Key Specifications

CPU
- Quad-core ARM Cortex A7, up to 1.5 GHz dominant frequency
- Integrated multimedia acceleration engine NEON
- Hardware Java acceleration
- Integrated hardware floating-point coprocessor

3D GPU
- Quad-core Mali450
- OpenGL ES 2.0/1.1/1.0 OpenVG 1.1, EGL

Memory Interfaces
- DDR3/DDR3L interface
  - Maximum 2 GB capacity
  - 32-bit memory
  - Maximum 800 MHz frequency (DDR-1600)
- NAND flash interface
  - SLC/MLC flash memory
  - 8-bit data width
  - Maximum 64 GB capacity
  - Maximum 64-bit ECC
- eMMC/tSD/fSD flash memory

HiVXE Video Decoding
- H.265 Main Profile@L5.0 High-tie
- H.264 BP/MP/HP@L5.1
- Full-HD 3D videos (MVC), blu-ray navigation
- AVS baseline profile @L6.0, AVS-P16 (AVS+)
- MPEG1
- MPEG2 SP@ML, MP@HL
- MPEG4 SP@L0–3, ASP@L0–5, GMC
- MPEG4 short header format (H.263 baseline)
- VC-1 SP@ML, MP@HL, AP@L0–3
- VP6/8
- 4K x 2K@30 fps decoding
- Low delay decoding
- Simultaneous 4-channel HD decoding

Image Decoding
- Full HD JPEG hardware decoding, maximum 64 megapixels
- MJPEG decoding, maximum 1080p@40 fps
- PNG hardware decoding, maximum 64 megapixels

Video and Image Encoding
- H.264 BP/MP/HP@L4.2 video encoding, 1080p@30 fps
- JPEG hardware encoding, maximum 1080p@30 fps
- VBR or CBR mode for video encoding
- Low delay encoding

Audio Encoding and Decoding
- MPEG L1/L2
- DRA decoding
- Dolby Digital/Dolby Digital Plus Decoder-Converter
- Dolby True HD decoding

Audio/Video Interfaces
- PAL, NTSC, and SECAM standard output, and forcible standard conversion
- Aspect ratio of 4:3 or 16:9 and forcible aspect ratio conversion
- 4K x 2K/1080p50/1080p30/1080p24/1080i60/1080i50
  /720p/576p/576i/480p/480i output
- One SD output and one HD output from the same source or different sources
- One HDMI 1.4a TX with HDCP 1.2 output
- Analog video interfaces
  - One CVBS interface
  - One embedded VDAC
- Audio interfaces
  - Audio-left and audio-right channels
  - SPDIF interface
  - Embedded ADAC output
  - One I²S/PCM digital audio input/output (Optional)
  - HDMI audio output

Image and Display Processing (Imprex Processing Engine)
- Hardware overlaying of multi-channel graphics and video inputs
- Three OSD layers
- Four video layers
- Screen mirroring
- Ultra-low-delay video processing
- Letter box and PanScan
- Full format 3D video processing and display
- Multi-tap vertical and horizontal scaling of videos and graphics; free scaling
- Enhanced full-hardware TDE
- Full-hardware anti-aliasing and anti-flicker
- CSC with configurable coefficients
- Image enhancement and denoising
- Deinterlacing
- Sharpening
- Chrominance, luminance, contrast, and saturation adjustment
- Video Db/Dr processing

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Hi3798M V100 is a cost-effective chip solution targeted at the over-the-top (OTT) STB market. It brings the best user experience in the industry in terms of stream compatibility, smoothness and picture quality of live video playback, and STB performance. With an integrated high-performance quad-core processor and embedded NEON, Hi3798M V100 meets differentiated service requirements. It also supports Dolby and DTS audio processing. To meet the growing requirements on multimedia playback, video communication, and multi-screen transcoding, Hi3798M V100 supports HD video decoding in various formats (including H.265, H.264, AVS+, MVC, MPEG2, MPEG4, VC-1, VP6, and VP8) and high-performance H.264 encoding. Hi3798M V100 provides a smooth man-machine interface and rich gaming experience with a high-performance multi-core 2D/3D acceleration engine. It also enables flexible connection schemes with one Ethernet port, three USB 2.0 ports, one USB 3.0 port(Optional), and more peripheral interfaces.

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Acronyms and Abbreviations

ADAC audio digital-to-analog converter
ADB Android debug bridge
AVS adaptive voltage scaling
BGA ball grid array
CBR constant bit rate
CSC color space conversion
CVBS composite video broadcast signal
DRA dynamic resolution adaptation
DSP digital signal processor
DVFS dynamic voltage frequency scaling
ECC error correcting code
eMMC embedded multimedia card
FE fast Ethernet
GMC global motion compensation
GPIO general-purpose input/output
GPU graphics processing unit
HDMI high-definition multimedia interface
HEVC high efficiency video coding
I2C inter-integrated circuit
IR infrared
I²S inter-IC sound
JPEG Joint Photographic Experts Group
MJPEG Motion Joint Photographic Experts Group
MLC multi-level cell
MPEG Moving Picture Experts Group
MVC multiview video coding
NTSC National Television System Committee
OTT over-the-top
PCB printed circuit board
PCM pulse-code modulation
POR power-on reset
ROI region of interest
SDIO secure digital input/output
SLC single-level cell
SPDIF Sony/Philips digital interface
SPI serial peripheral interface
SSVP super secure video path
STB set-top box
TDE two-dimensional engine
UART universal asynchronous receiver transmitter
VBI vertical blanking interval
VBR variable bit rate
VDAC video digital-to-analog converter