

## SOC MPEG Codec Chipset

### Datasheet (Chip Selection Guide)

System-On-Chip (SOC) Technologies  
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## 1. Product Overview

The SOC offers all of its MPEG Codecs (encoders, decoders, and transcoders) in the form of chipset, which are pre-configured “ASICs” that can be placed on user PCBs for video compression and decompression according to MPEG standards (H.265, H.264, and MPEG-2). The SOC MPEG codec chipsets can be video only or both video and audio with AAC, MPEG2 Layer-2, and MP3 all supported. Fig. 1 and Fig. 2 show the images of encoder and decoder chipsets.

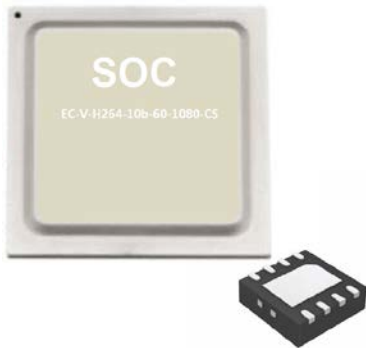


Fig. 1 The SOC Encoder chipset



Fig. 2 The SOC decoder chipset

The codec chipsets are available for the following categories:

1. H.265 video/audio encoders
2. H.264 video/audio encoders;
3. H.264 video/audio decoders;
4. MPEG-2 video/audio encoders;
5. MPEG-2 video/audio decoders;
6. H.264-to-H.265 transcoders;
7. MPEG2-to-H.264 video/audio transcoders;
8. H.264-to-MPEG2 video/audio transcoders;
9. Multiple-channel encoder and/or encoders/decoders;
10. Multiple-standard encoder and/or encoders/decoders.

*(Note: H.265 video/audio decoder chipsets will be available in the near future).*

In each of the above categories, a series of standard chips are offered for different applications, from lower-end to high-end. Specifications for standard chip, such as resolution and frame rate, are provided in the following section.

Technical details for the encoders, decoders, and transcoders are provided in the Datasheets of the IP cores that are used to configure the chips:

- [Datasheet – H.265 Encoder IP Cores](#)
- [Datasheet – H.264 Encoder IP Cores](#)
- [Datasheet – H.264 Decoder IP Cores](#)
- [Datasheet – MPEG-2 Encoder IP Cores](#)
- [Datasheet – MPEG-2 Decoder IP Cores](#)
- [Datasheet – H.265-to-H.264 Transcoder IP Cores](#)
- [Datasheet – MPEG-2-to-H.264 Transcoder IP Cores](#)
- [Datasheet – H.264-to-MPEG-2 Transcoder IP Cores](#)

User interface for controlling the operations of the chips are provided by the API interface manual:

- [API Manual - H265 Decoder chipsets](#)
- [API Manual - H264 Encoder chipsets](#)
- [API Manual - H264 Decoder chipsets](#)
- [API Manual – MPEG-2 Encoder chipsets](#)
- [API Manual – MPEG-2 Decoder chipsets](#)

Information for integrating the chips on to user PCBs are provided in the Integration Sheets:

- [Integration Sheet - Decoder chips](#)
- [Integration Sheet - Encoder chips](#)
- [Integration Sheet – Transcoder chips](#)

SOC also provides PCB design references through its licensing programs. Contact SOC sales for details: [sales@soctechnologies.com](mailto:sales@soctechnologies.com)

## 2. Factory Standard Codec Chipsets

### 2.1 H.265 Encoder Chipsets

The H.265 encoder chipsets are based on the SOC H.265 encoder IP cores of different configurations. Table-1 lists the product codes of the factory standard H.265 video encoder (video only) chips, along with the specifications for each chip. Table-2 lists the video/audio encoder chipsets. Customers can order the H.265 encoder chipsets using the product code, according to the specifications required by the application.

**Table-1: H.265 Video Encoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
EC-V-H265-8b-30-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
EC-V-H265-10b-30-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	no
EC-V-H265-10b-30-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 12 bits	up to 30fps	no
EC-V-H265-8b-60-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
EC-V-H265-10b-60-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	no
EC-V-H265-10b-60-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 12 bits	up to 60fps	no
EC-V-H265-8b-30-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	8 bits	up to 30fps	no
EC-V-H265-10b-30-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 10 bits	up to 30fps	no
EC-V-H265-10b-30-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 12 bits	up to 30fps	no
EC-V-H265-8b-60-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	8 bits	up to 60fps	no
EC-V-H265-10b-60-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 10 bits	up to 60fps	no
EC-V-H265-10b-60-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 12bits	up to 60fps	no

**Note: H.265 decoder chipsets will be available in the near future.**

**Table-2: H.265 Video&Audio Encoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
EC-VA-H265-8b-30-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC or MPEG2 Layer-2
EC-VA-H265-10b-30-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	AAC or MPEG2 Layer-2
EC-VA-H265-12b-30-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 12 bits	up to 30fps	AAC or MPEG2 Layer-2
EC-VA-H265-8b-60-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC or MPEG2 Layer-2
EC-VA-H265-10b-60-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	AAC or MPEG2 Layer-2
EC-VA-H265-12b-60-1080-CS	H.265	Main 4:2:2 12	up to 1080i/p	4:2:0/4:2:2	up to 12 bits	up to 60fps	AAC or MPEG2 Layer-2
EC-VA-H265-8b-30-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	8 bits	up to 30fps	AAC or MPEG2 Layer-2
EC-VA-H265-10b-30-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 10 bits	up to 30fps	AAC or MPEG2 Layer-2
EC-VA-H265-12b-30-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 12 bits	up to 30fps	AAC or MPEG2 Layer-2
EC-VA-H265-8b-60-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	8 bits	up to 60fps	AAC or MPEG2 Layer-2
EC-VA-H265-10b-60-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 10 bits	up to 60fps	AAC or MPEG2 Layer-2
EC-VA-H265-12b-60-4k-CS	H.265	Main 4:2:2 12	4k/UHD	4:2:0/4:2:2	up to 12bits	up to 60fps	AAC or MPEG2 Layer-2

## 2.2 H.264 Encoder Chipsets

The H.264 encoder chipsets are based on the SOC H.264 encoder IP cores of different specifications. Table-3 lists the product code of the factory standard video encoder chips (video only), along with the specifications for each chip. Table-4 lists the video/audio encoder chips (both video and audio). Customers can order the encoder chipset using the product code, according to the specifications required by the application.

**Table-3: H.264 Video Encoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
EC-V-H264-8b-30-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
EC-V-H264-8b-60-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
EC-V-H264-8b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
EC-V-H264-10b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	no
EC-V-H264-8b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
EC-V-H264-10b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	no
EC-V-H264-8b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	up to 8 bits	up to 30fps	no
EC-V-H264-10b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	up to 10 bits	up to 30fps	no

**Table-4: H.264 Video&Audio Encoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
EC-VA-H264-8b-30-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-H264-8b-60-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
EC-VA-H264-8b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-H264-10b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-H264-8b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
EC-VA-H264-10b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	AAC/MPEG2 L-2
EC-VA-H264-8b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-H264-10b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	10 bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-H264-8b-60-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
EC-VA-H264-10b-60-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	10 bits	up to 60fps	AAC/MPEG2 L-2

### 2.3 H.264 Decoder Chipsets

Table-5 lists the factory standard H.264 video decoder chipsets (video only), along with the product code and specifications. Table-6 lists the factory standard H.264 video and audio decoder chipsets, product code, and specifications.

**Table-5: H.264 Video Decoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
DC-V-H264-8b-30-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
DC-V-H264-8b-60-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
DC-V-H264-8b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
DC-V-H264-10b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	no
DC-V-H264-8b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
DC-V-H264-10b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	no
DC-V-H264-8b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	8 bits	up to 30fps	no
DC-V-H264-10b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	10 bits	up to 30fps	no
DC-V-H264-8b-60-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	8 bits	up to 60fps	no
DC-V-H264-10b-60-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	10 bits	up to 60fps	no

**Table-6: H.264 Video&Audio Decoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
DC-VA-H264-8b-30-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-H264-8b-60-720-CS	H.264	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
DC-VA-H264-8b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-H264-10b-30-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-H264-8b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
DC-VA-H264-10b-60-1080-CS	H.264	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	AAC/MPEG2 L-2
DC-VA-H264-8b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-H264-10b-30-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	10 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-H264-8b-60-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
DC-VA-H264-10b-60-4k-CS	H.264	High	4kx2k	4:2:0/4:2:2	10 bits	up to 60fps	AAC/MPEG2 L-2 L

## 2.4 MPEG-2 Encoder Chipsets

Table-7 lists the standard MPEG-2 video encoder chipsets. Table-8 lists the MPEG-2 video/audio encoder chipsets. The 10 bit precision and 60 frames/second chipsets are offered as extensions of MPEG-2 standard.

**Table-7: MPEG-2 Video Encoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
EC-V-MPEG2-8b-30-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
EC-V-MPEG2-8b-60-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
EC-V-MPEG2-8b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
EC-V-MPEG2-10b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	no
EC-V-MPEG2-8b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
EC-V-MPEG2-10b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	no

**Table-8: MPEG-2 Video&Audio Encoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
EC-VA-MPEG2-8b-30-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-MPEG2-8b-60-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
EC-VA-MPEG2-8b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-MPEG2-10b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10bits	up to 30fps	AAC/MPEG2 L-2
EC-VA-MPEG2-8b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
EC-VA-MPEG2-10b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	AAC/MPEG2 L-2

## 2.5 MPEG-2 Decoder Chipsets

Table-9 lists the standard MPEG-2 video decoder chipsets. Table-10 lists the MPEG-2 video/audio decoder chipsets. The 10 bit precision and 60 frames/second chipsets are offered as extensions of MPEG-2 standard.

**Table-9: MPEG-2 Video Decoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
DC-V-MPEG2-8b-30-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
DC-V-MPEG2-8b-60-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
DC-V-MPEG2-8b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	no
DC-V-MPEG2-10b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	no
DC-V-MPEG2-8b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	no
DC-V-MPEG2-10b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	no

**Table-10: MPEG-2 Video&Audio Decoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Frame Rate	Audio
DC-VA-MPEG2-8b-30-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-MPEG2-8b-60-720-CS	MPEG-2	up to High	up to 720i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
DC-VA-MPEG2-8b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-MPEG2-10b-30-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 30fps	AAC/MPEG2 L-2
DC-VA-MPEG2-8b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
DC-VA-MPEG2-10b-60-1080-CS	MPEG-2	up to High	up to 1080i/p	4:2:0/4:2:2	up to 10 bits	up to 60fps	AAC/MPEG2 L-2

## 2.6 H.264-to-H.265 Transcoder Chipsets

Table-11 lists the standard H.264-to-H.265 video transcoder chipsets. Table-12 lists the H.264-to-H.265 video/audio transcoder chipsets.

**Table-11: H.264-to-H.265 Video Transcoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Fame Rate	Audio
TC-V-H.264-to-H.265-8b-30-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	8 bits	up to 30fps	no
TC-V-H.264-to-H.265-10b-30-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	10 bits	up to 30fps	no
TC-V- H.264-to-H.265-8b-60-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	8 bits	up to 60fps	no
TC-V- H.264-to-H.265-10b-60-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	10 bits	up to 60fps	no
TC-V- H.264-to-H.265-8b-30-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	8 bits	up to 30fps	no
TC-V- H.264-to-H.265-10b-30-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	10 bits	up to 30fps	no
TC-V- H.264-to-H.265-8b-60-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	8 bits	up to 60fps	no
TC-V- H.264-to-H.265-10b-60-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	10 bits	up to 60fps	no

**Table-12: H.264-to-H.265 Video & Audio Transcoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Fame Rate	Audio
TC-V-H.264-to-H.265-8b-30-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
TC-V-H.264-to-H.265-10b-30-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	10 bits	up to 30fps	AAC/MPEG2 L-2
TC-V- H.264-to-H.265-8b-60-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
TC-V- H.264-to-H.265-10b-60-720-CS	H.265	Main 4:2:2	up to 720i/p	up to 4:2:2	10 bits	up to 60fps	AAC/MPEG2 L-2
TC-V- H.264-to-H.265-8b-30-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	8 bits	up to 30fps	AAC/MPEG2 L-2
TC-V- H.264-to-H.265-10b-30-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	10 bits	up to 30fps	AAC/MPEG2 L-2
TC-V- H.264-to-H.265-8b-60-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	8 bits	up to 60fps	AAC/MPEG2 L-2
TC-V- H.264-to-H.265-10b-60-1080-CS	H.265	Main 4:2:2	up to 1080i/p	up to 4:2:2	10 bits	up to 60fps	AAC/MPEG2 L-2

## 2.7 H.264-to-MPEG2 Transcoder Chipsets

Table-13 lists the standard H.264-to-MPEG2 video transcoder Chipsets. Table-14 lists the H.264-to-MPEG2 video/audio transcoder chipsets. The 60frames/second chipsets are offered as extensions of MPEG-2 standard.

**Table-13: H.264-to-MPEG2 Video Transcoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Fame Rate	Audio
TC-V-H.264-to-MPEG2-8b-30-720-CS	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 30fps	no
TC-V- H.264-to-MPEG2-8b-60-720-CS	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 60fps	no
TC-V- H.264-to-MPEG2-8b-30-1080-CS	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 30fps	no
TC-V- H.264-to-MPEG2-8b-60-1080-CS	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 60fps	no

**Table-14: H.264-to-MPEG2 Video&Audio Transcoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Fame Rate	Audio
TC-VA- H.264-to -MPEG2-8b-30-720-CS	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 30fps	AAC/MPEG2-L2
TC-VA- H.264-to -MPEG2-8b-60-720-CS	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 60fps	AAC/MPEG2-L2
TC-VA- H.264-to -MPEG2-8b-30-1080-CS	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 30fps	AAC/MPEG2-L2
TC-VA- H.264-to -MPEG2-8b-60-1080-CS	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 60fps	AAC/MPEG2-L2

## 2.8 MPEG2-to-H.264 Transcoder Chipsets

Table-15 lists the standard MPEG2-to-H.264 video transcoder chipsets, and Table-16 lists the MPEG2-to-H.264 video/audio transcoder chipsets. The 60frames/second chipsets are offered as extensions of MPEG-2 standard.

**Table-15: MPEG2-to-H.264 Video Transcoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Fame Rate	Audio
TC-V-MPEG2-to-H.264-8b-30-720-CS	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 30fps	no
TC-V-MPEG2-to-H.264-8b-60-720-CS	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 60fps	no
TC-V-MPEG2-to-H.264-8b-30-1080-CS	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 30fps	no
TC-V-MPEG2-to-H.264-8b-60-1080-CS	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 60fps	no

**Table-16: MPEG2-to-H.264 Video&Audio Transcoder Chipsets:**

Product #	Specifications						
	Standard	Profile	Resolution	Chroma	Precision	Fame Rate	Audio
TC-VA-MPEG2-to-H.264-8b-30-720-M	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 30fps	MPEG2-L2/AAC
TC-VA-MPEG2-to-H.264-8b-60-720-M	MPEG2	High	up to 720i/p	up to 4:2:2	8 bits	up to 60fps	MPEG2-L2/AAC
TC-VA-MPEG2-to-H.264-8b-30-1080-M	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 30fps	MPEG2-L2/AAC
TC-VA-MPEG2-to-H.264-8b-60-1080-M	MPEG2	High	up to 1080i/p	up to 4:2:2	8 bits	up to 60fps	MPEG2-L2/AAC



### 3. Non-Standard Codec Chipsets

The previous section provides the information on SOC's factory standard MPEG codec chipsets. Customers can order chipsets based on the specific requirements (non-standard chipsets). There is a Minimum Order Quantity (MOQ) required for customized configurations. Contact SOC sales [sale@soctechnologies.com](mailto:sale@soctechnologies.com) for information.

### 4. Connecting the Codec chipsets to a User PCB

Pin assignments for each chipset are detailed in Pin Assignment Sheet of the codec chipsets. Please refer to the following documents:

- [Pin Assignment Sheet - Decoder Chipsets](#)
- [Pin Assignment Sheet - Encoder Chipsets](#)
- [Pin Assignment Sheet – Transcoder Chipsets](#)

### 6. Evaluation Kits

SOC offers two evaluation kits for evaluating the codec chipsets (or modules or IP cores). The evaluation kits can also be used as product development platforms.

The evaluation kits are:

1. FMC-MCM-1000, Fig. 5 and 6;
2. VTR-2000, Fig. 7 and 8.

Refer to the User Guides of FMC-MCM-2000 and VTR-1000 for details.

- [User Guide – FMC-MCM-1000](#)
- [User Guide - VTR-2000](#)

For evaluation uses, SOC pre-loads the firmware/software and I/O drivers of the FMC-MCM-1000 and VTR-2000, which makes the kits “plug-and-play”. Evaluation Instruction Manual is included in the delivery package.

For product development purposes, the IP cores ( “netlist” format) and the I/O driver executable/source codes are available for licensing. This allows the user to integrate the IP cores and I/O codes into the product designs.

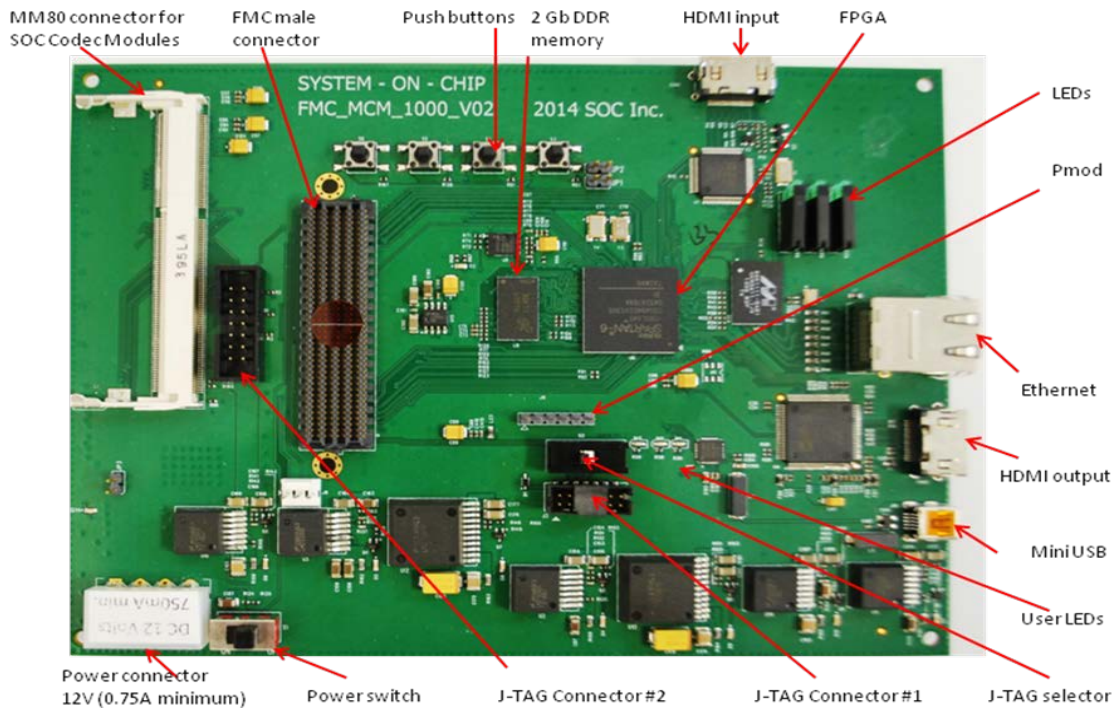


Fig. 5 FMC-MCM-1000 evaluation board (Top view)

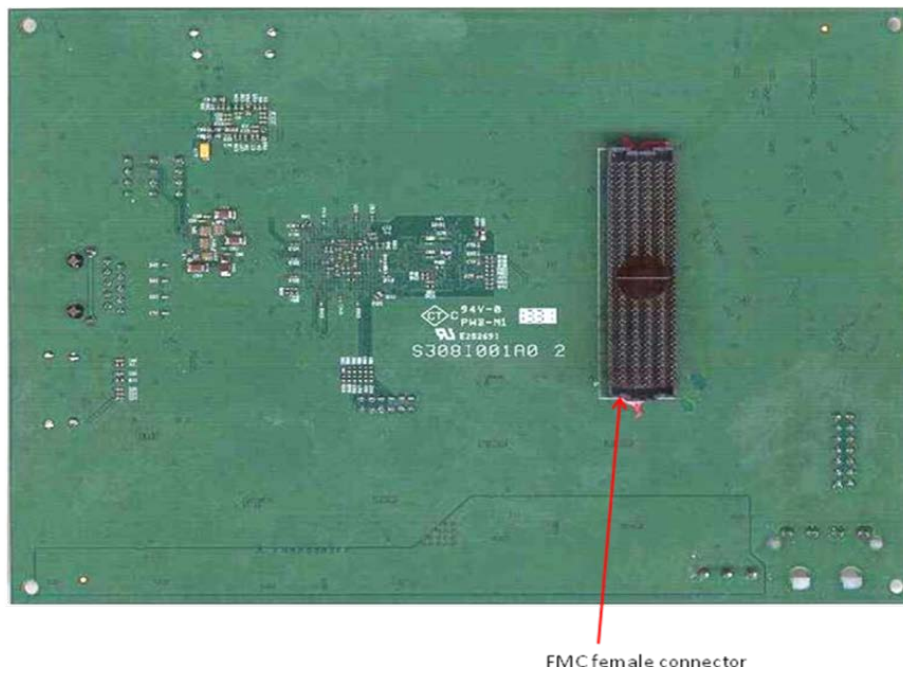


Fig. 6 FMC-MCM-1000 evaluation board (bottom view)

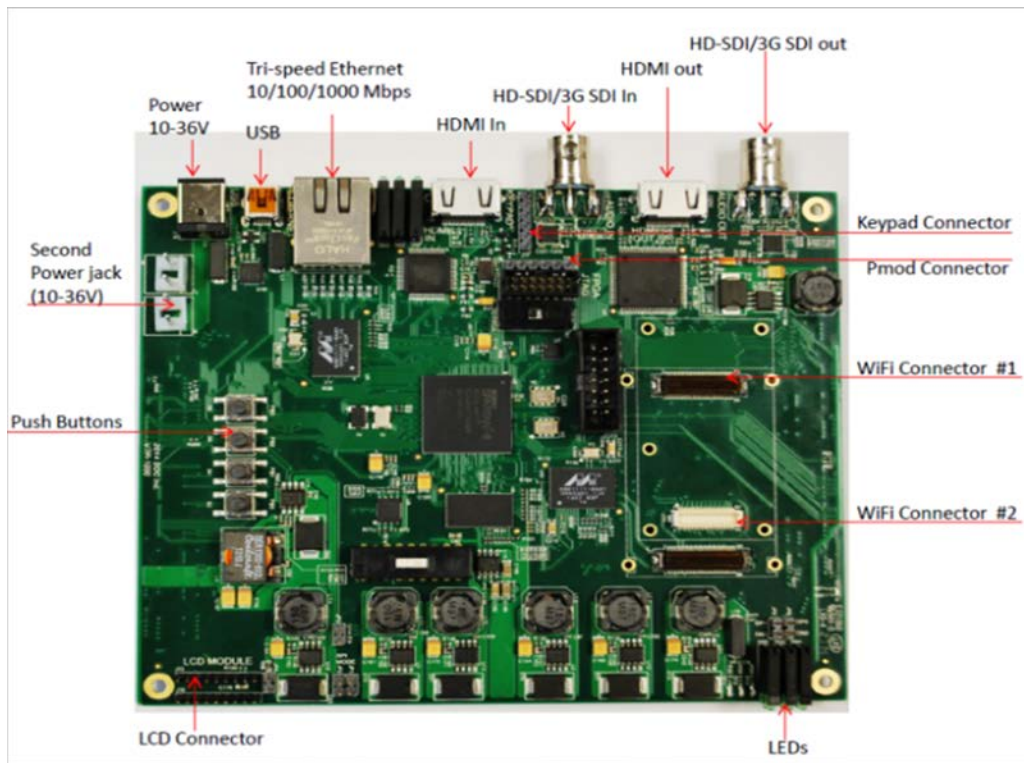


Fig. 7 VTR-2000 evaluation board (Top view)

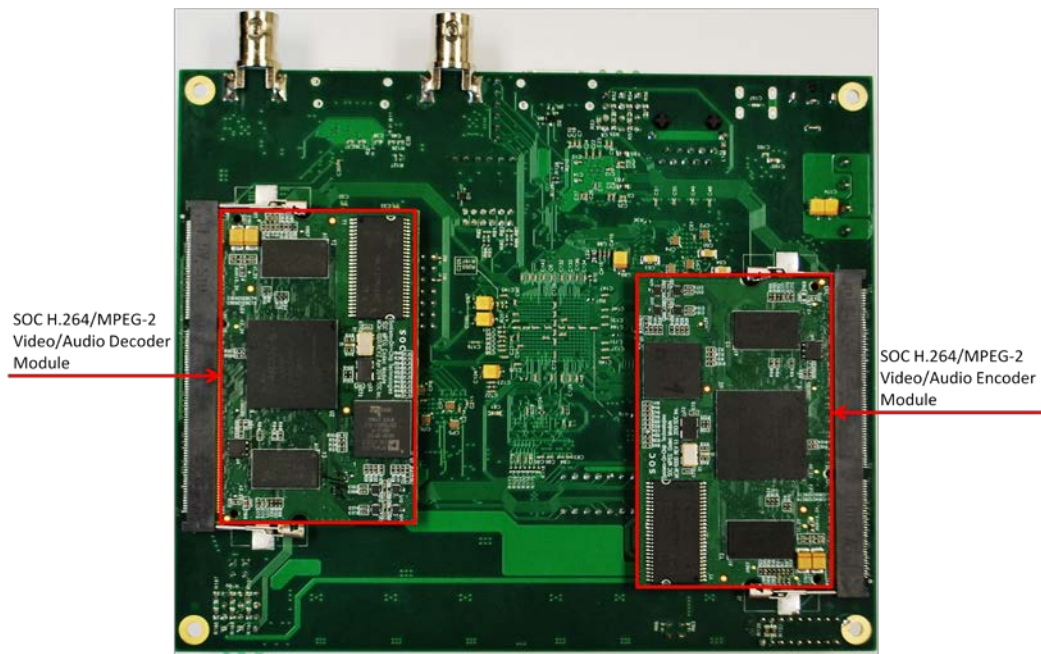


Fig. 8 VTR-2000 evaluation board (Bottom view)

## 7. Ordering Information

Fig. 9 shows the product code naming convention for the SOC MPEG codec chipsets, modules, and IP cores. Users can order the standard configurations listed in Tables 1-16 in Section 2. Non-standard codec chipsets can be ordered following the same naming format (minimum order quantity is required for non-standard chipsets).

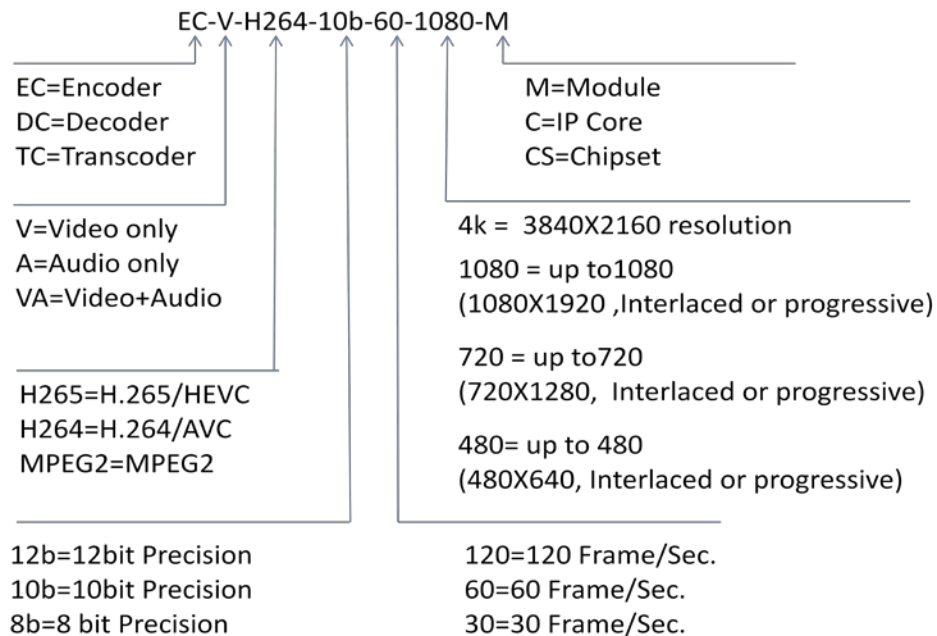


Fig. 9 SOC MPEG codec (IP cores, modules, and Chipset) product code naming convention

## 8. Contact Information

Please Contact SOC head office or distributor for product details or to place an order.

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