SCP 2100
Signal Collection Platform

OVERVIEW

The future of signal collection is here today! The Sencore SCP 2100 is a cost-effective and easy to deploy unit for acquiring and backhauling nearly any video signals across the internet.

Utilizing the power and exceptional video quality of ASIC-based encoding and transcoding, paired with today's latest internet delivery protocols; the SCP 2100 makes it effortless to acquire feeds that may have previously been too costly or difficult.

Whether it's off-air broadcast feeds, sporting events, public service addresses or anything else you can think of, it's now as easy as the SCP 2100 and an internet connection.

APPLICATIONS

Local Off-air Signal Collection

Gone are the days of deploying racks of equipment to collect and backhaul 8VSB terrestrial signals. With the small form factor SCP 2100 and an internet connection, what was once a large undertaking is now a plug-and-play operation.

Sporting Event Backhaul

Whether doing onsite or remote production, the SCP 2100 can easily receive directly from cameras or production switchers. Perform encoding or transcoding and backhaul over any internet connection with any of today's most popular internet delivery protocols, including Zixi, SRT or RIST.

KEY FEATURES

- Encode SD-SDI, HD-SDI and HDMI inputs
- Video transcoding or rate-shaping of 8VSB/QAM-B*, ASI and MPEG/IP inputs to h.264
- PID-filter or service filter SPTS or MPTS inputs
- Support for all of today's most common internet delivery protocols, including Zixi, SRT and RIST
- Pair with a Sencore DMG 7000 for a low-cost end-to-end backhaul
- Simple and intuitive webUI for configuration and monitoring
- Automation and remote configuration ready
- Small form factor - 1/3rd RU wide and 1RU tall

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SPECIFICATIONS

Signal Collection Platform SCP 2100

Input Interfaces

SD/HD-SDI:	1x 75Ω BNC SDI (shared with ASI) SMPTE 259M SMPTE 292M
Digital Video:	1x HDMI Type A Connector with positive screw retention
Supported Version:	1.4b
Copy Protection:	HDCP Compliant
8VSB/QAM-B:	1x 75Ω F-Type
Frequency Range:	50-1000 MHz
Sensitivity:	-34 to +40 dBmV (A74 Compliant)
8VSB Standard:	ATSC A/53E
8VSB Channel Plans:	Broadcast
QAM Standard*:	ITU Annex B/SCTE DVS-031
QAM Channel Plans*:	FCC, IRC, HRC QAM
Constellations:	QAM64, QAM256
ASI:	1x 75Ω BNC ASI (shared with SDI)
Supported Bitrate:	250 Kbps to 160 Mbps TS
IP:	
Physical Interface:	1x RJ45, 10/100/1000 Auto-Negotiating
Input Format:	UDP or RTP Constant Bitrate SMPTE 2022-2/CoP3 FEC
IP Encapsulation:	1 to 7 TS Packets per IP Packet
Protocols:	Unicast & Multicast
IGMP compatibility:	Version 1, 2 & 3
TS Bitrate:	250 Kbps to 50 Mbps

Output Interfaces

IP:	
Physical Interface:	1x RJ45, 10/100/1000 Auto-Negotiate
Output Format:	UDP or RTP Constant Bitrate SMPTE 2022-2/CoP3 FEC
IP Encapsulation:	1 to 7 TS Packets per IP Packet
Protocols:	Unicast & Multicast Zixi w/ ZEN Master Integration SRT w/ SRT Hub Integration RIST
IGMP compatibility:	Version 1, 2 & 3
TS Bitrate:	250 Kbps to 50 Mbps

Video Processing

Input Codec/Profile:	MPEG-2 up to MP@HL H.264 up to HP@L4.1
Resolutions:	1080p@25, 29.97, 30 1080i@25, 29.97, 30 720p@50, 59.94, 60 576i@25 480i@ 29.97
Bitrate:	0.5 to 15 Mbps
Output Codec/Profile:	H.264 up to HP@L4.1

Audio Processing

Codecs:	Dolby Digital (AC-3) Dolby Digital Plus (E-AC-3) AAC HE-AAC MPEG-1 L2
Number of Services:	2x audio services/PIDs
Ancillary Data Pass-through:	AFD (SMPTE 2016)* Closed Captions (CEA-708) SCTE 35/104*

TS Manipulation*

PID/Service Filtering:	Remove/renumber PIDs and services
Table Regeneration:	PAT, PMT

Management:

Connector:	1x RJ-45 10/100/1000 Auto Negotiating
Protocols:	HTTP(S), SNMP and Web API
User Interfaces:	Full control via web GU Full control via intuitive front panel*
Automation Interfaces:	Full status and control via SNMP ZEN Master Configuration and Control* SRT Hub Configuration and Control* Configurable SNMP traps Web services API Syslog message logging
Firmware Updates:	Via Web GUI

Dimensions/Power

Height:	1 RU, 1.72" (44mm)
Width:	1/3 RU, 5.69" (144.5mm)
Depth:	7.5" (190.5mm)
Power:	100-240 VAC 50/60 Hz
Supplies:	1x AC Internal
Connector:	IEC 320 C14

Environmental Conditions

Operating Temperature:	32° to 122° F (0° to 50° C)
Cooling:	Software regulated fan
Storage Temperature:	-40° to 149° F (-40° to 65° C)
Relative Operating Humidity:	<95% (non-condensing)

Ordering Information

SCP 2111	8VSB, ASI, MPEG/IP Gateway, SDI, HDMI Encode/Transcode
SCP 2110	ASI, MPEG/IP Gateway, SDI, HDMI Encode/Transcode
SCP 2101	8VSB, ASI, MPEG/IP Gateway
SCP 2102	ASI, MPEG/IP Gateway

**Future release*

Internet Distribution Gateway

DMG 7000

Utilizing the latest software-based platform from Sencore, the DMG 7000 is focused on providing a gateway between broadcast MPEG/IP networks and internet-based distribution protocols.

These ever-growing protocols like SRT, Zixi, RIST and HLS allow content providers to use consumer based internet connections to provide reliable, low-cost distribution networks.

No longer is high-cost satellite and fiber links required to backhaul high quality content from remote sites to head-ends or distribute content to regional hubs. Being a software-based, the DMG 7000 can be deployed on COTS hardware in a variety of form factors from mini-PCs to 1RU rack mount servers and virtual environments such as AWS or Google Cloud.

Reduce your CAPEX and OPEX expenditures and utilize the latest technologies in internet distribution to broadcast your content.

Content Distribution over the Internet

Enable low-cost distribution workflows using protocols like SRT and Zixi on the open internet. Reduce OPEX and CAPEX of backhaul or backup networks.

Bridge Between Managed and Unmanaged Networks

Backhaul over the open internet with advanced encapsulation methods. Receive and transmit protocols such as SRT, Zixi and MPEG/IP for broadcast workflows.

Key Features

- Gateway between MPEG/IP and Internet Distribution Protocols
  - · SRT protocol with AES encryption
  - · Zixi protocol with ZEN Master integration
  - · HLS reception in push and pull modes
  - · MPEG/IP RTP/UDP as MPTS or SPTS
- Software deployment on COTS hardware or virtual environments
  - · Mini-PC or 1RU rack mount for any application
  - · Cloud environments like AWS or Google Cloud

Internet Distribution Gateway

DMG 7000

SPECIFICATIONS

Input and Output Options

MPEG/IP Receive and Transmit

Receive

Input Type	UDP, RTP and RTP with extension headers Multicast and unicast CBR and VBR streams SMPTE 2022/CoP3 FEC SMPTE 2022-7 hitless switching
Multicast filtering	Filter based on IP address VLAN tagging IDs
Buffer size	1-4000KB or 1-4000ms
Bitrate range	.25-200 Mb/s
Packets/IP frame	1-7 MPEG packets/IP frame
IGMP compatibility	Version 2 and 3

SRT Receive and Transmit - DMG 70701

Receive

Protocol and IP Range	UDP, unicast
Negotiation modes	Caller, listener, rendezvous
Latency	20-8000ms, user configurable
Bitrate range	0.25-50 Mb/s
Decryption	AES-128, AES-256 10-79 UTF-8 characters
Packets/IP frame	Auto detect, 1-7 MPEG packets/ IP frame

Transmit

Protocol and IP range	UDP, unicast
Negotiation modes	Caller, Listener, Rendezvous
Latency	20-8000ms, user configurable
Bandwidth overhead	0-50% of content bitrate
Bitrate Range	0.25-50Mb/s
Encryption	AES-128, AES-256 10-79 UTF-8 characters
Packets/IP frame	1-7 MPEG packets/IP frame

Zixi Transmit and Receive - DMG 707012

Receive

Protocol and IP range	UDP, unicast
Mode	Connect or pull mode, to Broadcaster
Latency	30-10000ms, user configurable
Bitrate range	1-50 Mb/s
FEC overhead	0-50% of content bitrate
Decryption	AES-128, AES-192, AES-256 10-79 UTF-8 characters
Packets/IP frame	Auto detect

Transmit

Protocol and IP Range	UDP, unicast
Mode	Connect or pull mode, to Broadcaster
Latency	30-10000ms, user configurable
Bandwidth overhead	0-50% of content bitrate
Bitrate range	0.25-50 Mb/s
Encryption	AES-128, AES-256 10-79 UTF-8 characters
Packets/IP frame	1-7 MPEG packets/IP frame

HLS Receive - DMG 70704

Receive

Protocol and IP Range	HTTP, HTTPS, TCP, Unicast
Payload	Chunked transport stream
Modes	Pull and push via WebDAV Push mode supports up to 200GB of content storage

General

Management

Protocols	HTTP, HTTPS, and SNMP
User interfaces	Full control via web GUI
Automation interfaces	Full status and control via SNMP Configurable SNMP traps Restful API Syslog message logging
Firmware updates	via web GUI

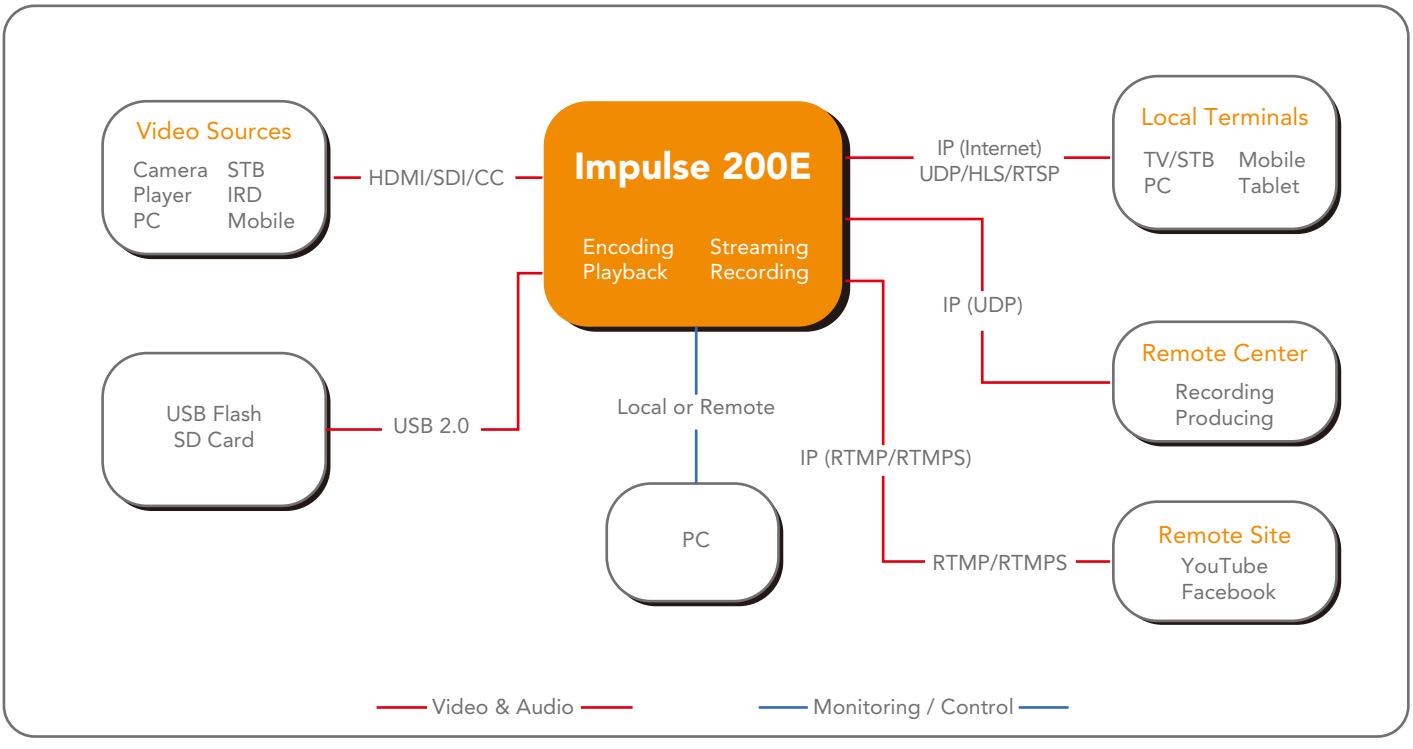
impulse 200E

Network Encoder and Streamer

INTRODUCTION

Impulse 200E is a single-channel encoder/streamer for audio and video processing in a cost-effective way. It supports professional encoding and IP streaming for live encoding & uploading, channel insertion, live broadcasting, AD/local program playback/streaming, remote meeting, digital signage and so on. In addition, Impulse 200E also has the ability of streaming and recording live video in the same time, which is believed to fit into more scenarios in the age of efficiency.

TYPICAL APPLICATION



SPECIFICATIONS

Channels	
Video	1 channel of H.264 or H.265 SD/HD program encoding
Audio	1 pair of MPEG1L2, AAC or AC3 (optional) audio
Physical Interfaces	
Input	1 x HDMI 1 x CVBS (3.5mm) for CC input 1 x SDI (option) 1 x audio interface (3.5mm) 1 x serial port (3.5mm)
Output	1 x RJ45 1 x HDMI
Other I/O	1 x USB 2.0, 1 x SD card standard interface
	LCD x 1, front button x 6, reset button x 1

Encoding	
H.264	BP/MP/HP@L5.1
H.265	MP@L5.1
Resolution	Input: 1920×1080@60p/50p/30p/25p, 1920×1080@60i/50i, 1280×720@60p/50p, 720×576@50i, 720×480@60i and etc. Output: 1920×1080@60p/50p/30p/25p, 1280×720@60p/50p, 704×576@30p, 640×480@30p, 640×360@30p and etc.
Video Bit-rate	1~12Mbps
Closed Caption	Supports CC insertion through SDI or CVBS
Rate Control	CBR
GOP Control	Support
Aspect Ratio	Automatic or manual (4:3 or 16:9)
Audio Profile	MPEG-1 Layer II, AAC (HE/LC), AC3 (optional)
Audio Bit-Rate	MPEG-1 Layer II: 64~384Kbps
	AC-3: 128~448Kbps
	AAC: 32~448Kbps
Audio Mode	Stereo (2.0, including down-mix)
Audio Sampling Rate	48KHz

Streaming	
Protocols	Live: UDP, RTSP, RTMP, RTMPS, HLS
Server Mode	Direct streaming to connected audience
	RJ45, limited accessing numbers
Operating Modes	
Live	Encoding and IP streaming
Recording	Local: USB flash, SD card (FAT32)
	Format: TS, MOV/MP4
	Circling recording (by time or size of file)
Playback	Local: USB flash, SD card (FAT32)
	Format: TS, MOV, MP4
	In-order playlist
	IP output

Management	
Configuration	Web-GUI (easy or advanced mode) or front panel
	Power-on and play (by pre-setup or last configuration)
Status/ Monitoring	LCD display of status
	Remote monitoring of status and current program
Physical & Environment	
Dimensions	144 x118 x 38mm
	0.3kg (0.66lb)
Power	12V DC port x 1
	Max. 9W
Operating Temperature	10~40°C

ORDER INFORMATION

Model	Description
IMPULSE-200E-00	Impulse Platform Network Encoder/Streamer, HDMI/CVBS(CC, license required) input, external audio input, UDP/RTMP/HLS/RTSP output, H.264 video and MPEG1L2/AAC audio encoding.
IMPULSE-200E-01	Impulse Platform Network Encoder/Streamer, SDI/HDMI/CVBS(CC, license required) input, external audio input, UDP/RTMP/HLS/RTSP output, H.264 video and MPEG1L2/AAC audio encoding.

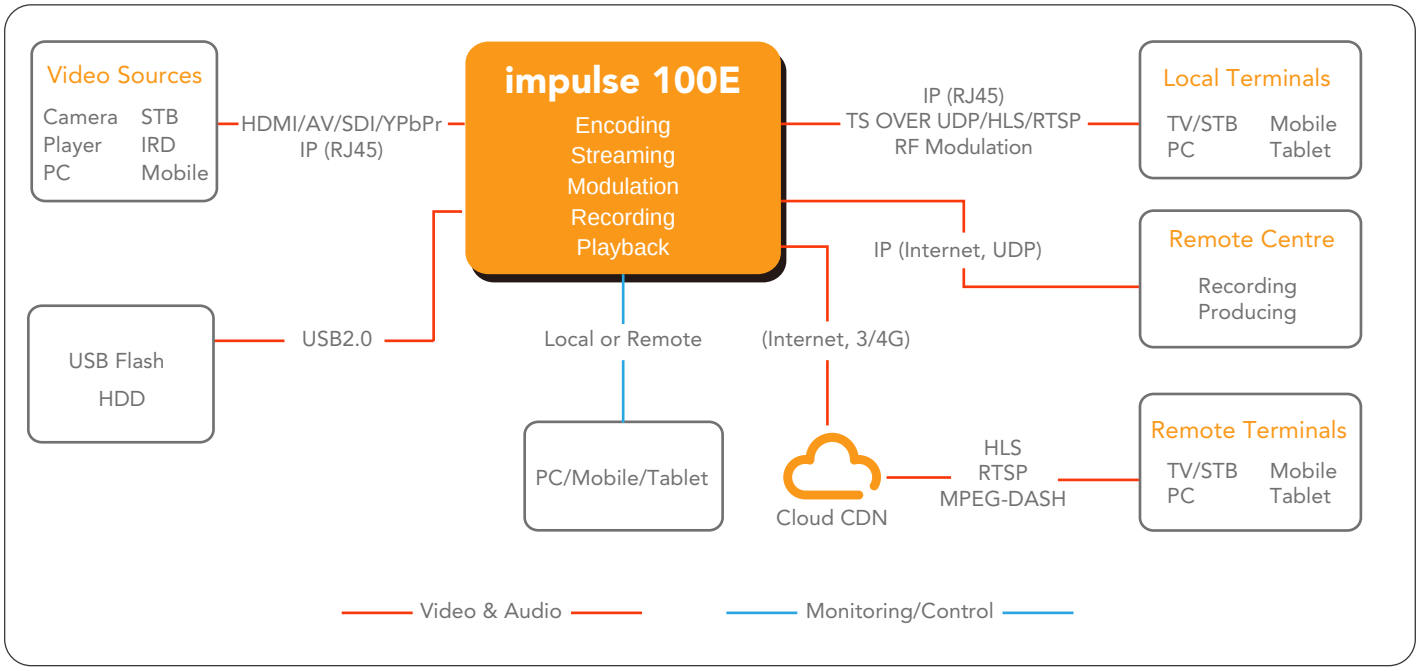
impulse 100E

Network encoder, streamer and modulator

INTRODUCTION

The Impulse 100E is a cost-effective single-channel encoder which can modulate, record and stream. The versatile Impulse platform has several models with QAM, IP and USB options for live encoding, single RF channel insertion, streaming of HLS,RTMP or UDP and local playback and recording.

TYPICAL APPLICATION



TECHNICAL SPECIFICATION

Channels	
Video	1 channel of H.264 or MPEG-2 SD/HD program encoding
Audio	1 pair of MPEG1L2, AAC or AC3 audio

Physical Interfaces	
Input	1 x HDMI (v1.4) 1 x YPbPr (components) 1 x CVBS (3.5mm) 1 x SDI (option of IMPULSE-100E-01/02) 1 x RJ45
Output	1 x RJ45 1 x RF (option of IMPULSE-100E-02)
Other I/O	Embedded Wi-Fi with external antennas (for wireless accessing and data transmission) 1 x USB 2.0 LCD x 1, front button x 5, reset button x 1

Streaming	
Protocols	Live: UDP/RTP, RTSP, RTMP, HLS
Server Mode	Direct streaming to connected audience (Wi-Fi or RJ45, limited accessing numbers*)

Modulation	
Standards	QAM, Annex B
Output Range	66~858 MHz
Constellations	64/256 QAM
Symbol Rate	3~6.952 Ms/s

Operating Modes	
Live	Encoding and IP streaming Encoding and RF output
Recording	Local: HDD, USB flash, storage card reader via USB Format: TS, MOV, MP4 Circling recording (by time or size of file)
Playback	Local: HDD, USB flash, storage card reader via USB In-order IP output

Management	
Configuration	Web-GUI (easy or advanced mode) or front panel Power-on and play (by pre-setup or last configuration)
Status/Monitoring	LCD display of status Remote monitoring of status and current program

Encoding	
H.264/AVC Profile (4:2:0)	HD: MP/HP@L4.0/4.1/4.2 SD: MP/HP@L3.0/3.1/3.2
MPEG-2 Profile (4:2:0)	HD:MP@HL SD: MP@ML
Resolution	HD: 1920 x 1080@25p/30p/50i/60i, 1280 x 720@50p/60p SD: 720 x 576@50i, 720 x 480@60i Sub-SD resolutions
Rescaling	HD to SD down-conversion
Video Bit-Rate	MPEG-2: 0.8 Mbps~14 Mbps H.264: 0.8 Mbps~14 Mbps
Rate Control	CBR
GOP Control	Support
Aspect Ratio	Automatic or manual (4:3 or 16:9)
Audio Profile	MPEG-1 Layer II, AAC (HE/LC), AC3
Audio Bit-Rate	MPEG-1 Layer II: 64-384 Kbps AC-3: 128-448 Kbps AAC: 48-448 Kbps
Audio Mode	Stereo (2.0, including down-mix)
Audio Sampling Rate	48KHz
Audio Volume Leveling	-12~12 dB
Ancillary Data Processing	Closed Caption (CEA 608/708) Teletext (*future option)

Physical & Environment	
Dimensions	144mm x 118mm x 38mm (5.67" x 4.65" x 1.50") 0.3kg (0.66 lb)
Power	12V DC port x 1 Max. 9W (non-modulation mode) Max. 15W (modulation mode)
Operating Temperature	10°C~40°C (-14°F~104°F)

ORDER INFORMATION

Part Number	Description
IMPULSE-100E-00	HDMI In, AV In, YPbPr In, IP Out, supports Closed Captions, MPEG1L2, AAC, AC3 audio
IMPULSE-100E-01	SDI In, HDMI In, AV In, YPbPr In, IP Out, supports Closed Captions, MPEG1L2, AAC, AC3 audio
IMPULSE-100E-02	QAM (Annex-B), SDI In, HDMI In, AV In,YPbPr In, IP Out, supports Closed Captions, MPEG1L2, AAC, AC3 audio