

# TECHNICAL SPECIFICATIONS

Applied Standards per Country

	VHF	UHF	NORMA
Algeria	B	H	PAL
Argentina	N	N	PAL
Australia	B	H	PAL
Austria	B	G	PAL
Bahrain	B	G	PAL
Belgium	D	H	PAL
Bulgaria	B	K	SECAM
China	D	K	PAL
Cyprus	B	G	PAL
Croatia	B	G	PAL
Czechoslovakia	D	K	SECAM
Denmark	B	G	PAL
Egypt	B	G, H	SECAM
Finland	B	G	PAL
France	EIL	L	SECAM
Germany	B	G	PAL
Gibraltar	B	H	PAL
Great Britain	I	I	PAL
Greece	B	G	SECAM
Holland	B	G	PAL
Hong Kong	(A)	I	PAL
Hungary	D	K	SECAM
Iceland	B	G	PAL
India	B	G	PAL
Indonesia	B	G	PAL
Iran	B	G	SECAM
Iraq	B	I	SECAM
Ireland	I	I	PAL
Israel	B	G	PAL
Italy	B	G	PAL
Japan	M	M	NTSC
Jordan	B	G	PAL
Korea (Rep.)	M	G	NTSC
Kuwait	B	G	PAL
Lebanon	B	G	SECAM
Libya	B	H	PAL
Luxemburg	C	L	PAL/SECAM
Malta	B	H	PAL
Malaysia	B	G	PAL
Mexico	M	M	NTSC
Monaco	E	L	SECAM
Morocco	B	H	SECAM
Nigeria	B	G	PAL
Norway	B	G	PAL
Ornan Sultanate	B	G	PAL
Pakistan	B	-	PAL
Philippines	M	M	NTSC
Poland	D	K	SECAM
Portugal	B	G	PAL
Qatar	B	-	PAL
Romania	D	K	PAL
Russia	D	K	SECAM
Saudi Arabia	B	G	PAL/SECAM
Singapore	B	G	PAL
Slovenia	B	G	PAL
Spain	B	G	PAL
Sri Lanka	B/H	-	PAL
South Africa	I	I	no se
Sweden	B	G	PAL
Switzerland	B	G	PAL
Syrian Arab. Rep.	B B	H	SECAM
Thailand	B	R	PAL
Tunisia	B	G	SECAM
Turkey	B B	G	PAL
U.A.E.	B	G	PAL
U.S.A.	M	M	NTSC
Yemen P.D. R.	B	-	PAL
Yugoslavia	B	G	PAL

Channels distribution according to CCIR (B Standard +G Europe)

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
Bd.I	2	47...54	48,25	53,75
	3	54...61	55,25	60,75
	4	61...68	62,25	67,75
			62,25	67,75
Sub.Band	L1	68...75	69,25	74,75
	L2	75...82	76,25	81,75
	L3	82...89	83,25	88,75

Bd.II	FM	88...108		
S Low Band	S1	104...111	105,25	110,75
	S2	111...118	112,25	117,75
	S3	118...125	119,25	124,75
	S4	125...132	126,25	131,75
	S5	132...139	133,25	138,75
	S6	139...146	140,25	145,75
	S7	146...153	147,25	152,75
	S8	153...160	154,25	159,75
	S9	160...167	161,25	166,75
	S10	167...174	168,25	173,75
B.III	5	174...181	175,25	180,75
	6	181...188	182,25	187,75
	7	188...195	189,25	194,75
	8	195...202	196,25	201,75
	9	202...209	203,25	208,75
	10	209...216	210,25	215,75
	11	216...223	217,25	222,75
	12	223...230	224,25	229,75
S High Band	S11	230...237	231,25	236,75
	S12	237...244	238,25	243,75
	S13	244...251	245,25	250,75
	S14	251...258	252,25	257,75
	S15	258...265	259,25	264,75
	S16	265...272	266,25	271,75
	S17	272...279	273,25	278,75
	S18	279...286	280,25	285,75
	S19	286...293	287,25	292,75
	S20	293...300	294,25	299,75
Hyper Band	S21	302...310	303,25	308,75
	S22	310...318	311,25	316,75
	S23	318...326	319,25	324,75
	S24	326...334	327,25	332,75
	S25	334...342	335,25	340,75
	S26	342...350	343,25	348,75
	S27	350...358	351,25	356,75
	S28	358...366	359,25	364,75
	S29	366...374	367,25	372,75
	S30	374...382	375,25	380,75
	S31	382...390	383,25	388,75
	S32	390...398	391,25	396,75
	S33	398...406	399,25	404,75
	S34	406...414	407,25	412,75
	S35	414...422	415,25	420,75
	S36	422...430	423,25	428,75
	S37	430...438	431,25	436,75
	S38	438...446	439,25	444,75
IV	21	470...478	471,25	476,75
	22	478...486	479,25	484,75
	23	486...494	487,25	492,75
	24	494...502	495,25	500,75
	25	502...510	503,25	508,75
	26	510...518	511,25	516,75
	27	518...526	519,25	524,75
	28	526...534	527,25	532,75
	29	534...542	535,25	540,75
	30	542...550	543,25	548,75
	31	550...558	551,25	556,75
	32	558...566	559,25	564,75
	33	566...574	567,25	572,75
	34	574...582	575,25	580,75
	35	582...590	583,25	588,75
	36	590...598	591,25	596,75
	37	598...606	599,25	604,75
V	38	606...614	607,25	612,75
	39	614...622	615,25	620,75
	40	622...630	623,25	628,75
	41	630...638	631,25	636,75
	42	638...646	639,25	644,75
	43	646...654	647,25	652,75
	44	654...662	655,25	660,75
	45	662...670	663,25	668,75
	46	670...678	671,25	676,75
	47	678...686	679,25	684,75
	48	686...694	687,25	692,75
	49	694...702	695,25	700,75
	50	702...710	703,25	708,75
	51	710...718	711,25	716,75
	52	718...726	719,25	724,75
	53	726...734	727,25	732,75

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
	54	734...742	735,25	740,75
	55	742...750	743,25	748,75
	56	750...758	751,25	756,75
	57	758...766	759,25	764,75
	58	766...774	767,25	772,75
	59	774...782	775,25	780,75
	60	782...790	783,25	788,75
	61	790...798	791,25	796,75
	62	798...806	799,25	804,75
	63	806...814	807,25	812,75
	64	814...822	815,25	820,75
	65	822...830	823,25	828,75
	66	830...838	831,25	836,75
	67	838...846	839,25	844,75
	68	846...854	847,25	852,75
	69	854...862	855,25	860,75

L Standard. FRANCE

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
BdIII	L05	174,75...182,75	176	182,5
	L06	182,75...190,75	184	190,5
	L07	190,75...198,75	192	198,5
	L08	198,75...206,75	200	206,5
	L09	206,75...214,75	208	214,5
	L10	214,75...222,75	216	222,5

I Standard. UK - SOUTHAFRICA

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
BdIII	K4	174...182	175,25	181,75
	K5	182...190	183,25	189,75
	K6	190...198	191,25	197,75
	K7	198...206	199,25	205,75
	K8	206...214	207,25	213,75
	K9	214...222	215,25	221,75

H Standard. AUSTRALIA

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
BdIII	H28	526...533	527,25	532,75
	H29	533...540	534,25	539,75
	H30	540...547	541,25	546,75
	H31	547...554	548,25	553,75
	H32	554...561	555,25	560,75
	H33	561...568	562,25	567,75
	H34	568...575	569,25	574,75
	H35	575...582	576,25	581,75
	H36	582...589	583,25	588,75
	H37	589...596	590,25	595,75
	H38	596...603	597,25	602,75

BdV	Channel	Freq. Channel	Video Carrier	Audio Carrier
	H39	603...610	604,25	609,75
	H40	610...617	611,25	616,75
	H41	617...624	618,25	623,75
	H42	624...631	625,25	630,75
	H43	631...638	632,25	637,75
	H44	638...645	639,25	644,75
	H45	645...652	646,25	651,75
	H46	652...659	653,25	658,75
	H47	659...666	660,25	665,75
	H48	666...673	667,25	672,75
	H49	673...680	674,25	679,75
	H50	680...687	681,25	686,75
	H51	687...694	688,25	693,75
	H52	694...701	695,25	700,75
	H53	701...708	702,25	707,75
	H54	708...715	709,25	714,75
	H55	715...722	716,25	721,75
	H56	722...729	723,25	728,75
	H57	729...736	730,25	735,75
	H58	736...743	737,25	742,75
	H59	743...750	744,25	749,75
	H60	750...757	751,25	756,75
	H61	757...764	758,25	763,75
	H62	764...771	765,25	770,75
	H63	771...778	772,25	777,75
	H64	778...785	779,25	784,75
	H65	785...792	786,25	791,75
	H66	792...799	793,25	798,75
	H67	799...806	800,25	805,75
	H68	806...813	807,25	812,75
	H69	813...820	814,25	819,75

B Standard. ITALIA

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
Bd.I	A	52,5...59,5	53,75	59,25
	B	61...68	62,25	67,75
Bd.II	C	81...88	82,25	87,75
Bd.III	D	174...181	175,25	180,75
	E	182,5...189,5	183,75	189,25
	F	191...198	192,25	197,75
	G	200...207	201,25	206,75
	H	209...216	210,25	215,75
	H1	216...223	217,25	222,75
	H2	223...230	224,25	229,75

D Standard. RUSIA - OIRT

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
Bd.I	R1	48,5...56,5	49,75	56,25
	R2	58...66	59,25	65,75
	R3	76...84	77,25	83,75
Bd.II	R4	84...92	85,25	91,75
	R5	92...100	93,25	99,75
Bd.III	R6	174...182	175,25	181,75
	R7	182...190	183,25	189,75
	R8	190...198	191,25	197,75
	R9	198...206	199,25	205,75
	R10	206...214	207,25	213,75
	R11	214...222	215,25	221,75

I Standard. IRELAND

Bands	Channel	Freq. Channel	Video Carrier	Audio Carrier
BdI	A-1	44,5...52,5	45,75	51,75
	B-1	52,5...60,5	53,75	59,75
	C-1			

## GLOSSARY OF MEASUREMENTS

**ADJACENT CHANNEL REJECTION (dB):** The difference between the minimum gain in the channel and the maximum gain (minimum attenuation) in the adjacent channel. The adjacent channel in UHF is  $C \pm 2$  and in VHF is  $C \pm 1$ .

**AGC RANGE (dB):** The difference between the maximum and minimum signal that is necessary for a system with AGC to keep a constant output.

**BAND REJECTION (dB):** The difference between the minimum gain in the amplified band and the maximum attenuation in the rejected band.

**FLATNESS (dB):** The difference between the maximum and minimum gain in a certain band or channel.

**FREQUENCY RESPONSE:** The variation in amplitude within a certain band or channel.

**GAIN (dB):** This is the difference between the output power of an amplifier with the characteristic impedance ( $75 \Omega$ ) and the input power.

### MAXIMUM OUTPUT LEVEL (dB $\mu$ V)

DAB Amplifier: Intermodulation distance= 50 dB  
(2 channels 4 MHz)

FM Amplifier: UNE 523/79 standard  
Intermodulation distance= 54 dB

IF Amplifier: DIN VDE 0855/12 standard  
Intermodulation distance= 35 dB

PAL broadband amplifiers: DIN45004B  
standard Intermodulation distance= 60 dB

Single channel amplifiers: EN50083-5  
standard Intermodulation distance= 54 dB

**NOISE FIGURE:** The ratio of the actual noise power generated at the output of an amplifier to that which would be generated in an ideal resistor. The lower the noise figure, the better the performance. The noise figure is expressed in (dB):  $NF = 10 \log F$ .

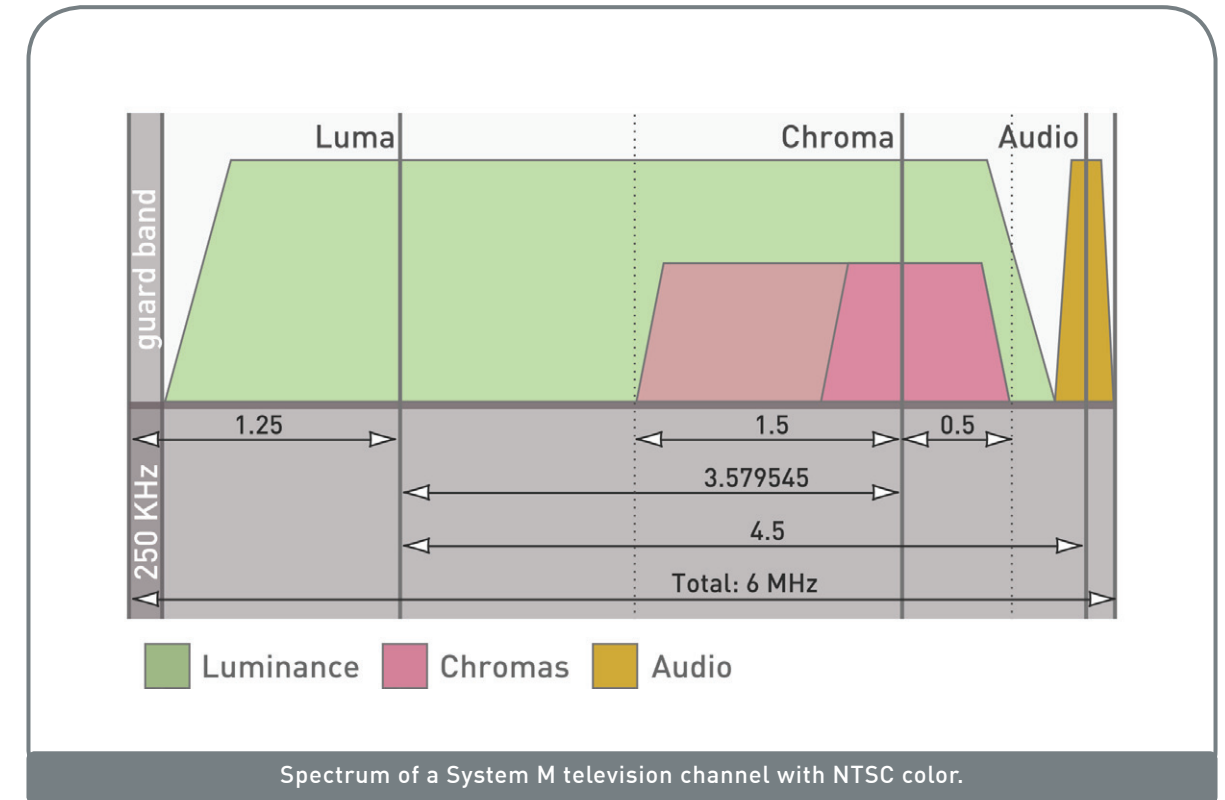
**REJECTION BETWEEN INPUTS/OUTPUTS (dB):** The band attenuation between inputs/outputs.

**SPURIOUS (dBc):** The difference in levels between the channel carrier created by a modulator or converter and the lower side band or local oscillator. This only applies when there is a broadband channel.

**THROUGH LOSSES (dB):** The attenuation that is undergone by signal in a specific band between the input and output of a device.

**BER (Bit Error Ratio):** Measurement of signal quality after demodulation. It simply indicates what proportion of the received binary digits (bits) are incorrect – 0 received as 1 or vice-versa. BER is ultimately the best measure of digital signal quality since it tells us directly whether a picture can be displayed. In practice, when investigating reception problems, a CSI display is often more useful and MER measurements may be more appropriate, with a direct indication in dB of the ability of a receiver to decode the signal. A satisfactory result in a Digital installation such as DTT or Satellite would be  $< 2 \times 10^{-4}$

**MER (Modulation Error Ratio):** is a very similar parameter to C/N and is also a ratio measured in dB. It includes all other signal impairments, not just noise. It can therefore be used to give a more direct indication of decoding margin when, as is often the case, there is co-channel interference as well as noise in the channel.



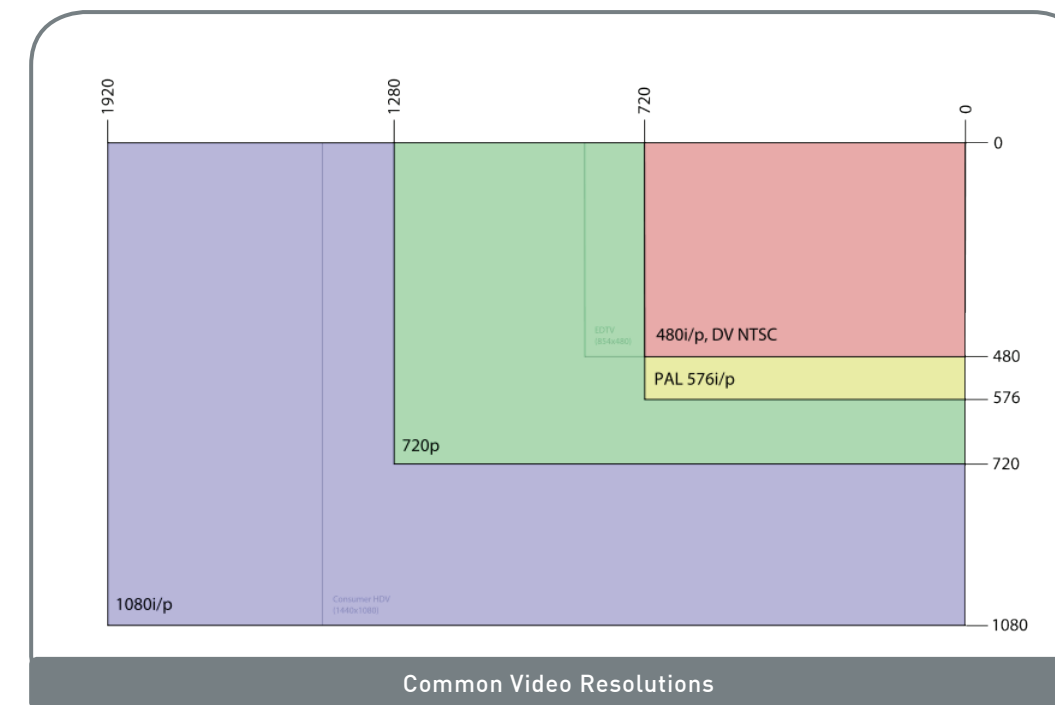
## NETWORK TECHNOLOGIES

IEEE 802.X STANDARDS		
Name	Description	Note
IEEE 802.1	Bridging (networking) and Network Management	-----
IEEE 802.2	Logical link control	Inactive
IEEE 802.3	Ethernet	-----
IEEE 802.4	Token bus	Disbanded
IEEE 802.5	Defines the MAC layer for a Token Ring	Inactive
IEEE 802.6	Metropolitan Area Networks	Disbanded
IEEE 802.7	Broadband LAN using Coaxial Cable	Disbanded
IEEE 802.8	Fiber Optic TAG	Disbanded
IEEE 802.9	Integrated Services LAN	Disbanded
IEEE 802.10	Interoperable LAN Security	Disbanded
IEEE 802.11 a/b/g/n	Wireless LAN & Mesh (Wi-Fi certification)	-----
IEEE 802.12	Demand Priority	Disbanded
IEEE 802.13	-----	Not used (officially)
IEEE 802.14	Cable Modems	Disbanded
IEEE 802.15	Wireless PAN	-----
IEEE 802.15.1	Bluetooth Certification	-----
IEEE 802.15.4	ZigBee Certification	-----
IEEE 802.16	Broadband Wireless Access (WiMAX certification)	-----
IEEE 802.16e	(Mobile) Broadband Wireless Access	-----
IEEE 802.16.1	Local Multipoint Distribution Service	-----
IEEE 802.17	Resilient packet ring	-----
IEEE 802.18	Radio Regulatory TAG	-----
IEEE 802.19	Coexistence TAG	-----
IEEE 802.20	Mobile Broadband Wireless Access	-----
IEEE 802.21	Media Independent Handoff	-----
IEEE 802.22	Wireless Regional Area Network	-----
IEEE 802.23	Broadband ISDN system	Experimental

The IEEE 802 family of standards is maintained by the IEEE 802 LAN/MAN Standards Committee (LMSC). The most widely used standards are for the Ethernet family, Token Ring, Wireless LAN, Bridging and Virtual Bridged LANs.

ETHERNET TECHNOLOGIES				
Technology	Transmission Speed	Cable Type	Maximum Distance	Topology
10Base2	10 Mbps	Coaxial	185 m	Bus (T Connector)
10BaseT	10 Mbps	Twisted Pair	100 m	Star (Hub or Switch)
10BaseF	10 Mbps	Optic Fiber	2000 m	Star (Hub or Switch)
100BaseT4	100Mbps	Twisted Pair (category 3UTP)	100 m	Star. Half Duplex (hub) & Full Duplex (switch)
100BaseTX	100Mbps	Twisted Pair (category 5UTP)	100 m	Star. Half Duplex (hub) & Full Duplex (switch)
100BaseFX	100Mbps	Optic Fiber	2000 m	No hubs
1000BaseT	1000Mbps	4 Twisted Pair (category 5e or 6UTP)	100 m	Star. Full Duplex (switch)
1000BaseSX	1000Mbps	Optic Fiber (multimode)	550 m	Star. Full Duplex (switch)
1000BaseLX	1000Mbps	Optic Fiber (monomode)	5000 m	Star. Full Duplex (switch)

Information extracted from www.wikipedia.org



## MPEG-2 PROFILES AND LEVELS

MPEG-2 LEVELS						
Abbr.	Name	Frame rates (Hz)	Max horizontal resolution	Max vertical resolution	Max luminance samples per second (approximately height x width x framerate)	Max bit rate in Main profile (Mbit/s)
LL	Low Level	23.976, 24, 25, 29.97, 30	352	288	3,041,280	4
ML	Main Level	23.976, 24, 25, 29.97, 30	720	576	10,368,000, except in High profile, where constraint is 14,475,600 for 4:2:0 and 11,059,200 for 4:2:2	15
H-14	High 1440	23.976, 24, 25, 29.97, 30, 50, 59.94, 60	1440	1152	47,001,600, except that in High profile with 4:2:0, constraint is 62,668,800	60
HL	High Level	23.976, 24, 25, 29.97, 30, 50, 59.94, 60	1920	1152	62,668,800, except that in High profile with 4:2:0, constraint is 83,558,400	80

MPEG-2 PROFILES					
Abbr.	Name	Picture Coding Types	Chroma Format	Aspect Ratios	Scalable modes
SP	Simple profile	I, P	4:2:0	Square pixels, 4:3, or 16:9	None
MP	Main profile	I, P, B	4:2:0	Square pixels, 4:3, or 16:9	None
SNR	SNR Scalable profile	I, P, B	4:2:0	Square pixels, 4:3, or 16:9	SNR (signal-to-noise ratio) scalable
Spatial	Spatially Scalable profile	I, P, B	4:2:0	Square pixels, 4:3, or 16:9	SNR- or spatial-scalable
HP	High profile	I, P, B	4:2:2 or 4:2:0	Square pixels, 4:3, or 16:9	SNR- or spatial-scalable

Information extracted from www.wikipedia.org

## H.264 PROFILES AND LEVELS

### H.264 PROFILES

The standard includes the following sets of capabilities, which are referred to as profiles, targeting specific classes of applications:

#### CONSTRAINED BASELINE PROFILE (CBP)

Primarily for low-cost applications this profile is used widely in videoconference and mobile applications. It corresponds to the subset of features that are in common between the Baseline, Main, and High Profiles described below.

#### BASELINE PROFILE (BP)

Primarily for low-cost applications that requires additional error robustness, while this profile is used rarely in videoconference and mobile applications, it does add additional error resilience tools to the Constrained Baseline Profile. The importance of this profile is fading after the Constrained Baseline Profile has been defined.

#### MAIN PROFILE (MP)

Originally intended as the mainstream consumer profile for broadcast and storage applications, the importance of this profile faded when the High profile was developed for those applications.

#### EXTENDED PROFILE (XP)

Intended as the streaming video profile, this profile has relatively high compression capability and some extra tricks for robustness to data losses and server stream switching.

#### HIGH PROFILE (HiP)

The primary profile for broadcast and disc storage applications, particularly for high-definition television applications (this is the profile adopted into HD DVD and Blu-ray Disc, for example).

#### HIGH 10 PROFILE (Hi10P)

Going beyond today's mainstream consumer product capabilities, this profile builds on top of the High Profile, adding support for up to 10 bits per sample of decoded picture precision.

#### HIGH 4:2:2 PROFILE (Hi422P)

Primarily targeting professional applications that use interlaced video, this profile builds on top of the High 10 Profile, adding support for the 4:2:2 chroma subsampling format while using up to 10 bits per sample of decoded picture precision.

#### HIGH 4:4:4 PREDICTIVE PROFILE (Hi444PP)

This profile builds on top of the High 4:2:2 Profile, supporting up to 4:4:4 chroma sampling, up to 14 bits per sample, and additionally supporting efficient lossless region coding and the coding of each picture as three separate color planes.

#### HIGH STEREO PROFILE

This profile targets two-view stereoscopic 3D video and combines tools from the High profile with inter-view prediction capabilities of Multiview Video Coding extension.

In addition, the standard contains four additional all-Intra profiles, which are defined as simple subsets of other corresponding profiles. These are mostly for professional (e.g., camera and editing system) applications:

H.264 PROFILES								
Feature	CBP	BP	XP	MP	HiP	Hi10P	Hi422P	Hi444PP
I and P slices	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B slices	No	No	Yes	Yes	Yes	Yes	Yes	Yes
SI and SP slices	No	No	Yes	No	No	No	No	No
Flexible macroblock ordering (FMO)	No	Yes	Yes	No	No	No	No	No
Arbitrary slice ordering (ASO)	No	Yes	Yes	No	No	No	No	No
Redundant slices (RS)	No	Yes	Yes	No	No	No	No	No
Data partitioning	No	No	Yes	No	No	No	No	No
Interlaced coding (PicAFF, MBAFF)	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Multiple reference frames	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
In-loop deblocking filter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CAVLC entropy coding	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CABAC entropy coding	No	No	No	Yes	Yes	Yes	Yes	Yes
8x8 vs. 4x4 transform adaptability	No	No	No	No	Yes	Yes	Yes	Yes
Quantization scaling matrices	No	No	No	No	Yes	Yes	Yes	Yes
Separate Cb and Cr QP control	No	No	No	No	Yes	Yes	Yes	Yes
Monochrome (4:0:0)	No	No	No	No	Yes	Yes	Yes	Yes
Chroma formats (4:2:x)	0	0	0	0	0	0	0, 2	0, 2, 4
Largest sample depth	8	8	8	8	8	10	10	14
Separate color plane coding	No	No	No	No	No	No	No	Yes
Predictive lossless coding	No	No	No	No	No	No	No	Yes

Information extracted from [www.wikipedia.org](http://www.wikipedia.org)

H.264 LEVELS							
Level	Max macroblocks		Max video bit rate (VCL) (kbit/s)				Examples for high resolution @ frame rate (max stored frames)
	per second	per frame	BP, XP, MP	HiP	Hi10P	Hi422P, Hi444PP	
1	1485	99	64	80	192	256	128x96@30.9 176x144@15.0
1b	1485	99	128	160	384	512	128x96@30.9 176x144@15.0
1.1	3000	396	192	240	576	768	176x144@30.3 320x240@10.0 352x288@7.5
1.2	6000	396	384	480	1152	1536	320x240@20.0 352x288@15.2
1.3	11880	396	768	960	2304	3072	320x240@36.0 352x288@30.0
2	11880	396	2000	2500	6000	8000	320x240@36.0 352x288@30.0
2.1	19800	792	4000	5000	12000	16000	352x480@30.0 352x576@25.0
2.2	20250	1620	4000	5000	12000	16000	352x480@30.7 352x576@25.6 720x480@15.0 720x576@12.5
3	40500	1620	10000	12500	30000	40000	352x480@61.4 352x576@51.1 720x480@30.0 720x576@25.0
3.1	108000	3600	14000	17500	42000	56000	720x480@80.0 720x576@66.7 1280x720@30.0
3.2	216000	5120	20000	25000	60000	80000	1280x720@60.0 1280x1024@42.2
4	245760	8192	20000	25000	60000	80000	1280x720@68.3 1920x1080@30.1 2048x1024@30.0
4.1	245760	8192	50000	62500	150000	200000	1280x720@68.3 1920x1080@30.1 2048x1024@30.0
4.2	522240	8704	50000	62500	150000	200000	1920x1080@64.0 2048x1080@60.0
5	589824	22080	135000	168750	405000	540000	1920x1080@72.3 2048x1024@72.0 2048x1080@67.8 2560x1920@30.7 3680x1536@26.7
5.1	983040	36864	240000	300000	720000	960000	1920x1080@120.5 4096x2048@30.0 4096x2304@26.7

#### HIGH 10 INTRA PROFILE

The High 10 Profile constrained to all-Intra use.

#### HIGH 4:2:2 INTRA PROFILE

The High 4:2:2 Profile constrained to all-Intra use.

#### HIGH 4:4:4 INTRA PROFILE

The High 4:4:4 Profile constrained to all-Intra use.

#### CAVLC 4:4:4 INTRA PROFILE

The High 4:4:4 Profile constrained to all-Intra use and to CAVLC entropy coding (i.e., not supporting CABAC).

As a result of the Scalable Video Coding extension, the standard contains three additional scalable profiles, which are defined as a combination of the H.264/AVC profile for the base layer (2nd word in scalable profile name) and tools that achieve the scalable extension:

#### SCALABLE BASELINE PROFILE

Primarily targeting video conference, mobile, and surveillance applications, this profile builds on top of a constrained version of the H.264/AVC Baseline profile to which the base layer (a subset of the bitstream) must conform. For the scalability tools, a subset of the available tools is enabled.

#### SCALABLE HIGH PROFILE

Primarily targeting broadcast and streaming applications, this profile builds on top of the H.264/AVC High Profile to which the base layer must conform.

#### SCALABLE HIGH INTRA PROFILE

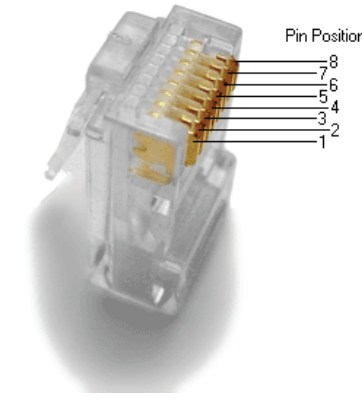
Primarily targeting production applications, this profile is the Scalable High Profile constrained to all-Intra use.

Information extracted from [www.wikipedia.org](http://www.wikipedia.org)

**WIRING**

Horizontal cables should be terminated using the T568A pin/pair assignments, "or, optionally, per [T568B] if necessary to accommodate certain 8-pin cabling systems". Despite this instruction, many organizations continue to implement T568B for various reasons, chiefly associated with tradition (T568B is equivalent to AT&T 258A). The United States National Communication Systems Federal Telecommunications Recommendations do not recognize T568B.

Ethernet Cable RJ45 Pinout					
Pin	T568A Pair	T568B Pair	Wire	T568A Color	T568B Color
1	3	2	tip	white/green stripe	white/orange stripe
2	3	2	ring	green solid	orange solid
3	2	3	tip	white/orange stripe	white/green stripe
4	1	1	ring	blue solid	blue solid
5	1	1	tip	white/blue stripe	white/blue stripe
6	2	3	ring	orange solid	green solid
7	4	4	tip	white/brown stripe	white/brown stripe
8	4	4	ring	brown solid	brown solid



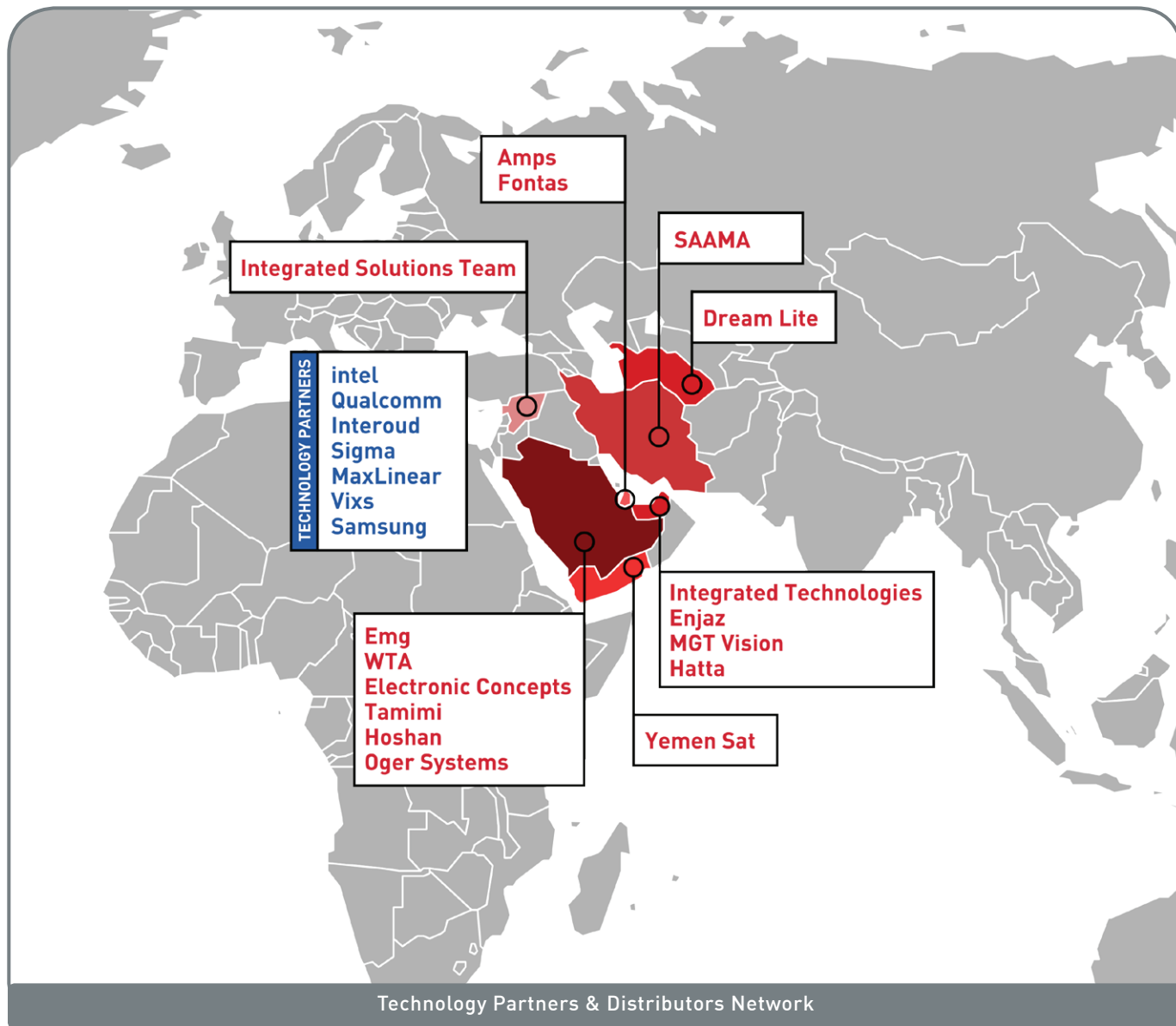
An Ethernet crossover cable is a type of Ethernet cable used to connect computing devices together directly where they would normally be connected via a network switch, hub or router, such as directly connecting two personal computers via their network adapters.

Automatic MDI/MDI-X Configuration is specified as an optional feature in the 1000BASE-T standard, meaning that straight-through cables will often work between Gigabit capable interfaces. This feature eliminates the need for crossover cables, making obsolete the uplink/normal ports and manual selector switches found on many older hubs and switches and greatly reducing installation errors.

Gigabit Ethernet Crossover RJ45 Pinout						
Pin	Connection 1: T568A			Connection 2: T568A Crossed		
	Signal	Pair	Color	Signal	Pair	Color
1	BI_DA+	3	white/green stripe	BI_DB+	2	white/orange stripe
2	BI_DA-	3	green solid	BI_DB-	2	orange solid
3	BI_DB+	2	white/orange stripe	BI_DA+	3	white/green stripe
4	BI_DB+	1	blue solid	BI_DD+	4	white/brown stripe
5	BI_DB-	1	white/blue stripe	BI_DD-	4	brown solid
6	BI_DB-	2	orange solid	BI_DA-	3	green solid
7	BI_DD+	4	white/brown stripe	BI_DC+	1	blue solid
8	BI_DD-	4	brown solid	BI_DC-	1	white/blue stripe

Gigabit Ethernet Crossover RJ45 Pinout						
Pin	Connection 1: T568B			Connection 2: T568B Crossed		
	Signal	Pair	Color	Signal	Pair	Color
1	BI_DB+	2	white/orange stripe	BI_DA+	3	white/green stripe
2	BI_DB-	2	orange solid	BI_DA-	3	green solid
3	BI_DA+	3	white/green stripe	BI_DB+	2	white/orange stripe
4	BI_DB+	1	blue solid	BI_DD+	4	white/brown stripe
5	BI_DB-	1	white/blue stripe	BI_DD-	4	brown solid
6	BI_DA-	3	green solid	BI_DB-	2	orange solid
7	BI_DD+	4	white/brown stripe	BI_DC+	1	blue solid
8	BI_DD-	4	brown solid	BI_DC-	1	white/blue stripe

AC.11	65	BAN.7111	115	BRS.7110	122	DA.100	165	SC/4DVBSS2-MMI	63	SP.2	154
AC.12	65	BAN.7143	115	BRS.7111	122	DA.200	165	SC/4QAM-MMI	63	SP.4	154
AC.121	65	BAV.0758	122	BRS.7112	122	DA.400	165	SC.258	134	SS.258	134
AM.100	66	BC.1695	122	BRS.7113	122	DM.10	163	SC.298	135	SS.298A	137
AM.200	66	BC.1697	122	BVR.1650	123	DS.100	89	SC.2138	138	SS.2178A	142
AM.300	66	BC.1699	122	BVR.1651	123	GH.100	94	SC.2178A	140	SS.2512	134
BAC.1520	123	BC.2687	122	BVR.7500	155	GL.100	97	SC.2512	134	SS.2516	134
BAC.1520	125	BC.2688	122	BVR.7509	155	GPLC	166	SC.2516	134	SS.2524	134
BAC.1520B	125	BC.2689	122	BVR.7511	155	HDMI 1.3 NYLON	167	SC.2524	134	SS.2532	134
BAC.1521	123	BC.8601	122	BVR.7513	155	HDMI 1.3 PVC	167	SC.2532	134	SS.2912A	137
BAC.1521	125	BC.8602	122	BVR.7515	155	IM.1500	31	SC.2912	135	SS.2916A	137
BAC.1523	123	BC.8603	122	BVR.7516	155	IM.12000	31	SC.2916	135	SS.2924A	137
BAC.1528	123	BC.8670	122	BVR.7518	122	IP-14.1	44	SC.2924	135	SS.2932A	137
BAC.1532	158	BC.8672	122	BVR7518	155	LN.8	115	SC.2932	135	SS.21712A	142
BAC.1533	158	BC.8675	122	BVR.7519	122	LN.11	114	SC.21312	138	SS.21716A	142
BAC.1534	158	BMP.0561	122	BVR7519	155	LN.22	114	SC.21316	138	SS.21724A	142
BAC.1536	125	BMP.0561	155	BVR.7520	155	LN.41	115	SC.21324	138	SS.21732A	142
BAC.1536	158	BMP.0563	155	BVR.7521	155	LN.44	115	SC.21332	138	T.14	47
BAC.1537	125	BMP.0622	155	BVR.7522	155	MA.1125	128	SC.21712A	140	T.14+	45
BAC.1537	158	BMP.0623	155	BVR.7523	155	MA.1140	128	SC.21716A	140	TP.212	153
BAC.1538	125	BMS.2660	123	BVR.7540	155	MA.1150	128	SC.21724A	140	VBR.7514	155
BAC.1538	158	BMS.2684	125	BVR7541	155	MA.4140	129	SC.21732A	140	VR.100	70
BAC.4552	158	BMS.2685	125	BVR7542	155	MA.4150	129	SCA.28	143	VTL-DEM-1.0	41
BAC.4553	158	BMS.2686	125	BVR.7543	122	MAF.1140	122	SCA.29	143	VTL-FUL-1.0	41
BAC.7026	113	BMS.2689	125	BVR.7543	123	MAF.1140	130	SCA.213	143	VTV-AAP-1.0	40
BAC.7029	113	BMS.2699	125	BVR.7543	125	PDS-BAS-1.0	41	SCA.217	143	VTV-DSC-1.0	40
BAL.1568P	123	BMS.8631	121	BVR.7543	155	PDS-LCC-1.0	41	SC/ADMSDIHD	64	VTV-DSM-1.0	40
BAL.1569	123	BMS.8640	121	BVR.7544	155	PDS-LCL-1.0	41	SC/ASIOUTMX	64	VTV-IAP-1.0	40
BAL.1569P	123	BMS.8641	121	BVR.7545	155	PDS-LCM-1.0	41	SC/CAB1PSSW	61	VTV-LTV-1.0	40
BAL.1579	123	BMS.8700	118	BVR.7832	122	PDS-LCX-1.0	41	SC/CAB1PSSW-IPOUT	61	VTV-MID-1.0	40
BAL.6020	125	BMS.8710	120	BVR.7832	123	PDS-MUL-1.0	41	SC/CAB1PSSW-IPOUT4CI	61	VTV-PVR-1.0	40
BAM.1090	122	BMS.8711	120	BVR.7832	125	PLT-BAS-1.0	41	SC/CAB1PSSW-IPOUT-IP0UT4CI	62	VTV-SAP-1.0	40
BAM.1100	122	BMS.8712	120	BVR.7832	155	PLT-EXT-1.0	41	SC/CAB4PS-03	61	VTV-STB-1.0	40
BAM.6000S	124	BMS.8720	119	CB.100	146	PS.100	87	SC/CAB4PS-03	62	VTV-VOD-1.0	40
BAN.6002B	110	BMS.8721	119	CB.200	146	PSU.10	142	SC/CAB4PS-04	61	W.05	162
BAN.6005	111	BMS.8722	119	CB.300	146	SC.2	152	SC/DVBSCS250	64	W.10	162
BAN.6007	111	BMS.8750	119	CB.400	146	SC.2	152	SC/GBIPIN-MMI	63	W.20	162
BAN.6021B	110	BMS.8751	119	CB.401	146	SC/2CI	64	SC/GBIPOUT	64		
BAN.7002	113	BMV.7306B	122	CN.1300	54	SC.3	152	SC/SWM	62		
BAN.7003	113	BRS.7100	122	CN.11200	54	SC/3ASI-MMI	63	SC/SWM	62		
BAN.7006	113	BRS.7101	122	DA.10	164	SC.4	152	SD/HPDDMRF	64		
BAN.7010	113	BRS.7102	122	DA.20	164	SC/4COFDM-MMI	63	SN.12	51		
BAN.7110	114	BRS.7103	122	DA.40	164	SC/4DVBS-MMI	63	SN.148	51		





**European Quality Assurance**

European Quality Assurance Spain

Certifica que el Sistema de Gestión de la I+D+i adoptado por la empresa

**BLUSENS TECHNOLOGY, S.L.U.**

C/ República Checa 60- 61. P.E. Costa Vella  
15707 Santiago de Compostela

Es conforme con los requisitos de la Norma

**UNE 166002:2006**

El Sistema de Gestión de la I+D+i se aplica a los ámbitos siguientes

Realización de proyectos de desarrollo e Innovación tecnológica en el ámbito de la electrónica de consumo y de la conectividad dentro del hogar.

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**CERTIFICADO DE CONFORMIDAD**

**Número 9153-E**

Fecha de emisión	28 / 03 / 2011
Fecha de expiración	27 / 03 / 2014

Firmado



Director



European Quality Assurance Spain, S.L. (EOA España) - Camino de la Zarzuela, 15- Bloque 2, 1ª Planta - 28023 Madrid  
Queda sujeto al "Procedimiento de Certificación y Condiciones Generales" establecido por EOA




Doc. Certificado 166002 Ver. 2 Dic 09

**UNE 166002:2006 for R&D Quality**