

MPEG

Name	DESCRIPTION	RATE
MPEG-1	A group of picture blocks, usually four, which are analyzed during MPEG coding to give an estimate of the movement between frames. This generates the motion vectors that are then used to place the macroblocks in decoded pictures. This was designed to work at 1.2 Mbps, the data rate of CD-ROM , so that video could be played from CDs. However the quality is not sufficient for TV broadcast.	1.2 Mbps
MPEG-2	<p>This has been designed to cover a wide range of requirements from "VHS quality" all the way to HDTV through a series of algorithm "profiles" and image resolution "levels." With data rates of between 1.2 and 15 Mbps, there is intense interest in the use of MPEG-2 for the digital transmission of television--including HDTV--applications for which the system was conceived. Coding the video is very complex, especially as it is required to keep the decoding at the reception end as simple and inexpensive as possible. MPEG-2 is the compression used by the ATSC and DVB standards. MPEG can offer better quality pictures at high compression ratios than pure JPEG compression, but with the complexity of decoding and especially coding and the 12-long group of pictures (GoP), it is not an ideal compression system for editing. If any P or B frames are used then even a cut will require the re-use of complex, and not perfect, MPEG coding. However, MPEG Splicers are beginning to appear to alleviate this difficulty.</p> <p>Of the six profiles and four levels creating a grid of 24 possible combinations, 12 have already been implemented. The variations these define are so wide that it would not be practical to build a universal coder or decoder. Inter is now focused on the Main profile, Main level, sometimes written as MP@ML, which covers broadcast television formats up to 720 pixels x 576 lines at 30 frames per second. These figures are quoted as maximums so 720 x 486 at 30 frames are included, as are 720 x 576 at 25 frames. As the coding is intended for transmission the economy of 4:2:0 sampling is used.</p> <p>A recent addition to MPEG-2 is the studio profile. Designed for studio work its sampling is 4:2:2. The studio profile is written as 422P@ML. To improve the picture quality, higher bit rates are used. The first applications for this appear to be in electronic news gathering (ENG), and with some video servers.SEE MPEG 2 CHART</p>	1.2 to 15 Mbps
MPEG-4	The third standard developed by MPEG. Started in July 1993 MPEG-4 has benefited from the huge R&D investments made by participating companies and provides a harmonised range of responses to the diverse needs of the digital audio-visual industry, including compatibility with other major standards such as H.263 and VRML.	
MPEG 4:2:2	Also referred to as Studio MPEG , Professional MPEG and 442P@ML. Sony's Betacam SX is based on MPEG 4:2:2. See: MPEG-2.	

MPEG-7 A standardized description of various types of multimedia information. This description will be associated with the content itself, to allow fast and efficient searching for material that is of interest to the user. MPEG-7 is **formally called "Multimedia Content Description Interface."** The standard does not comprise the (automatic) extraction of descriptions/features. Nor does it specify the search engine (or any other program) that can make use of the description. It is not a new compression standard, but an attempt to manage motion imaging and multimedia technology.

MPEG-21 The Motion Picture Experts Group's attempt to get a handle on the overall topic of content delivery. By defining a Multimedia Framework from the viewpoint of the consumer, they hope to understand how various components relate to each other and where gaps in the infrastructure might benefit from new standards. A technical report on the MPEG-21 framework is scheduled for mid-2000.

MPEG IMX Sony's trademark for a family of devices, such as DVTRs, that are I frame-only **50 Mbps MPEG-2** streams using Betacam style cassettes. Plays Digital Betacam, Betacam SX, Betacam SP, Betacam, and, MPEG IMX, outputting 50 Mbps MPEG I-frame on SDTI-CP regardless of the tape being played. It can also handle other (lower) input and output data rates, but the recordings are 50 Mbps I-frame in any case.

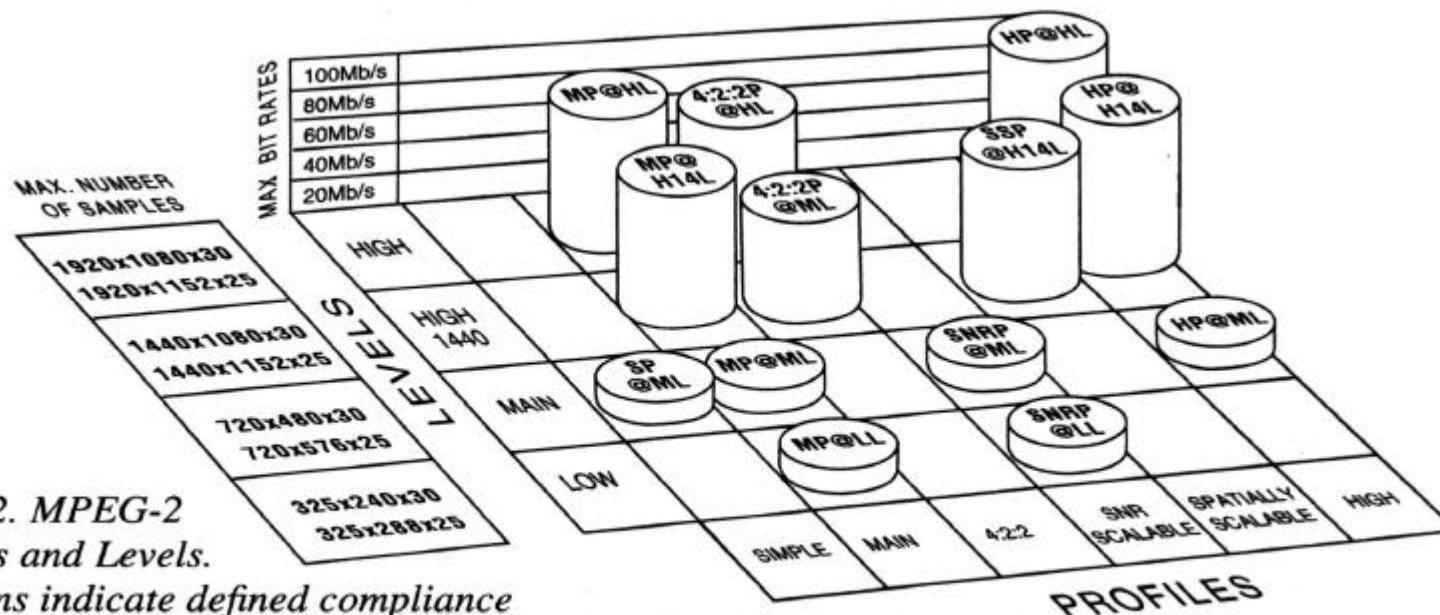


figure 2. MPEG-2 Profiles and Levels. Columns indicate defined compliance points and their respective maximum bandwidths. 4:2:2 studio profile @ high level is in discussion and will probably be a SMPTE standard and not an MPEG standard.