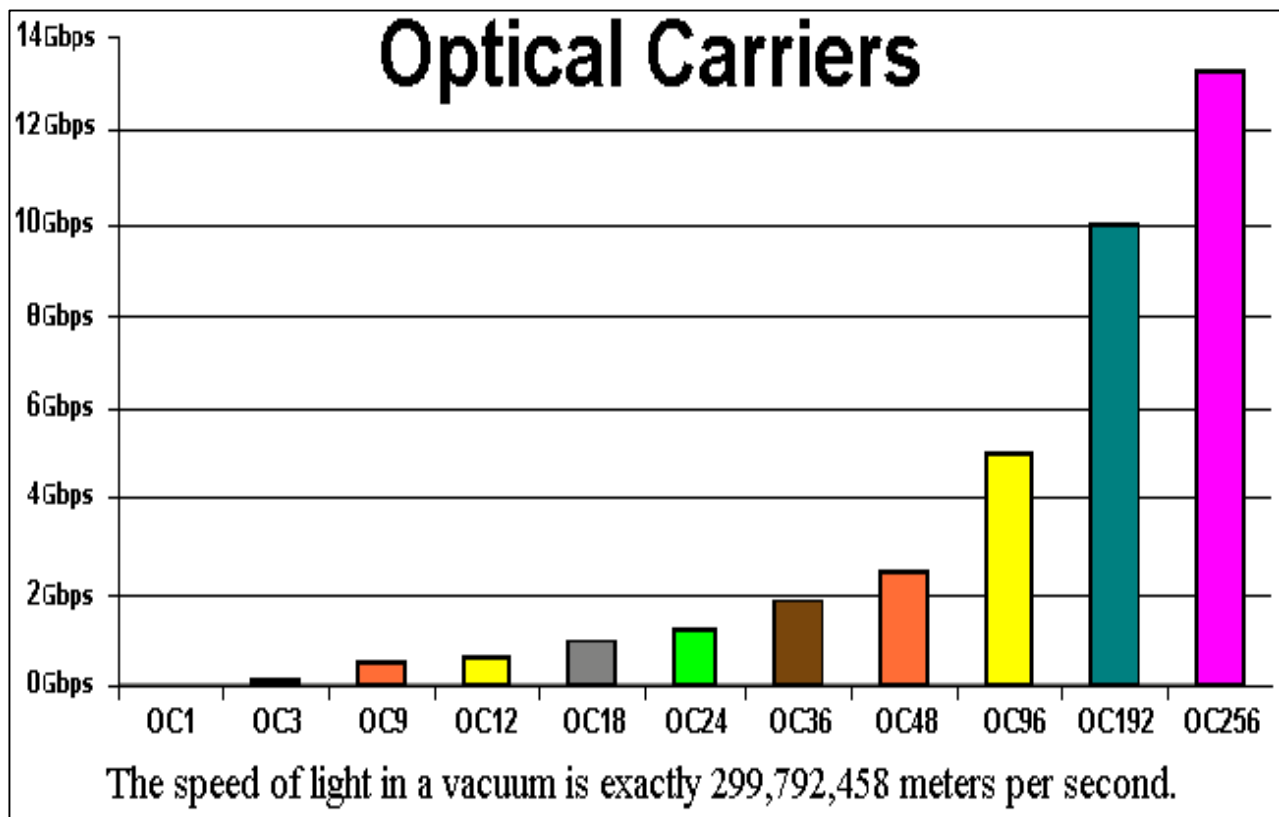


Standard Connection Speeds



A detailed listing of standard analog, digital and fiberoptic communication connection speeds.

By:

Eric A. Arnold - 12/21/00

<http://home.cfl.rr.com/ea/ConnectSpeed.htm>

Interface or Protocol	Kbps Mbps Gbps Tbps	Date	General Description with Creator & Creation Timelines Transmitting Distances, Frequencies Connection & Cable types.
1,200 baud	1.2K	1962	2nd Modem speed. Basic telephone line transmission rate
1000Base-CX	1.000G	1998	25 meters 2-pair 150 ohms STP, Gigabit Ethernet, copper cable.
1000Base-F	1.000G	1996	Gigabit Ethernet with Fiberoptic Cable.
1000Base-LX	1.000G	1998	550 meters Gigabit Ethernet, long wavelength laser transmitters, fiberoptic cable.
1000Base-SX	1.000G	1998	5000 meters Gigabit Ethernet, short wavelength laser transmitters with fiberoptic cable.
1000Base-T	1.000G	1999	100 meters Gigabit Ethernet, four pairs of 100-ohm Cat5 or better cable
1000Base-X	1.000G	1998	Gigabit Ethernet, with twisted pair cable.
100Base-F	100.000M	1984	Fast Ethernet with Fiberoptic Cable.
100Base-T	100.000M	1993	100 meters, Fast Ethernet (Unshielded Twisted Pair) Cat5
100Base-T2	100.000M	1991	Fast Ethernet (2-pairs of normal-quality twisted-pair wire) Cat3
100Base-T4	100.000M	1991	100 meters Fast Ethernet (4-pairs of normal-quality twisted-pair wire) Cat3
100Base-TX	100.000M	1993	220 meters, Fast Ethernet (Unshielded Twisted Pair) Cat5
100VG-AnyLAN	100.000M	1997	200 meters, Voice Grade Cat3+ on Any LAN, By Hewlet Packard
10Base-2	10.000M	1985	185 meters, (Cheapernet) Thin Net Ethernet 50 ohms ((Thin Coaxial)
10Base-5	10.000M	1985	500 meters, Thick Net Ethernet 50 ohms (Thick Coaxial)
10Base-F	10.000M	1993	2000 meters, (fiberoptic)
10Base-T	10.000M	1995	100 meters, Ethernet (Unshielded Twisted Pair) Cat3
10Broad36	10.000M	1985	3600 meters, Ethernet specification using broadband coaxial (CATV) cable.
14,400 baud	14.4K	1991	V.32bis Modem, V.17 fax
1Base5	1.000M	1986	250 Meters Two pairs of twisted telephone cable.
2,400 baud	2.4K	1980	3rd Modem speed
28,800 baud	28.8K	1994	V.34, Rockwell V.Fast Modems
33,600 baud	33.6K	1996	Maximum data transmission rate with copper telephone wires.
9,600 baud	9.6K	1984	4th Modem speed
ADSL	8.000M	1997	Asymmetric DSL, sends at 1.500M, receives at 8.000M
AGP 2.0	266.000M	1998	Accelerated Graphics Port, By: Intel
ARCnet	2.500M	1968	Attached Resource Computer Network By: Datapoint.
ARCnet Plus	20.000M	1992	Attached Resource Computer Network By: Datapoint.
ATM	622.000M	1988	Asynchronous Transfer Mode
ATM-25	25.600M	1991	Asynchronous Transfer Mode, uses fixed length packets called cells.
Bell 103	300bps	1965	Asynchronous data transmission, full-duplex, 2-wire dialup or leased line.
Bell 212a	1.2K	1988	Synchronous - asynchronous data transmission, full-duplex operation, 2-wires.
B-ISDN	1.500M	1988	Broadband Integrated Services Digital Network
CAIS bus	10.000M	1991	Common Airborne Instrumentation System, a transformer coupled comm. link.
CANTAT-3	5.000G	1994	Cable to Nova Scotia via Iceland & Faroes, Northern England, Denmark & Germany.
Cat1	1.2K	1985	Basic telephone wire, Voice Only
Cat2	4.000M	1990	1Mhz Used for Apple computer's LocalTalk
Cat3	10.000M	1991	16MHz Voice Grade twisted-pair wire.
Cat4	20.000M	1990	20MHz Twisted-pair wire, Token Ring
Cat5	100.000M	1993	100MHz, Unshielded twisted-pair wire, Fast Ethernet
Cat6	2.400G	1999	250MHz, Cable standards under development
Cat7	100.000M	1997	600Mhz, Unshielded twisted-pair wire (standard pending)
Category 1	1.2K	1985	Basic telephone wire, Voice Only
Category 2	4.000M	1990	1Mhz Used for Apple computer's LocalTalk
Category 3	10.000M	1991	16MHz Voice Grade twisted-pair wire.
Category 4	20.000M	1990	20MHz Twisted-pair wire, Token Ring
Category 5	100.000M	1993	100MHz, Unshielded 4 twisted-pair wire, Fast Ethernet, RJ-45 connector.
Category 6	2.400G	1999	250MHz, Cable standards under development
Category 7	100.000M	1997	600Mhz, Unshielded twisted-pair wire (standard pending)
CCITT V.21	300bps	1965	The standard for full-duplex communication at 300 baud in Japan and Europe.
CDDI	100.000M	1993	Copper Data Distribution Interface, the copper version of FDDI
Dataphone	300bps	1958	1st Modem: Bell Labs, Hayes AT commands.
DDRSDRAM	2.100G	2000	Double Data Rate Synchronous Dynamic Random Access Memory, By: Crucial
DECnet PhaseIV	10.000M	1983	First released by Digital in 1983 for its VMS and RSX-11 systems.
DRDRAM	1.600G	1999	Direct Rambus Dynamic Random Access Memory, By: Rambus, Inc.

Interface or Protocol	Kbps Mbps Gbps Tbps	Date	General Description with Creator & Creation Timelines Transmitting Distances, Frequencies Connection & Cable types.
DS-0	64.0K	1962	Digital Signal Level 0, 1 Channel (1/24 of T1)
DS-1	1.544M	1975	Digital Signal Level 1, 24 Channels (1xT1)
DS-1c	3.152M	1985	Digital Signal Level 1c, 48 Channels (2xT1)
DS-2	6.312M	1969	Digital Signal Level 2, 96 Channels (4xT1)
DS-3	44.736M	1972	Digital Signal Level 3, 672 Channels (28xT1)
DS-3c	89.472M		Digital Signal Level 3c, 1344 Channels (56xT1)
DS-3d	135.000M		Digital Signal Level 3d, (87xT1) By: AT&T
DS-4	274.176M	1976	Digital Signal Level 4, 4032 Channels (168xT1)
DWDM	10.900T	2001	Dense Wave Division Multiplexing, multiple data signals - different wavelengths of light.
E-0	64.0K		1 Channel, Europe & Japan
E-1	2.048M	1997	30 Channels, Europe & Japan, 1.920M usable
E-2	8.448M		120 Channels, Europe & Japan
E-3	34.368M		480 Channels, Europe & Japan
E-4	139.264M		1920 Channels, Europe & Japan
E-5	565.148M		7680 Channels, Europe & Japan
ECP/EPP	24.000M	1994	High performance bi-directional parallel port.
EDGE	384.0K	2000	Enhanced Data GSM Environment. Global System for Mobile (GSM) wireless service.
EIDE	16.600M	1993	Enhanced Integrated Drive Electronics
EISA	33.000M	1988	Extended Industry Standard Architecture
ESCON	150.000M	1996	Enterprise Systems Connection - A star topology invented By: IBM
Ethernet	1.000G	1976	10M to 1000M By: Xerox Corp.
Euro ISDN-PRI	2.048M		Primary Rate Interface 30x64K B-channels, 1x64K D-channel on E1, 30B+D
Euro-ISDN	144.0K	1993	128K usable. Allows full transparent interworking between all European countries
Facsimile	9.6K	1980	FAX Machines / FAX Modems
Fast Wide SCSI	20.000M	1986	1.5m, Small Computer System Interface
FDDI	100.000M	1993	Fiber Distributed Data Interface, uses a token ring protocol.
FibreChannel	125.000M	1988	Fiberoptic-based, computer peripheral architecture.
FireWire	400.000M	1995	A serial SCSI variant developed by Apple
FLAG	5.300G	1997	Fiber-optic Link Around the Globe, 27,300km linking Great Britain and Japan.
G.lite	1.500M	1998	18000 feet Asymmetric Digital Subscriber Line, sends at 512K, receives at 1.5M
GeoPort	28.8K	1996	A serial port for Apples that provides interface between telephone and computer
GPRS	114.0K	1999	General Packet Radio Service, RF in space (wireless)
HDSL	1.544M	1991	12000 ft, High bit-rate DSL, sends at 2.048M, receives at 1.544M
HIPPI-PH	1.600G	1987	High-Performance Parallel Interface physical layer
HSCSD	57.6K	1999	High Speed Circuit Switched Data, (wireless)
HSSI	53.000M	1989	50 ft, High-Speed Serial Interface
IDSL	1.500M	1997	18000 ft, DSL over ISDN, sends 64K-1.5M, receives 1.5-9M
InfiniBand	2.500G	2000	Next Generation I/O By: InfiniBand Trade Association
IrDA	4.000M	1994	Infrared Data Association, wireless communication standard
ISDN-BRI	128.0K	1980	BRI (Basic Rate Interface) 2x64K B-channels, 1x64K D-channel
ISDN-PRI	1.544M	1988	Primary Rate Interface 23x64K B-channels, 1x64K D-channel on T1, 23B+D
ITU V.22	1.2K	1988	Standard protocol for transmitting data on telephone lines
ITU V.22bis	2.4K	1988	Standard protocol for transmitting data with telephone lines.
ITU V.29	9.6K	1988	Standard protocol for transmitting data with telephone lines
ITU V.32	9.6K	1991	Standard protocol for transmitting data with telephone lines
ITU V.32bis	14.4K	1991	Standard protocol for transmitting data with telephone lines
ITU V.34 (V.fast)	36.6K	1998	Standard protocol for transmitting data with telephone lines
ITU V.90	56.0K	1998	Standard protocol for transmitting data with telephone lines
J-0	64.0K		1 Channel, Japanese
J-1	1.544M		24 Channels, Japanese
J-1c	3.152M		48 Channels, Japanese
J-2	6.312M		96 Channels, Japanese
J-3	32.064M		480 Channels, Japanese
J-3c	97.728M		1440 Channels, Japanese
J-4	97.200M		5760 Channels, Japanese

Interface or Protocol	Kbps Mbps Gbps Tbps	Date	General Description with Creator & Creation Timelines Transmitting Distances, Frequencies Connection & Cable types.
K56flex	48.0K	1998	V.90, Proprietary protocol By: Lucent Technologies
LDT bus	12.000G	2001	AMD's Lighting Data Transport bus.
LocalTalk	230.0K	1983	300m Apple Computer's AppleTalk networking scheme.
MAX3100	230.0K	1997	Multidrop communication technique known as 9-bit mode. the world's smallest UART
MCA	20.000M	1987	Micro Channel Architecture By: IBM
Modem, Analog	48.0K	1958	MOdulator-DEModulator, sends at 33.6K, recieves at 48K
Modem, Cable	1.500M	1997	Sends at 3M, recieves at 1.5M.
Modem, Digital	56.0K	1990	MOdulator-DEModulator, sends at 56K, recieves at 56K
Modem, Null	115.2K	1987	Special cable allowing two computers to communicate with RS-232 ports.
N-ISDN	64.0K	1976	Narrowband Integrated Services Digital Network
OC-12c	622.080M		15000 meters Optical Carrier Level 12, fiberoptic, 8064 Voice Circuits
OC-18c	933.120M		Optical Carrier Level 18, fiberoptic, 12096 Voice Circuits
OC-192c	9.953G	2000	Optical Carrier Level 192, fiberoptic, 129024 Voice Circuits
OC-1c	51.840M		Optical Carrier Level 1, fiberoptic, 672 Voice Circuits
OC-24c	1.244G		Optical Carrier Level 24, fiberoptic, 16128 Voice Circuits
OC-256	13.271G		Optical Carrier Level 256, fiberoptic, 172032 Voice Circuits
OC-3072	159.252G		Optical Carrier Level 3072, fiberoptic, 2064384 Voice Circuits
OC-36c	1.866G		Optical Carrier Level 36, fiberoptic, 24192 Voice Circuits
OC-3c	155.520M		Optical Carrier Level 3, fiberoptic, 2016 Voice Circuits
OC-48c	2.488G	2000	Optical Carrier Level 48, fiberoptic, 32256 Voice Circuits
OC-768	39.813G	2002	Optical Carrier Level 768, fiberoptic, 516096 Voice Circuits
OC-96c	4.976G		Optical Carrier Level 96, fiberoptic, 64512 Voice Circuits
OC-9c	466.560M		Optical Carrier Level 9, fiberoptic, 6048 Voice Circuits
OX16C952	3.000M	1992	The newest and fastest PC UART, the deepest FIFOs 128-byte buffer.
Parallel Port	150.0K	1981	IBM's first printer port.
PC150 SDRAM	1.200G	2000	PC150 Synchronous DRAM, By: Mushkin
PCI 2.2	533.000M	1993	Peripheral Component Interconnect By: Intel
PCI-X	1.000G	1999	133 MHz Industry-standard I/O interconnect By: Compaq
POTS	1.2K	1877	Plain Old Telephone Service, the first commercial telephones
PS/2	115.2K	1987	By IBM for keyboards and pointing devices.
QuickRing	1.700G	1992	A high speed point-to-point data transfer architecture from Apple
RDRAM	1.600G	1999	Rambus Dynamic Random Access Memory, By: Rambus, Inc.
RoX-II bus	12.800G	1998	(Ring Of Switches) bus architecture By: Allayer
RS-232	20.0K	1987	50ft, Serial Port, single-ended data transmission
RS-232e	115.2K	1987	50ft, Serial Port, single-ended data transmission
RS-366	20.0K	1988	Uses RS-232 electrical specs, different connector pinouts and signal functions.
RS-422a	10.000M		4000ft, Differential Data Transmission (Apple)
RS-423	100.0K	1995	4000ft, Single-ended data transmission
RS-449	2.000M	1970	1km, Serial binary data interchange
RS-485	10.000M		4000ft, Balanced line interface, 2-wire, half-duplex, differential.
RS-530	10.000M		30km, Fiberoptic Point to Point
Satellite Dish	400.0K	1957	RF in space, wireless WAN, sends at 33.6K, recieves at 400K
SciNet	2.325G	1995	fiberoptic, part of the vBNS backbone
SDRAM	2.100G	1996	Synchronous Dynamic Random Access Memory
SDSL	1.544M	1998	12000 ft, Symmetric DSL, sends at 2.048M, recieves at 1.544M
SERDES	2.500G	1993	SERializer/DESerializer ASIC transceiver core By: Texas Instruments
SLDRAM	1.600G	1997	Synchronous Link Dynamic Random Access Memory, By: Synclink
SONET	2.488G	1988	Synchronous Optical NETWORK-Designed by the telcos.
Standard SCSI	10.000M	1995	SCSI-1, Small Computer System Interface
StarLAN	1.000M	1970	250 Meters Two pairs of twisted telephone cable.
STM-1	155.520M		Synchronous Transport Module, Level 1
STM-16	2,488G	1997	Synchronous Transport Module, Level 16
STM-3	466.560M		Synchronous Transport Module, Level 3
STM-4	622.080M		Synchronous Transport Module, Level 4
STS-12c	622.080M	1986	Synchronous Transport Signal, Level 12

Interface or Protocol	Kbps Mbps Gbps Tbps	Date	General Description with Creator & Creation Timelines Transmitting Distances, Frequencies Connection & Cable types.
STS-1c	51.840M	1986	Synchronous Transport Signal, Level 1
STS-3c	155.520M	1986	Synchronous Transport Signal, Level 3
STS-48c	2,488G	1986	Synchronous Transport Signal, Level 48
STS-9c	466.560M	1986	Synchronous Transport Signal, Level 9
T-1	1.544M	1957	Trunk Level 1, 24 Channels (1xT1) Time-Division Multiplexing By: AT&T
T-1c	3.152M	1985	Trunk Level 1c, 48 Channels (2xT1) Time-Division Multiplexing By: AT&T
T-2	6.312M		Trunk Level 2, 96 Channels (4xT1) Time-Division Multiplexing By: AT&T
T-3	44.736M	1991	Trunk Level 3, 672 Channels (28xT1) Time-Division Multiplexing By: AT&T
T-3c	89.472M		Trunk Level 3c, 1344 Channels (56xT1) Time-Division Multiplexing By: AT&T
T-3d	135.000M		Trunk Level 3d, (87xT1) Time-Division Multiplexing By: AT&T
T-4	274.176M		Trunk Level 4, 4032 Channels (168xT1) Time-Division Multiplexing By: AT&T
TAT-1	51-calls	1956	The first transatlantic coaxial telephone cable, 7,802km Out-of-service retired 1978
TAT-10	565.000M	1992	Fiber optic cable network, links United States with Germany and The Netherlands.
TAT-11	565.000M	1993	France Telecom, fiber optic cable network from Manahawkin to England and France.
TAT-12	565.000M	1996	1st Fiber optic cable network to operate as a fully backed-up "self-healing" cable loop.
TAT-13	565.000M	1996	2nd Fiber optic cable network to operate as a fully backed-up "self-healing" cable loop.
TAT-14	640.000G	2000	France Telecom, fiber optic cable network spans 15,428 kilometers.
TAT-8	565.000M	1988	Fiber optic cable network laid from Tuckerton NJ to England and France.
TAT-9	565.000M	1991	Fiber optic cable network laid from North America to Europe.
Token Ring	16.000M	1982	LAN, a type of computer network By: IBM
TPC-4	560.000M	1992	Trans-Pacific Cable 4, Vancouver Island & Manchester, CA on the Pacific Ocean.
Twinax	2.000M	1998	4000 ft, Unike coax has 2 conductors in center.
UART 16450	38.4K	1995	Universal Asynchronous Receiver-Transmitter, 1-byte buffer.
UART 16550	115.2K	1995	Universal Asynchronous Receiver-Transmitter, 16-byte buffer.
UART 16650	460.8K	1995	Universal Asynchronous Receiver-Transmitter, 32-byte buffer.
UART 16750	921.6K	1995	Universal Asynchronous Receiver-Transmitter, 64-byte buffer.
UART 8250	19.2K	1981	Universal Asynchronous Receiver-Transmitter, 0-byte buffer.
Ultra SCSI	40.000M	1993	SCSI-3, Small Computer System Interface
UMTS	3.500M	1998	Universal Mobile Telephone System or often referred to as 3G
USB 1.1	12.000M	1996	5 meters, Universal Serial Bus, external bus standard
USB 2.0	480.000M	1999	Universal Serial Bus, external bus standard v2.0
V-ADSL	51.000M	1995	51.00M at 1000 feet & 25.600Mbps at 3000-4000 feet
vBNS	2.500G	1986	Very high-speed Backbone Network Service
VDSL	52.000M	1995	(1995) Very high speed DSL, send 1.5-2.3M, receive 13-52M
VMEbus	40.000M	1980	Industrial controls: factory automation, robotics, etc. By: Motorola
VSAT	40.000M	1958	Very Small Aperture Terminal Satellite Communication, antenna of 1.8 meter dia.
WidebandATM	1.000G	1996	Gigabit Ethernet with fiber optic cable.
Wireless LAN	11.000M	1997	Ethernet performance for use within premises and zones. 802.11 technologies
X2	48.0K	1998	V.90, Proprietary protocol By: US Robotics
ZV-Port	27.000M	1996	Zoomed Video via PCMCIA bus to VGA controller.

Note

According to IEEE Spectrum (August 1999), a leading magazine, for the Electronic and Computer industries, new standards have been proposed, to distinguish between powers of two and powers of ten. Kilo, is defined as 1000, but, in the computer industry, the value is 1024. Similarly, Mega means 1 million, but is 1048576, by computer standards.

Disclaimer

All information contained within this list, was acquired through many hours of searching the web. As technology changes, new information tends to get lost within thousands of pages. Every attempt has been made, to ensure the list is accurate and up to date. Contributions, comments and corrections are always welcome! Hopefully, this data will prove to be useful, and save you time in your searching efforts.

Have a nice day!

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