Product Brief

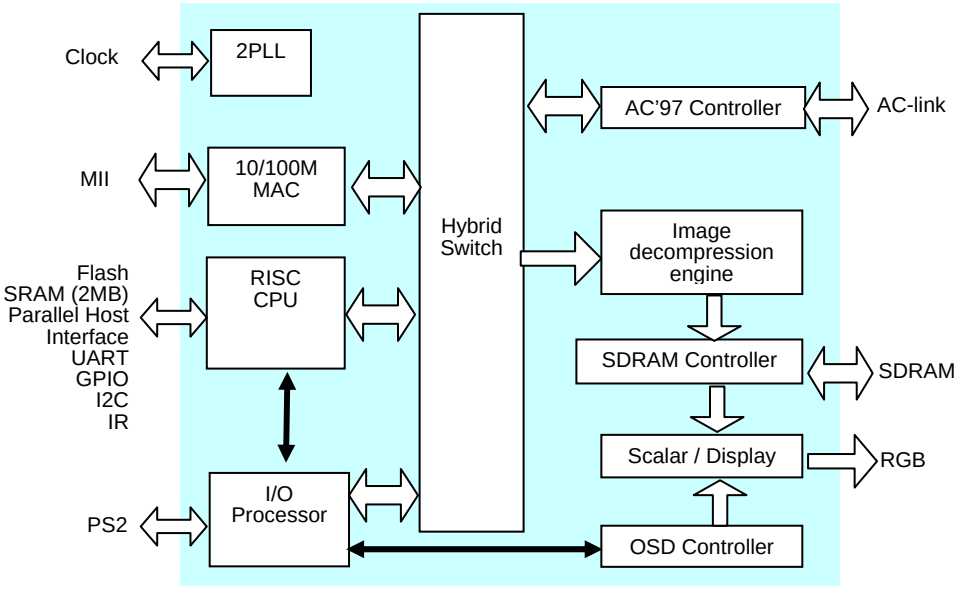
TF-600

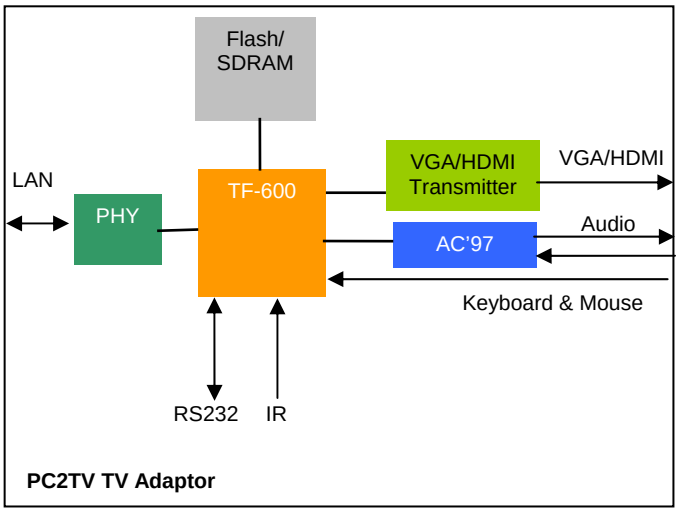
TF-600

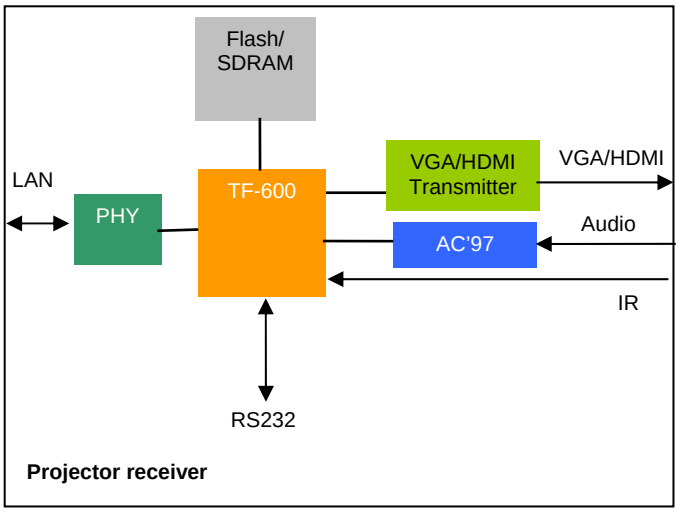
TF-600 is a multifunction decoder SoC dedicated for network display with many extra functions. It can receive video and audio files from network and decode them and than deliver the pictures and audio to a TV or a monitor. An image decompression engine in the TF-600 can decode JPEG or run-length compressed files. Comparing with other compression methods such as MPEG1/2/4 or H.264, JPEG and run-length delivers very low latency bidirectional interactive mechanism which is the best solution for PC2TV and intercom. Special lip sync mechanism designed in the TF-600 guarantees video and audio are in of sync.

Programmable OSD (On-Screen Display) in the TF-600 is suitable for any resolution LCD or PDP panels, even though CRT TVs or monitors to display difference size on screen display. Embedded scalar can scale up or down received pictures to fix screen resolution.

The TF-600 supports a PWM (Pulse Width Modulation), two IR receivers to receive IR from remote controller, two PS2 to connect keyboard and mouse, I2C and SPI for control usage. The TF-600 has two embedded PLL, one is to generate different timing for different resolution display requirements and the other one is dedicated for SDRAM high performance operations.







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taifatech
Optimizing Design Through ASIC

Product Brief

TF-600

TF-600

HARDWARE FEATURES

- **RISC Core**
  - Pipeline RISC TF-390 core, 83MHz operating frequency
  - 16KB memory for data, packet buffer and program mirroring
  - Supports up to total 4MB external Flash and SRAM
  - Supports 32 GPIO ports
- **Image compression engine, 83MHz operating frequency**
  - Supports input from 16 x 16 to 2M pixel image, maximum pixel clock rate at 166MHz.
  - Output image format
    - RGB 666/888
    - CH7301C DVI transmitter device input
    - Full image
    - 8 sub-images (non-overlap image)
  - Output image (JPEG)
    - 640X480 @ 85fps
    - 800X600 @ 85fps
    - 1024X768 @ 75fps
    - 1280X1024 @ 30fps
    - 1600X1200 @ 30fps
    - 1440X900 @ 30fps
    - 1680X1050 @ 30fps
    - 1920X1080 @ 25fps
  - Output frequency (JPEG) @ 60Hz ~ 85Hz
- **OSD**
  - RGB output
  - Supports 12x18, and 24x36 dots font size
  - Default 128 characters in 12x18 dots size and 128 characters in 24x36 dots in internal ROM
  - 384 characters in 12x18 dots size or 96 characters in 24x36 dots size in internal RAM
  - 8K characters in index RAM
- **Scalar**
  - Scale up to any size, maximum resolution up to 2048x2048
  - Scale down to any size
- **Run-length decoder in image decompression engine can decode Taifa's run-length picture from TF-630**
- **Supports brightness and contrast control**
- **Supports Gamma correction**
- **Dither**
  - 8-bit to 6-bit
  - timing dither
  - spatial dither
- **SDRAM controller**
  - Supports 32/64-bit data bus
  - Supports 8/16MB for video, audio, and CPU SRAM
  - SDRAM clock rate at 166 MHz
- **Supports AC'97 controller for audio**
- **Lip-sync mechanism guarantees audio and video are in of sync.**
- **Two PS2 for keyboard and mouse each**
- **I2C interface**
- **Display Data Channel (DDC)**
- **Two single bit IR controllers**
- **Built-in 10/100Mbps Ethernet MAC**
  - MII interface
  - 802.3x jamming control for full duplex mode and Jamming for half duplex mode
- **16-entry Layer2 DA/Ether Type filtering table for incoming packets filtering**
- **16-entry Layer4 IP/Port Number filtering table for incoming packets filtering**
- **Two PLL**
  - Input: 12MHz, output: 166MHz and 83MHz
  - Input: 12MHz, output: 12~166MHz

BENEFITS

- **Supports up to HDTV resolution**
- **A lot of hardware engines to increase overall performance without increasing CPU utilization**
- **Very low latency mechanism for interactive applications**
- **Highly integrated decoder SoC to reduce BOM cost**
- **Wide spectrum of applications**
  - PC2TV
  - Digital signage
  - Digital media head end
  - Building entry system
  - Security system

For additional information please visit us at www.taifatech.com or send email to sales@taifatech.com.

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