FE7.3 – *Revision 1.0*

USB 2.0 4-CH 960H VIDEO AND 4-CH AUDIO UVC+UAC ADAPTER

Data Sheet

INTRODUCTION

The FE7.3 is a USB 2.0 based Video and Audio adapter controller. It is capable of channeling up to 4 video input streams and 4 audio input streams through USB bus to the system. The FE7.3 is designed for home or site security, entertainment, automobile's surround view, and any other applications which require multiple video and audio inputs. The FE7.3 has two *BT.656* interfaces for video input, and one *I2S* for audio input. Both the BT.656 interfaces and I2S interface are capable of operating in various clock rates for multiple video and audio inputs. With its built-in Time Domain De-Multiplexer, FE7.3 can convey maximum of 4 video streams and 4 audio streams to the host.

The software interface to the host is compliant with *USB Video Class* (*UVC*) *Revision 1.0*, and *USB Audio Class* (*UAC*) *Revision 1.0*. For basic operation, FE7.3 could work with the out-of-the-box drivers of most major operating systems, such as Microsoft Windows, Linux, and MacOS. However, for higher definition video source, such as *960H* (*WD1*) and *BT.1120*, non-realtime video transporting, and low-level hardware control,

presently, software package such as DirectShow filter and DLL are provided for independent application developers.

To achieve maximum flexibility in supporting various video decoder or other types of video input source, FE7.3 can use external EEPROM through *I2C* interface to store application specific information that is needed during hardware initialization stages. However, this EEPROM can be omitted if application specific software is provided. In this case, the hardware initialization can be performed by the software through the standard *Extension Unit* of UVC.

The FE7.3 is designed to minimize the implementation cost and take most benefit of current day high performance System-On-Chip. Therefore, with built-in image down-scaler for each video channel, no external memory and video multiplexer are required, and only raw data is transferred over the USB bus.

FEATURES

- Fully compliant with Universal Serial Bus Specification Revision 2.0 (USB 2.0)
  - □ Compliant with UVC 1.0
  - □ Compliant with UAC 1.0
  - □ VID/PID/REV configurable
- Integrated USB 2.0 Transceivers
- Integrated 5V to 3.3V and 1.8V regulators
- Integrated Power-On-Reset
- Up to 4 video channels and 4 audio channels can be captured simultaneously
  - □ Video format: YUY2, resolution programmable
  - □ Audio format: 16-bit 16 kHz PCM
- Support realtime / non-realtime video capture
  - □ Up to 8-channel D1 / WD1 video can be rendered in non-realtime mode
- ITU-R BT.656 input interface x 2
  - □ Support 27/54/108 MHz for 720H video
  - □ Support 36/72/144 MHz for 960H video
  - □ Support 74.25 MHz for one BT.1120 FHD video
- I2S slave interface x 1
  - □ Support 16kHz 16-bit PCM audio
  - □ Support I2S / DSP-mode with multi-channel format (up to 4 channels)
- I2C master interface x 1
  - □ Support I2C interface for external EEPROMs and video decoders
  - □ Support boot-up from external EEPROM
  - □ Software programmable

PACKAGE

- 48-Pin LQFP (Body Size: 7mm x 7mm)

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