

9.1 Uncompressed Audio & Video

1. Audio

Quality	Sample Rate (kHz)	Quantization Level	Bandwidth (Mbps/Gbps)
AM Radio (stereo)	11.025	8	0.1764 Mbps
FM Radio (stereo)	22.05	16	0.7056 Mbps
HD/DVD Audio	192	24	4.608 Mbps

2. Video

Quality	Resolution	Bits Per Pixel	FPS	Bandwidth (Mbps/Gbps)
4k Video	3840 x 2160	24	24	4'777.574 Mbps / 4.777 Gbps
5k Video	5140 x 2880	36	30	15'987.456 Mbps / 15.987 Gbps
8k Video	7680 x 4320	48	60	95'551.488 Mbps / 95.551 Gbps

9.2 Digitization of Audio Data

9.3 Source Encoding

9.4 MPEG Audio

9.5 Huffman Coding

1. Encoding of **IACEANFI**:

0000 11 10 001 11 0001 01 0000

2. Encoding of **MARCEL ZAUDER**:

Symbol	Weight	Symbol	Encoding
M	1/13	A	11
A	2/13	M	101
R	2/13	E	001
C	1/13	R	000
E	2/13	L	1001
L	1/13	C	1000
Z	1/13	U	0111
U	1/13	Z	0110
D	1/13	'space'	0101
'space'	1/13	D	0100

Encoding:

101 11 000 1000 001 1001
0101
0110 11 0111 0100 001 000

- What do we call codes of this property? Code of this type is called a prefix code. A prefix code requires that ther is no whole code word in the system that is a prefix of any other code word in the system. Therefore no seperator is required.

9.6 Pulse Code Modulation