**DESCRIPTION**

The EMMA3TH is an HDTV processor supporting worldwide digital/analog broadcasting formats. It integrates in a single chip the TV set core, which includes the CPU, AV signal processing, panel signal processing and peripheral control functions, and more. It is ideal for Full HDTV architecture.

**FEATURES**

- Multi-CPU system
  - Main CPU: V5500-compatible SS1000 core (655MiPS @ 327.68MHz)
  - Sub CPU: MIPS™ 4Ke™ core (393MiPS @ 327.68MHz)
  - Extended CPU: MIPS™ 4Ke™ core (196MiPS @ 163.84MHz)[#]

- DDR2 memory I/F (x32 + x16, Up to 4.8GByte/s)

- Stream processor supporting simultaneous de-multiplexing of 4 TSs
  - Encryption/Decryption: AES, Multi2, DVB, DES and 3DES functions
  - Supported streams: MPEG2-TS, MPEG2-PS and MPEG1, DVB, ARIB, ATSC

- Audio processor supporting two multi-audio format systems
  - MPEG BC, Dolby™ Digital, MPEG2 AAC, MPEG2 HE-AAC, Dolby™ Digital Plus

- Multi format video decoder (MPEG1, MPEG2, MPEG4 AVC/H.264, VC-1)
  - Bandwidth saving decode function

- High-performance graphics engine, 3-plane 32bpp OSD (main video: 2 planes, sub video: 1 plane)

- De-interlacer supporting Full HD

- 7x5 tap high-performance video scalar

- 14-bit signal processing picture quality adjustment controller (Picture Quality Controller) supporting xvYCC
  - LTI/CTI, 2D aperture, sharpness, APL adaptive black extension/white peak correction, contrast, hue correction,
  - Liner – γ, MATRIX conversion, V-T correction, LCD overdrive, FRC, etc.
  - Dual Link LVDS output supporting Full HD (for main video, 1920H x 1080 V x 60 Hz, 30-bit GBR)

- Downconvert analog video output (NTSC/PAL/SECAM : YC or CVBS Output)

- 4ch high speed video ADCs with analog video switch supporting up to 1080P and WUXGA

- 3D-Comb analog video decoder with SCART support

- HDMI (Deep color and x.v.color) receiver

- Various external interfaces
  - Ethernet MAC, 2-USB2.0, PCI, SmartCard, 4-UART, 3-IIC, CSI Host, CSI Target, GIO, GPIO, etc

- Various on-chip PLLs, clock input: 32.768MHz for System

- Power supply voltage: 3.3V, 1.8V (for external interface, analog core), 1.05V (for PLL, HDMI, internal logic core)

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
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<tr>
<td>MC-10153</td>
<td>933-pin plastic BGA (1.0mm pitch) (35x35)</td>
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