

# ICS-8580

## 2-Channel High-Definition or 4-Channel Standard Definition Video Compression using H.264 Advanced Video Codec (H.264 AVC)

### Features

- 2 channels of HD video up to 1920x1080p/30fps
- 4 channels of standard definition video up to D1 resolution/30fps or equivalent
- Input sources supported: HD-SDI, SMPTE259M/292M, RS170 (NTSC/PAL), HDTV (1080p30), CVBS/Y-C/YPrPb
- ITU-T H.264 AVC Codec (MPEG-4 Part 10)
- 4 channels of mono audio input or 2 channels of stereo input
- 2 channels of audio output
- Display video formats supported: HD-SDI, SMPTE259M/292M, SDTV, and HDTV CVBS/Y-C/YPrPb formats
- Windows®, VxWorks®, Linux® software API and device driver support
- Video client/server application available, Local file archive
- Video compression SDK/API for fast integration into enterprise applications
- Direct Ethernet output from XMC

The ICS-8580 builds on our strong base of installed video compression and transmission solutions. Designed to provide market-leading video compression and transmission technology for standard-definition or high-definition video sources, it provides unsurpassed video capture and compression capability on a single XMC site.

The ICS-8580 provides input support for HD/ED/SD analog input signals, including sync on green modes, and also digital input formats such as HD-SDI up to a maximum resolution of 1920x1080 pixels at 30 frames/sec. An Altera Arria II GX FPGA combined with TI DSP signal processing provide unparalleled compute power in a video XMC platform.

Two TI TMS320DM6467 DSPs provide processing capability to achieve 2 streams of up to 1080p encoding in H.264 AVC. Up to 4 streams of SD input data can be compressed in parallel. The encoded bitstream can be accessed via Gigabit Ethernet RTP/UDP packets.

High-speed ADC devices provide input digitization of the various supported analog video formats. The FPGA controls data capture and routing and can be used in a variety of ways. The TI DSP co-processors

provide efficient and streamlined video data processing. The standard out-of-the box application will supply H.264 video compression and transmission using an Ethernet connection from the XMC. The system is flexible enough that, with minimal modification, it can provide Ethernet output from the host PC, support 2x 1080i/p30 streams, or 4x SD video streams at full frame rates and resolutions. When necessary, the ICS-8580 can be loaded with custom FPGA and DSP code to perform a broad range video processing functions on the video input streams.

Data input and output connectivity is available using a carrier card or via rear I/O. Analog or digital input data can be supported through the rear I/O connectors.

Up to 768 MB of DDR2 SDRAM is supplied on-board. The FPGA has 256 MB and each DSP device has 256 MB.

The ICS-8580 can be used on any carrier card that provides an XMC interface. In order to fully utilize the rear I/O capabilities, appropriate carrier card and backplane routing will be necessary with consideration for analog signal integrity, and in compliance with VITA 46.9 standard.



# ICS-8580 2-Channel High-Definition or 4-Channel Standard Definition using H.264 Advanced Video Codec (H.264 AVC)

## Specifications

### Video Input

- 4 input ports: RS-170 composite PAL/NTSC/SECAM OR
- 2 input ports: RS-170 component, HD-SDI, HD component, 720p/1080p30

### Video Output

- 1 output, any format up to 1080p30 and
- 1 output, HD-SDI down to SD-SDI, SMPTE 259M/292M

### General

- OpenVPX compatible
- Windows, VxWorks, Linux software application, API, and driver support
- User I/O on XMC P16 per VITA 46.9 standard

### Onboard Resources

- Altera Arria II GX FPGA
- Two Texas Instruments TMS320DM6467 DSP devices
- 768 MB of DDR2 SDRAM in 3 banks

### I/O Specifications

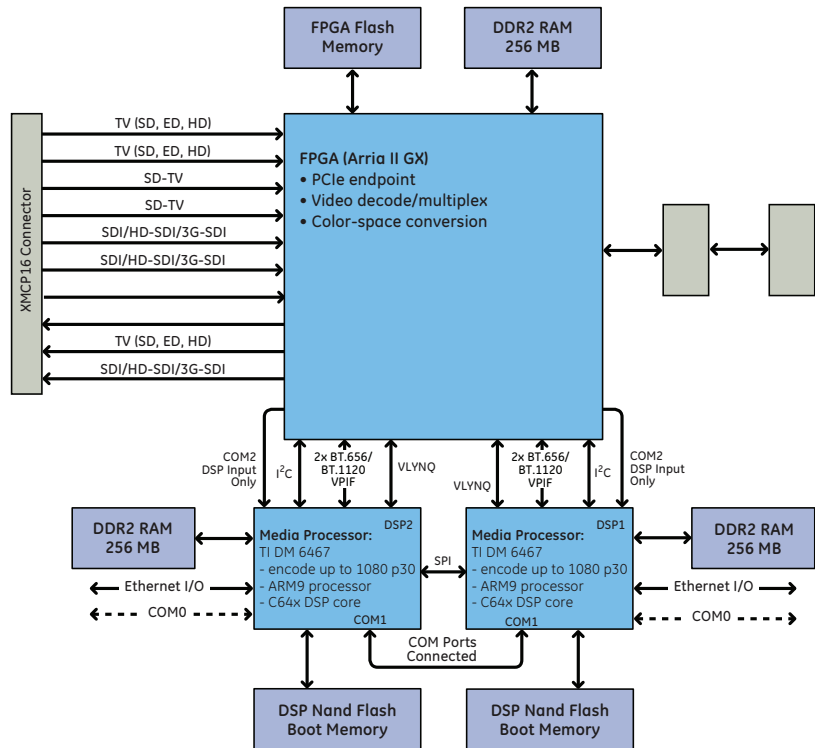
- XMC P16 connector for User IO, allocated for video input/output usage, Ethernet and Serial I/O

### Environmental

- Operating temperature, -40°C to +85°C
- Storage temperature, -50°C to +100°C
- 95% non-condensing humidity
- Required cooling: available conduction-cooled or convection-cooled at 200 LFM

A System Reference Platform is available upon request, including an SBC, an XMC with front I/O connectivity and an ICS-8580 with all associated software.

## Block Diagram



## Ordering Information

ICS-8580A-x00	Level X, 2 streams of H.264 compression up to 1080p30
ICS-7006A-100	Compatible 3U VPX XMC carrier card
ICS-8580A-RTM-100	Rear-transition module to support ICS-8580 I/O to 3u VPX
ICS-7005A-100	PCIe slot card XMC carrier with integrated DVI/RGB/TV/SDI connectors routed for ICS-8580
ICS-8580-SDK-LX	Linux SDK w/source and license (per chassis)
ICS-8580-SDK-WIN	Windows SDK w/source and license (per chassis)
ICS-8580-EDK-000	FPGA and embedded TI media processor software binaries (one-time purchase)
ICS-8580A-CKIT	Set of video and console cable to use with ICS-7005A and/or ICS-8580A-RTM

**NOTE:** An SDK is not required to use http access for configuration and control

## About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit [www.ge-ip.com](http://www.ge-ip.com).

## GE Intelligent Platforms Contact Information

Americas: **1 800 433 2682** or **1 434 978 5100**

Global regional phone numbers are listed by location on our web site at [www.ge-ip.com/contact](http://www.ge-ip.com/contact)

[www.ge-ip.com/sensorprocessing](http://www.ge-ip.com/sensorprocessing)

