

# STANDARDS

Name / #	Description
<b>CCIR 601</b> <b>CCIR 656</b> <b>SMPTE 125M</b>	Component Digital Parameters Parallel interface for Component Digital Parallel interface for Component Digital
<b>ANSI/SMPTE 272M-1994</b>	Digital audio that is multiplexed and carried within an SDI connection--so simplifying cabling and routing.
<b>Ethernet (IEEE 802.3)</b>	A type of high-speed network for interconnecting computing devices. Ethernet can be either <b>10 or 100 Mbps</b> (Fast Ethernet). Ethernet is a trademark of Xerox Corporation, Inc.
<b>H.263</b>	A standard for variable low bit rate coding of video. H.263 is better than MPEG-1/MPEG-2 for low resolutions and low bit rates. H.263 is less flexible than MPEG, but therefore requires much less overhead.
<b>ITU-R BT.601-2</b>	formerly known as CCIR 601. This international standard defines the encoding parameters of digital television for studios. It is the international standard for digitizing component television video in both 525 and 625 line systems and is derived from the SMPTE RP125. ITU-R 601 deals with both color difference (Y, R-Y, B-Y) and RGB video, and defines sampling systems, RGB/Y, R-Y, B-Y matrix values and filter characteristics. It does not actually define the electro-mechanical interface--see ITU-R BT.656. ITU-R 601 is normally taken to refer to color difference component digital video (rather than RGB), for which it defines 4:2:2 sampling at 13.5 MHz with 720 luminance samples per active line and 8 or 10-bit digitizing. Some headroom is allowed with black at level 16 (not 0) and white at level 235 (not 255)--to minimize clipping of noise and overshoots. Using 8-bit digitizing approximately 16 million unique colors are possible: 28 each for Y (luminance), Cr and Cb (the digitized color difference signals) = $224 = 16,777,216$ possible combinations. The sampling

## ITU-R BT.656

Formerly known as CCIR 656. The physical parallel and serial interconnect scheme for ITU-R BT.601-2 (CCIR 601). ITU-R BT.656 defines the parallel connector pinouts as well as the blanking, sync, and multiplexing schemes used in both parallel and serial interfaces. Reflects definitions in EBU Tech 3267 (for 625-line signals) and in SMPTE 125M (parallel 525) and SMPTE 259M (serial 525).

## ITU-R BT.709-3

Ratified by the International Telecommunications Union (ITU) in June 1999, the 1920x1080 digital sampling structure is a world format. All supporting technical parameters relating to scanning, colorimetry, transfer characteristics, etc. are universal. The CIF can be used with a variety of picture capture rates: 60p, 50p, 30p, 25p, 24p, as well as 60i and 50i

## RS-232

: A standard, single-ended (unbalanced) interconnection scheme for serial data communications.

## RS-422

A **medium range (typically up to 300 m/1000 ft or more)** balanced **serial data transmission standard**. Data is sent using an ECL signal on two twisted pairs for bi-directional operation. Full specification includes **9-way D-type** connectors and optional additional signal lines.

RS-422 is widely used for control links around production and post areas for a range of equipment.

## SMPTE 305M

SMPTE 305M. Allows **faster-than-realtime transfers between various servers and between acquisition tapes, disk-based editing systems and servers, with both 270 Mb and 360 Mb are supported. With typical realtime compressed video transfer rates in the 18 Mbps to 25 Mbps to 50 Mbps range, SDTI's 200+ Mbps payload can accommodate transfers up to four times normal speed.**

The SMPTE 305M standard describes the assembly and disassembly of a stream of 10-bit data words that conform to SDI rules. Payload data words can be up to 9 bits. The 10th bit is a complement of the 9th to prevent illegal SDI values from occurring. The basic payload is inserted between SAV and EAV although an appendix permits additional data in the SDI ancillary data space as well. A header immediately after EAV provides a series of flags and data IDs to indicate what's coming as well as line counts and CRCs to check data continuity.

- SMPTE 125M (formerly RP-125)** SMPTE 125M (formerly RP-125): The **SMPTE standard for a bit parallel digital interface for 55-line interlace** component video signals. SMPTE 125M defines the parameters required to generate and distribute component video signals on a parallel interface.
- SMPTE 244M** SMPTE 244M: The SMPTE standard for a bit parallel digital interface for composite video signals. SMPTE 244M defines the **parameters required to generate and distribute composite video signals on a parallel interface.**
- SMPTE 259M** : The SMPTE standard for **standard definition serial digital component and composite interfaces.**
- SMPTE 272M** The SMPTE standard for **formatting AES/EBU audio and auxiliary data into digital video ancillary data space.**
- SMPTE 292M** : The SMPTE standard for **bit-serial digital interface for high-definition television systems.**
- SMPTE 293M** The SMPTE standard **defining the data representation of the 720x483 progressive signal at 59.94 Hz.**
- SMPTE 294M** The SMPTE standard defining the **serial interfaces for both 4:2:2P (progressive) on two-SMPTE**  
259M links and 4:2:0P (progressive) on a single SMPTE 259M link (at 360Mbps).
- SMPTE 299M** The SMPTE standard for **24-bit digital audio format for HDTV bit-serial interface. Allows eight embedded AES/EBU audio channel pairs.**
- SMPTE 305M** The SMPTE standard for **Serial Digital Transport Interface (SDTI).**
- SMPTE 310M** The SMPTE standard for **synchronous serial interface (SSI) for MPEG-2 digital transport streams; used as the "standard" for the output from the ATSC systems multiplexer and the input to DTV transmitters.**