

Past PHY naming

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Existing and under development IEEE 802.3 PHYs (Page 1 of 7)

Name	Media (TX wavelength)	Reach	Clause	Notes
2BASE-TL	Voice grade subscriber UTP		61, 63	
10BASE5	Coax	500 m	8	Deprecated
FOIRL	Duplex multimode (850nm)	1 km	9.9	Superseded
10BASE2	Coax MAU	185 m	10	Deprecated
10BROAD36	CATV coax		11	Deprecated
10BASE-T	Balanced twisted-pair (2 pairs)	100 m	14	
10BASE-Te	Balanced twisted-pair (2 pairs)	100 m	14	Lower power
10PASS-TS	Voice grade subscriber UTP		61, 62	
10BASE-FP	Duplex multimode (850 nm)	1 km	16	Deprecated
10BASE-FB	Duplex multimode (850 nm)	2 km	17	Deprecated
10BASE-FL	Duplex multimode (850 nm)	2 km	18	
100BASE-BX10-D	Single singlemode (1550 nm)	10 km	58	
100BASE-BX10-U	Single singlemode (1310 nm)	10 km	58	
100BASE-FX	Duplex multimode (1310 nm)	2 km	26	
100BASE-LX10	Duplex singlemode (1310 nm)	10 km	58	
100BASE-T1	Single Twisted-pair	15 m	96	
100BASE-T2	Balanced twisted-pair (2 pairs)	100 m	32	Deprecated

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Name	Media (TX wavelength)	Reach	Clause	Notes
100BASE-T4	Balanced twisted-pair (4 pairs)	100 m	23	Deprecated
100BASE-TX	Balanced twisted-pair (2 pairs)	100 m	25	
1000BASE-BX10-D	Single singlemode (1490 nm)	10 km	59	
1000BASE-BX10-U	Single singlemode (1310 nm)	10 km	59	
1000BASE-CX	Twin-axial copper	25 m	39	
1000BASE-KX	Electrical backplane	n/a	70	
1000BASE-LX	Duplex singlemode (1310 nm)	5 km	38	
1000BASE-LX10	Duplex singlemode (1310 nm)	10 km	59	
1000BASE-PX10-D	Single singlemode PtMP (1490 nm)	10 km	60	1:16 split ratio
1000BASE-PX10-U	Single singlemode PtMP (1310 nm)	10 km	60	1:16 split ratio
1000BASE-PX20-D	Single singlemode PtMP (1490 nm)	20 km	60	1:16 split ratio
1000BASE-PX20-U	Single singlemode PtMP (1310 nm)	20 km	60	1:16 split ratio
1000BASE-PX30-D	Single singlemode PtMP (1490 nm)	20 km	60	1:32 split ratio
1000BASE-PX30-U	Single singlemode PtMP (1310 nm)	20 km	60	1:32 split ratio
1000BASE-PX40-D	Single singlemode PtMP (1490 nm)	20 km	60	1:64 split ratio
1000BASE-PX40-U	Single singlemode PtMP (1310 nm)	20 km	60	1:64 split ratio

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Name	Media (TX wavelength)	Reach	Clause	Notes
1000BASE-RHA	Plastic Optical Fiber	50 m	114	IEEE P802.3bv
1000BASE-RHB	Plastic Optical Fiber	50 m	114	IEEE P802.3bv
1000BASE-RHC	Plastic Optical Fiber	40 m	114	IEEE P802.3bv
1000BASE-SX	Duplex multimode (850 nm)	550 m	38	
1000BASE-T	Balanced twisted-pair (4 pairs)	100 m	40	
1000BASE-T1	Single Twisted-pair	15 m	98	
2.5GBASE-T	Balanced twisted-pair (4 pairs)	100 m	126	IEEE P802.3bz
5GBASE-T	Balanced twisted-pair (4 pairs)	100 m	126	IEEE P802.3bz
10GBASE-CX4	Twin-axial copper	15 m	54	
10GBASE-ER	Duplex singlemode (1550 nm)	40 km	52	
10GBASE-EW	Duplex singlemode (1550 nm)	40 km	52	
10GBASE-KR	Electrical backplane	n/a	72	
10GBASE-KX4	Electrical backplane	n/a	71	
10GBASE-LR	Duplex singlemode	10 km	52	
10GBASE-LRM	Duplex multimode (1310 nm)	220 m	68	

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Name	Media (TX wavelength)	Reach	Clause	Notes
10GBASE-LW	Duplex singlemode (1310 nm)	10 km	52	
10GBASE-LX4	Duplex multimode (1275-1331 nm)	300 m	53	
	Duplex singlemode (1275-1331 nm)	10 km		
10GBASE-SR	Duplex multimode (850 nm)	400 m	52	
10GBASE-SW	Duplex multimode (850 nm)	400 m	52	
10GBASE-T	Balanced twisted-pair (4 pairs)	100 m	55	
10GPASS-XR	Coax Distribution Network	n/a	100	IEEE P802.3bn
10/1GBASE-PRX-D1	Single singlemode PtMP (1577 nm)	10 km	75	1:16 split ratio
10/1GBASE-PRX-U1	Single singlemode PtMP (1310 nm)	10 km	75	1:16 split ratio
10/1GBASE-PRX-D2	Single singlemode PtMP (1577 nm)	10 km	75	1:32 split ratio
		20 km		1:16 split ratio
10/1GBASE-PRX-U2	Single singlemode PtMP (1310 nm)	10 km	75	1:32 split ratio
		20 km		1:16 split ratio
10/1GBASE-PRX-D3	Single singlemode PtMP (1577 nm)	20 km	75	1:32 split ratio
10/1GBASE-PRX-U3	Single singlemode PtMP (1310 nm)	20 km	75	1:32 split ratio

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Name	Media (TX wavelength)	Reach	Clause	Notes
10/1GBASE-PRX-D4	Single singlemode PtMP (1577 nm)	20 km	75	1:64 split ratio
10/1GBASE-PRX-U4	Single singlemode PtMP (1310 nm)	20 km	75	1:64 split ratio
10GBASE-PR-D1	Single singlemode PtMP (1577 nm)	10 km	75	1:16 split ratio
10GBASE-PR-U1	Single singlemode PtMP (1270 nm)	10 km	75	1:16 split ratio
10GBASE-PR-D2	Single singlemode PtMP (1577 nm)	10 km 20 km	75	1:32 split ratio 1:16 split ratio
10GBASE-PR-U2	Single singlemode PtMP (1270 nm)	10 km 20 km	75	1:32 split ratio 1:16 split ratio
10GBASE-PR-D3	Single singlemode PtMP (1577 nm)	20 km	75	1:32 split ratio
10GBASE-PR-U3	Single singlemode PtMP (1270 nm)	20 km	75	1:32 split ratio
10GBASE-PR-D4	Single singlemode PtMP (1577 nm)	20 km	75	1:64 split ratio
10GBASE-PR-U4	Single singlemode PtMP (1270 nm)	20 km	75	1:64 split ratio

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Name	Media (TX wavelength)	Reach	Clause	Notes
25GBASE-CR	Twin-axial copper	5 m	110	IEEE P802.3by
25GBASE-CR-S	Twin-axial copper	3 m	110	IEEE P802.3by
25GBASE-KR	Electrical backplane	n/a	111	IEEE P802.3by
25GBASE-KR-S	Electrical backplane	n/a	111	IEEE P802.3by
25GBASE-SR	Duplex multimode (850 nm)	100 m	112	IEEE P802.3by
25GBASE-T	Balanced twisted-pair (4 pairs)	30 m	113	IEEE P802.3bq
40GBASE-CR4	Twin-axial copper	7 m	85	
40GBASE-ER4	Duplex singlemode (1271-1331 nm)	40 km	87	
40GBASE-FR	Duplex singlemode (1550 nm)	2 km	89	
40GBASE-KR4	Electrical backplane	n/a	84	
40GBASE-LR4	Duplex singlemode (1271-1331 nm)	10 km	87	
40GBASE-SR4	Parallel multimode (850 nm)	150 m	86	
40GBASE-T	Balanced twisted-pair (4 pairs)	30 m	113	IEEE P802.3bq

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Name	Media (TX wavelength)	Reach	Clause	Notes
100GBASE-CR4	Twin-axial copper	5 m	92	
100GBASE-CR10	Twin-axial copper	7 m	85	
100GBASE-ER4	Duplex singlemode (1295-1309 nm)	40 km	88	
100GBASE-KR4	Electrical backplane	n/a	93	
100GBASE-KP4	Electrical backplane	n/a	94	
100GBASE-LR4	Duplex singlemode (1295-1309 nm)	10 km	88	
100GBASE-SR4	Parallel multimode (850 nm)	150 m	86	
100GBASE-SR10	Parallel multimode (850 nm)	150 m	86	
400GBASE-DR4	Duplex singlemode (1304-1317 nm)	500 m	122	IEEE P802.3bs
400GBASE-FR8	Duplex singlemode (1273-1309 nm)	2 km	123	IEEE P802.3bs
400GBASE-LR8	Duplex singlemode (1273-1309 nm)	10 km	123	IEEE P802.3bs
400GBASE-SR16	Parallel multimode (850 nm)	100 m	121	IEEE P802.3bs

A few comments

- Evolved where required
 - For example we moved from just indicating media ('F' for fibre) in 100 Mb/s to wavelength ('S' and 'L' for short and long wavelength) in 1 Gb/s
- Avoided conflicting definition
 - Not had same letter in the same position meaning something different
- Provided limited description of naming in standard
 - Only directly addressed by e.g. in subclause 1.2.3 'e.g., "T" for twisted pair, "S" for short wavelength optics, "X" for a block PCS coding used for that speed of operation'

nMTYPEADD

nTYPEm

Segment length
Maximum segment length, rounded up to the nearest 100 meters, divided by 100 meters

Modulation type:
BASE Baseband
BROAD Broadband

Data rate:
10 10Mb/s

Note: Above is naming convention for 10BASE5, 10BASE2 and 10BROAD36

Data rate:	
2	2Mb/s
10	10Mb/s
100	100Mb/s
1000	1000Mb/s
2.5G	2.5Gb/s
5G	5Gb/s
10G	10Gb/s
10/1G	10Gb/s downstream, 1Gb/s upstream
25G	25Gb/s
40G	40Gb/s
100G	100Gb/s
400G	400Gb/s

nMTYPE-LLLm-Eo

Modulation type:
BASE Baseband
BROAD Broadband
PASS Passband

Additional distinction:

First letter (Media/Wavelength/Reach)

- B Bidirectional optics
- D Parallel single mode (500m)
- C twin axial Copper
- E Extra long λ (1510nm) / reach (40 km)
- F Fiber (2 km)
- K backplane
- L Long λ (1310nm) / reach (10 km)
- P Passive optics
- R Red LED plastic optical fiber (PoF)
- S Short λ (850nm) / reach (100 m)
- T Twisted pair

Length/Pairs/Lanes

- Optical PHY with data rate \leq 1000 Mb/s (optional)
 - Maximum segment length in km
- EPON PHYs with data rate = 1000Mb.s
 - 10 10 km and a split ratio of at least 1:16
 - 20 20 km and a split ratio of at least 1:16
 - 30 20 km and a split ratio of at least 1:32
 - 40 20 km and a split ratio of at least 1:64
- Copper PHY with data rate \geq 100 Mb/s (optional)
 - Number of pairs used
- PHY with data rate \geq 10 Gb/s
 - Number of lanes

Optical budget (10Gb/s EPON PHYs only)

- 1 10 km, split ratio of at least 1:16
- 2 10 km, split ratio of at least 1:32 or 20 km, split ratio of at least 1:16
- 3 20 km, split ratio of at least 1:32
- 4 20 km, split ratio of at least 1:64

Second letter (reach/Power/PCS encoding)

- B Backbone
- e Lower power energy-efficient
- H PAM16-THP encoding
- L Link (10BASE-FL), Long reach (2BASE-TL)
- P Passive optics
- R scRambled coding (64B66B)
- S Short reach
- W WAN coding (SONET/SDH)
- X eXternal sourced coding (4B5B, 8B10B)

Plastic Optical Fibre (PoF) PHYs only

- A -6dB transmit power
- B -7dB transmit power
- C -9dB transmit power
- 10GBASE-LRM only
 - M Multimode
- (1/10Gb/s EPON PHYs only)
 - X eXternal sourced coding (4B5B, 8B10B)

End (Asymmetric PHYs only)

- D Downstream (OLT)
- U Upstream (ONU)
- O central Office
- R subscriber
- 25Gb/s Copper PHYs
 - S Short reach

Note - The PCS and PMD family names are based on use of either the first or second letter. Examples are 10GBASE-L for 10Gb/s long wavelength PMD family and 10GBASE-R for 10Gb/s scrambled encoding PCS family.