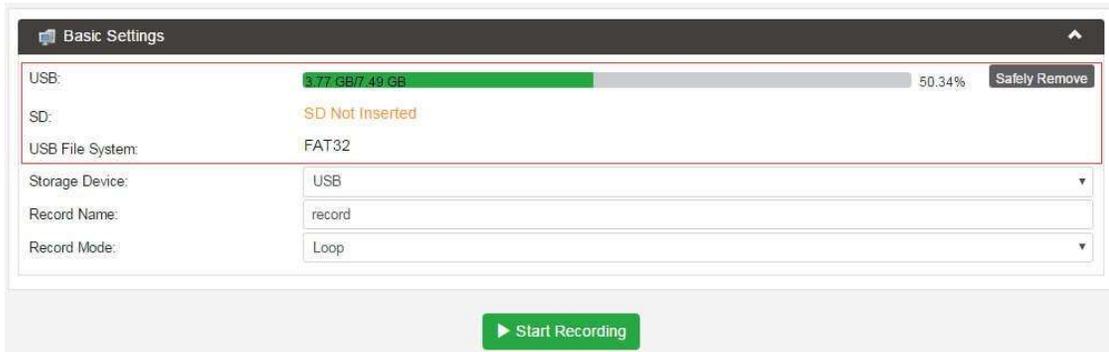
1. Input - selecting HDMI or SDI input source (SDI is an optional input chosen at time of purchase)
2. Mode – provides the user with the ability to select output mode (YouTube for easy steaming configuration) or Manual (for more advanced applications and use of the following protocols UDP/HLS/RTMP/RTSP)
3. Video Profile – quick use presets for common resolution-video bitrate-audio bitrate settings. When selecting “user-defined”, these settings can be configured in the “Advanced Settings” section.

Advanced Settings	
Input	
MIC:	Disable
CC:	Disable
Video	
Video Type:	H264
Video Aspect Ratio:	Automatic
Profile:	Main
Video Resolution:	1920x1080
GOP Size:	30
Video Frame Bitrate(FPS):	30
Video Bit Rate(kbps):	4096
Video Mode:	CBR
Video Min Bit Rate(kbps):	1024
Video Max Bit Rate(kbps):	4096
Audio	
Audio Type:	AAC
Audio Bit Rate(KHz):	48
Audio Bit Rate(kbps):	192

Advanced Settings:

4. Input - Enable or disable MIC/CC input. Enabling the MIC input allows you to use an external audio source (audio mixer etc.) instead of embedded HDMI audio. CC input (if licensed on your hardware) allows you to receive Closed Captions from a CVBS style input. These Closed Captions are then embedded in to the outgoing service.
5. Video - Video Type: H.264 or H.265 (H.265 is a licensable option)
6. Video Aspect Ratio: Automatic, 16x9, 4x3 Profile: High, Main, Baseline
7. Video Resolution:
 - 1920x1080, 1680x1200, 1600x900, 1440x1050, 1440x900, 1360x768,
8. 1024x768, 1024x576, 960x540, 850x480, 800x600, 720x576, 720x540,
9. 720x480, 720x404, 704x576, 640x480, 640x360, 480x270, Automatic
10. GOP Size: 1~61
11. Video Framerate (FPS): 20~60 Video Bitrate (kbps): 500~12000 Video Mode: CBR (Constant Bitrate, VBR (Variable Bitrate)
12. Audio - Audio Type: AAC
13. Audio Sampling Rate(KHz): 48
 - AudioBitRate(kbps): 32, 48, 56, 64, 80, 96, 112, 128, 160, 192, 224, 246, 256, 320, 384, 448, BITRATE_MAX
14. After finishing configuration, click Start Live Stream button to start streaming.

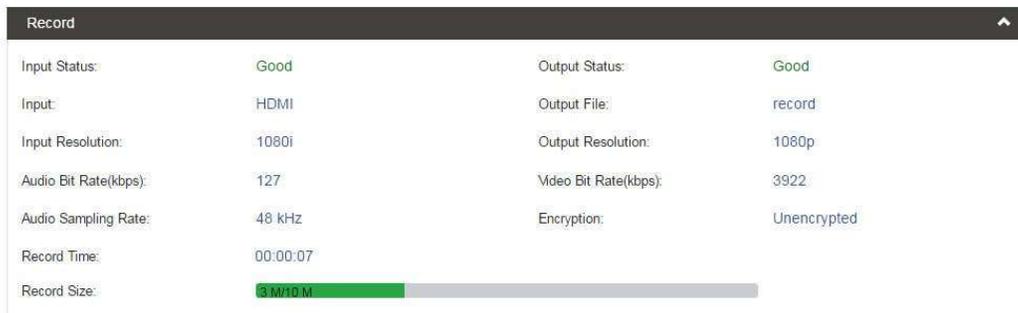
3.3.4 Record Settings



Basic Settings:

1. USB/SD – provides status for installed storage media and file system. Applicable storage device types are USB, or SD card
2. Record Name - Input file name Record Mode: Loop, Time, Size

After finishing configuration, click the “Start Recording” button to start recording. The record status is displayed on Status page.



3.3.5 System Setting

1. Version: Displays the software and hardware version.
2. License Information: Displays the license status of HDCP, H265, CC, SDI.



License Information	
HDCP:	Authorized
H265:	Authorized
CC:	Authorized
SDI:	Authorized

3. Network – The Impuse supports both Static and DHCP mode. The mode and IP address of Impuse can be changed here.

Network	
Network Mode:	Static
IP Address:	192.168.1.100
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.1.1
Dynamic DNS:	Disable
Primary DNS:	0.0.0.0
Secondary DNS:	0.0.0.0

4. Language: Impulse currently supports English and Chinese.

Language :	<div style="border: 1px solid #ccc; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px;">English</div> <div style="background-color: #e0e0e0; padding: 2px;">Chinese</div> <div style="background-color: #a0c4ff; padding: 2px;">English</div> </div>
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5. Upgrade - Click Upload button to select file, then upgrade the software. License: Import or export license.
6. Configuration - Import or export NB200E's configuration file for backing up or restoring a device to previous settings.

System Operation	
Upgrade	
Upgrade:	<input type="text"/> <input type="button" value="Upload"/>
License	
Import License:	<input type="text"/> <input type="button" value="Upload"/>
Export License:	<input type="button" value="Export"/>
Configuration	
Import Config:	<input type="text"/> <input type="button" value="Upload"/>
Export Config:	<input type="button" value="Export"/>

7. Reboot - Click to reboot the Impulse.
8. Factory Settings - Click to restore the unit to factory settings.
9. Log Export - Click to export the unit log file.
10. Log Clear - Click to clear the unit log file.



3.4 YouTube Streaming

The Impulse makes the perfect standalone web-streaming device. Simply hook up an HDMI or SDI input and in a few simple steps, you'll be streaming! Once the unit is configured, you can stream any time without having to re-configure the unit each time you want to stream.

1. Plug in an input (HDMI or SDI) and check that the impulse detects the input using the "Status" page within the device.
2. Using the menu in the web interface, navigate to "Live Service/Streaming Setting"
3. Choose the proper input (HDMI or SDI).
4. Select "Youtube" from the "mode" section.
5. At this time a long grey bar will pop up that says "Authorize Your Impulse"

Live Status: 



6. Set a proper stream "Title" (what you want your Youtube live stream to be called)
7. Select your "Privacy Status" (Public, Private, Unlisted). This status pertains to how Youtube sends out your stream. Public is available to anyone on Youtube, Private will keep your stream isolated to only those with a link, Unlisted is essentially a public stream that is not listed on any channels.
8. Choose your desired "Video Profile" in accordance to the video resolution, bitrate, and audio bitrate you desire. Keep in mind each of these selections is dependent on the quality of your internet connection. If your internet connection is not of good quality, you will want to reduce your resolution and bitrate. Keep in mind that each reduction in bitrate will reduce video quality of your stream.
9. Once all settings are complete, choose "Authorize Your Impulse". This will pop up another window "YouTube Live Authorization". Complete the steps listed here as this tells your YouTube account that you are providing permission for the Impulse to stream using your account. Without completing this step, the Impuse cannot stream.
10. Once you have completed this step, you are ready to start streaming. Choose "Start Streaming". The "Live Status" will turn green when the stream is ready to go! A hyperlink will then show on the screen when it is ready.

