NETWORKING GUIDE

designed to be better.™

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DID YOU KNOW?

the number of **IP CONNECTED DEVICES** will nearly triple the population of Earth by **2017**

Wi-Fi is a **SHARED BANDWIDTH** medium

over **57%** of all web traffic today is **STREAMING VIDEO TRAFFIC**

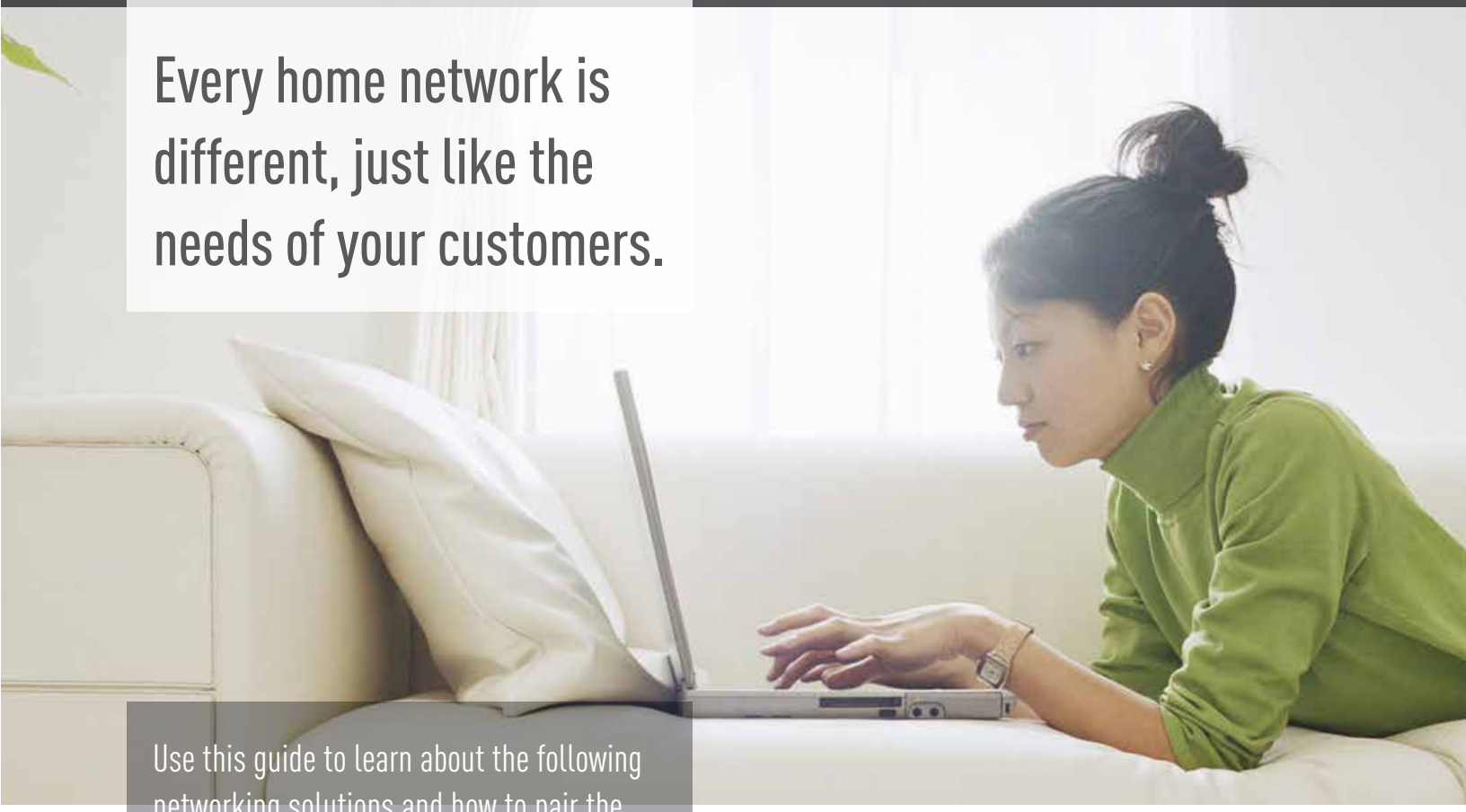
High speed networks can be transmitted over existing **COAX CABLE & ELECTRICAL POWER LINES** in the home

STREAMING VIDEO TRAFFIC will increase **4-fold** between 2012 and 2017

The home network is more critical than ever before.

ARE YOU CAPITALIZING ON THE OPPORTUNITY?

Every home network is different, just like the needs of your customers.



Use this guide to learn about the following networking solutions and how to pair the best products to the right application.

WIRED

Wired Ethernet networks utilize Cat 5e, Cat 6, or Cat 6a twisted pair cable to transmit data around the home.

WIRELESS

Wireless networks use the Wi-Fi standard to transmit data to mobile devices around the home.

POWERLINE

The HomePlug AV standard allows a wired Ethernet network to be expanded over the existing electrical power lines in the home.

COAX

The MoCA (Multimedia over Coax Alliance) standard allows a wired Ethernet network to be expanded over the existing coax cable system in the home.

*Reference page 8 for wiring diagrams and additional features of each networking technology.

WIRED NETWORKING

A professionally installed wired Ethernet network is the best solution to future-proof a home network for the fastest possible speeds. It is most cost-effective when installed in a new home's structured wiring system.

ENCLOSURE-MOUNTED ROUTERS AND SWITCHES

DA1002

DA1008

DA1458

DA1004

DA1054

GIGABIT ETHERNET (Throughput up to 1000Mbps)

PART NO.	DESCRIPTION
DA1054	4-Port Gigabit Router/Switch CAN OPERATE AS A 4-PORT ROUTER OR 5-PORT SWITCH
DA1458	8-Port Gigabit Switch with 4-Ports PoE
DA1008	8-Port Gigabit Switch

FAST ETHERNET (Throughput up to 100Mbps)

DA1004	4-Port Fast Ethernet Router/Switch
DA1002	5-Port Fast Ethernet Network Switch

Power supplies sold separately
DA1458 requires the PW1248 48V, 100W power supply or equivalent
All others require PW7760 12V, 18W power supply or equivalent

SWITCHES

DA1015-V1

DA1018-V1

DA2524 COMING SOON!

PART NO.	DESCRIPTION
DA1015-V1	Desktop 5-Port Gigabit Ethernet Switch
DA1018-V1	Desktop 8-Port Gigabit Ethernet Switch
DA2524	Rack Mount 24-Port Gigabit Ethernet Switch

POWER OVER ETHERNET (POE) INJECTORS

DA2400

DA2401

AC1025

PART NO.	DESCRIPTION
DA2400	4-Port Power Over Ethernet Injector 802.3at COMPLIANT, FAST ETHERNET SPEEDS
DA2401	4-Port High Power, Power Over Ethernet Injector 802.3af COMPLIANT, GIGABIT SPEEDS
AC1025	Power over Ethernet Mounting Plate

WIRELESS NETWORKING

When using a mobile device, Wi-Fi provides the ultimate network convenience and freedom. With the right system design and equipment, a Wi-Fi network can cover the entire home.

WIRELESS ACCESS POINTS

DA1101

DA2131-V1

DA2155-V1

PART NO.	DESCRIPTION
DA1101	802.11n Wireless Access Point SPEEDS UP TO 300Mbps
DA2131-V1	802.11n Outdoor Wireless Access Point SPEEDS UP TO 150Mbps
DA2155-V1	802.11n Wireless Desktop Repeater/Access Point SPEEDS UP TO 150Mbps

WIRELESS DESKTOP ROUTER

DA2154-V1

PART NO.	DESCRIPTION
DA2154-V1	802.11n Wireless Desktop 4-Port Router SPEEDS UP TO 300Mbps

DID YOU KNOW?

Wi-Fi is a shared bandwidth medium. This means that Wi-Fi networks slow down and lose range when additional networks and connected devices are broadcasting in the same vicinity.

POWERLINE NETWORKING

Powerline networks offer the quickest solution to transmit a high-speed wired network by simply plugging into any existing electrical outlet - making it an ideal option for a temporary solution or a difficult to wire location.

POWERLINE NETWORK ADAPTERS

DA2301-V1

DA2304-V1

PART NO.	DESCRIPTION
DA2301-V1	One-Port Powerline Network Adapter GIGABIT PORT - 500Mbps HOMEPLUG AV
DA2304-V1	4-Port Powerline Network Adapter 4 PORT GIGABIT SWITCH - 500Mbps HOMEPLUG AV

A typical system requires at least two adapters and can accommodate up to 16 endpoints.

POWERLINE NETWORK ADAPTER Kit

DA2300-V1 **COMING SOON!**

PART NO.	DESCRIPTION
DA2300-V1	Powerline Network Adapter Kit 10/100 FAST ETHERNET PORTS 500Mbps HOMEPLUG AV

A typical system requires at least two adapters and can accommodate up to 16 endpoints.

DID YOU KNOW?

Powerline networks are able to cross phases, but are unable to cross surge protection. If you're unsure whether a powerline network will work properly, you will know within seconds of plugging a pair in if the status LEDs flash from red to green.

COAX NETWORKING

Because almost every television in the home is connected to a coax port, coax networking is an ideal solution to connect streaming entertainment in a retrofit application. A coax cable transmitting MoCA is highly reliable and resistant to interference, making it the best option besides wired Ethernet to stream high bandwidth content such as video.

COAX NETWORK ADAPTER
Four Port

DA2204-V1

PART NO.	DESCRIPTION
DA2204-V1	4-Port Coax Network Adapter

A typical system requires at least two adapters and can accommodate up to 16 endpoints.

DIGITAL CABLE SPLITTERS
with Coax Network Support

VM2202-V1

VM2203-V1

VM2204-V1

PART NO.	DESCRIPTION
VM2202-V1	2-Way Digital Cable Splitter with Coax Network Support
VM2203-V1	3-Way Digital Cable Splitter with Coax Network Support
VM2204-V1	4-Way Digital Cable Splitter with Coax Network Support

All listed splitters and accessories are manufactured in partnership with Antronix to meet or exceed the standards of major cable companies.

COAX ACCESSORIES

VM2200-V1

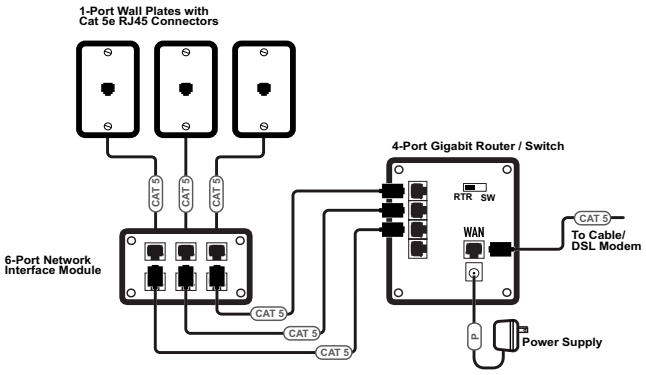
VM2201-V1

PART NO.	DESCRIPTION
VM2200-V1	Coax Network Signal Blocker
VM2201-V1	Single-Port Digital Cable Amplifier with Coax Network Support

Use either the amplifier or signal blocker at the system's point of entry to the home to prevent the coax network from leaving the premises.

ADDITIONAL INFORMATION

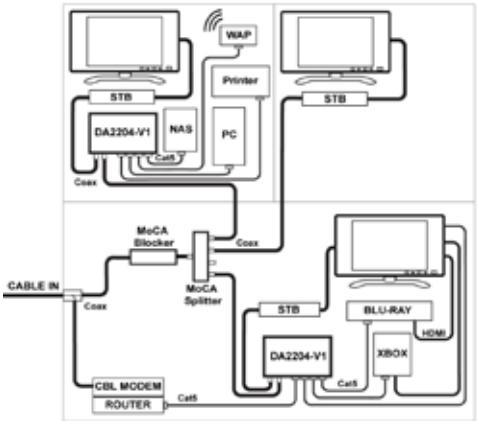
WIRED



Features:

1. Fastest network speeds
2. Highly secure and resistant to interference
3. Can transmit power to smart devices with PoE
4. Can transmit HDMI signals over long distance with HDBaseT

COAX

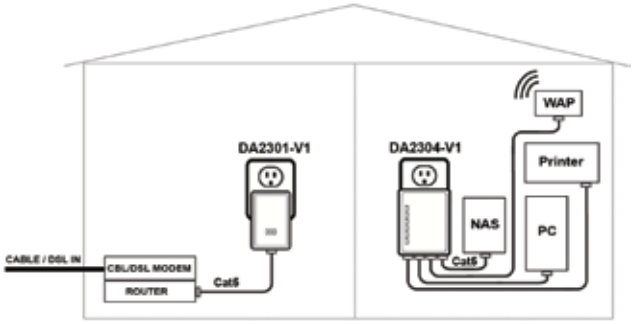


Features:

1. Fast network speeds
2. Highly secure and resistant to interference
3. Retrofits are cost-effective using existing wiring in the home
4. Ideal for connected entertainment devices

Note: Current MoCA standard is not compatible with satellite TV services

POWERLINE

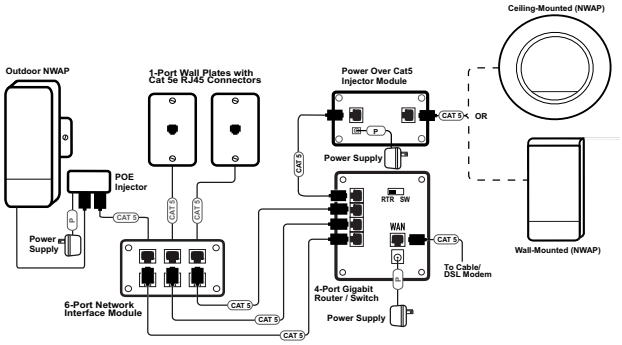


Features:

1. Fast network speeds
2. Retrofits are cost-effective using existing wiring in the home
3. Electrical ports are most frequent and familiar in the home
4. Easily portable between applications

Note: Powerline networking standards do not cross surge protection

WIRELESS



Features:

1. Ideal for mobile applications
2. Wi-Fi is nearly ubiquitous globally
3. Delivers convenient high performance connectivity for many common applications under optimal conditions

PATCH PANELS

INTERFACE MODULES

363486-01

AC1000

AC1012

AC1013

AC1014

AC1015

AC1033

PART NO.	DESCRIPTION
363486-01	8-Port Network Interface Module
AC1000	6-Port Network Interface Module
AC1012	6-Port Cat 5e Network Interface Module
AC1013	6-Port Cat 6 Network Interface Module
AC1014	12-Port Cat 5e Network Interface Module
AC1015	12-Port Cat 6 Network Interface Module
AC1033	Network Interface Module Installation Accessory PROVIDES A MOUNTING SURFACE TO QUICKLY TERMINATE WIRE TO THE 110 PUNCHDOWN BLOCKS ON THE BACKSIDE OF THE AC1012, AC1013, AC1014 AND AC1015 INTERFACE MODULES

RACK MOUNT PATCH PANELS

24845C5E

24845CC6

48845C5E

48845CC6

PART NO.	DESCRIPTION
24845C5E	Cat 5e 24-Port Rack Mount Patch Panel
24845CC6	Cat 6 24-Port Rack Mount Patch Panel
48845C5E	Cat 5e 48-Port Rack Mount Patch Panel
48845CC6	Cat 6 48-Port Rack Mount Patch Panel

WALL-MOUNT PATCH PANELS

12845C5E89

JP12845C5E

JP24845C5E

JP36845C5E

PART NO.	DESCRIPTION
12845C5E89	12-Port T568A/B Universal Wiring
JP12845C5E	12-Port T568A Wiring
JP24845C5E	24-Port T568A Wiring
JP36845C5E	36-Port T568A Wiring

PATCH CABLES

PATCH CABLES

363201-2X-V1

AC35XX-WH-V1

AC36XX-BE-V1

AC6AXX-GY-V1

PART NO.	DESCRIPTION
363201-25-V1	1 Foot Cat 5e Patch Cable (red)
363201-26-V1	2 Foot Cat 5e Patch Cable (red)
AC35XX-WH-V1	Cat 5e Patch Cable (white)
	Lengths: 3 Foot, 7 Foot, 14 Foot, 25 Foot, 50 Foot
AC36XX-BE-V1	Cat 6 Patch Cable (blue)
	Lengths: 7 Foot, 14 Foot, 25 Foot, 50 Foot
AC6AXX-GY-V1	Cat 6a Patch Cable (gray)
	Lengths: 7 Foot, 14 Foot, 25 Foot, 50 Foot

*Replace XX with cable length in part no.

DATA KEYSTONE INSERTS

WP3475-WH*

WP3476-WH

WP346A-WH

AC3400

WP3450-WH*

WP3460-WH

WP3458-WH

WP3451-WH

WP3550-WH

WP3560-WH

* Available in in packs of 50 for colors BE, LA, WH

QUICK CONNECT SOLUTIONS

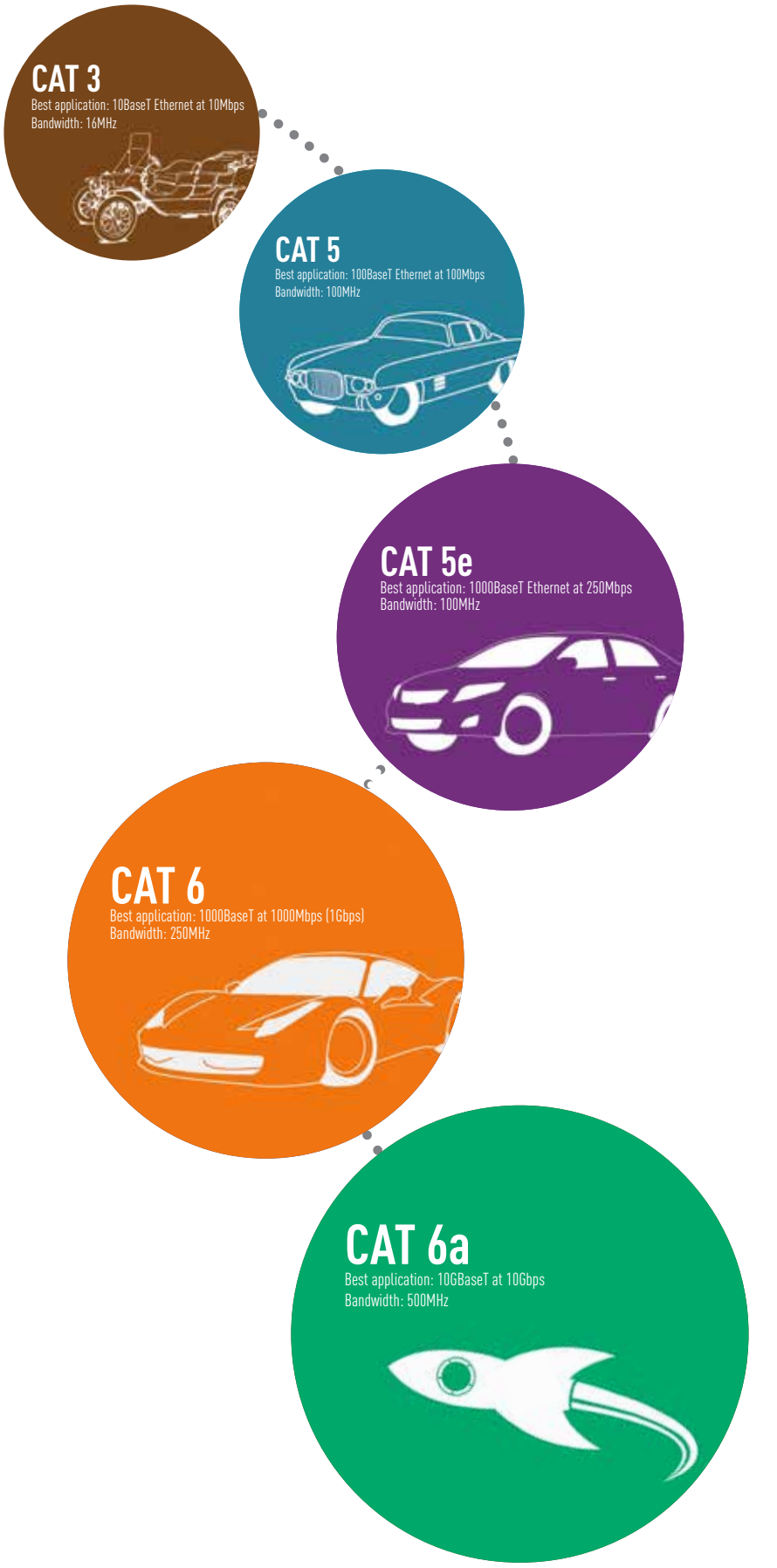
PART NO.	DESCRIPTION
WP3475-XX	Cat 5e Quick Connect RJ45 Keystone Connector
	Colors: BE, BK, BR, GY, GN, IV, LA, OR, RE, WH, YE
WP3476-XX	Cat 6 Quick Connect RJ45 Keystone Connector
	Colors: BE, BK, BR, GY, IV, LA, OR, RE, WH
WP346A-XX	Cat 6a Quick Connect RJ45 Keystone Insert
	Colors: BE, BK, BR, GY, GN, IV, LA, OR, RE, WH, YE
AC3400	Punch & Go Tool
	IMPROVES TERMINATION SPEEDS, REDUCES COMPROMISED CONNECTIONS AND INCREASES PRODUCTIVITY OF ANY QUICK CONNECT DATA INSERT

KEYSTONE INSERTS

PART NO.	DESCRIPTION
WP3450-XX	Cat 5e RJ45 Keystone Connector
	Colors: BE (BL), BK, BR, GY (GRY), IV (I), LA, OR, RE (RED), WH (WH)
WP3460-XX	Cat 6 RJ45 Keystone Connector
	Colors: BE (BL), BK, BR, GY (GRY), IV (I), LA, OR, RE (RED), WH (WH)
WP3458-XX	Cat 5e Keyed RJ45 Keystone Connector
	Colors: BK, BR, IV, LA, WH
WP3451-XX	Cat 5e RJ45 Keystone Coupler
	Colors: BK, WH (W)
WP3550-XX	Snap & Go Cat 5e Keystone Connector
	Colors: BE, BK, BR, GY, IV, LA, OR, RE, WH
WP3560-XX	Snap & Go Cat 6 Keystone Connector
	Colors: BE, BK, BR, GY, IV, LA, OR, RE, WH

COLOR OPTIONS

BE (BL) BK BR GY (GRY) IV (I) LA OR RE (RED) WH (W) YE (Y)



NETWORKING CABLE REFERENCE GUIDE

CAT 3 was a popular cabling format for computer network administrators in the early 1990s. It was superseded when Cat 5 became standardized because of its higher performance. It is used only in two-line phone systems.

CAT 5 was developed to support faster 100BaseT Ethernet standards. When Gigabit Ethernet (1000BaseT) standards were introduced, the Cat 5 cable became vulnerable to crosstalk, which caused interference and signal loss within the transmission.

CAT 5e superseded Cat 5 in 1999. It was designed to reduce crosstalk when transmitting 1000BaseT Ethernet. The "e" in Cat 5e stands for "enhanced". It is the most widely used cable in residential installations today.

CAT 6 was designed to transmit 1000BaseT at Gigabit speeds. Cat 6 is a wider cable than Cat 5e with more twists within its pairs to reduce crosstalk. Cat 6 can also be used in shorter runs for 10GBaseT Ethernet, but is vulnerable to alien crosstalk in a crowded cable environment.

CAT 6a was designed to transmit 10GBaseT, even in commercial environments. Cat 6a defends against alien crosstalk, which is crosstalk between cables in a crowded installation. The "a" in Cat 6a stands for "augmented".

WHAT'S THE DIFFERENCE BETWEEN BITS AND BYTES?

Network speeds are typically calculated in Bits, while files are calculated in Bytes. A Byte is 8 Bits.

WHY ARE NETWORKING CABLES TWISTED?

The twists in a cable are meant to defend against crosstalk on the line. The physics of this phenomenon are complex, but the twists prevent the signal running on one twisted pair in the cable from jumping to another twisted pair, causing interference.

RESOURCES - LINKS & AVAILABLE TOOLS

TECH SUPPORT
800.321.2343
tech.support-hs@legrand.us

Our toll-free support line is available from **7:30 a.m. to 6:30 p.m. EST,** Monday through Friday (excluding holidays).

CUSTOMER SERVICE
800.321.2343
customer.support-hs@legrand.us

Our toll-free customer service line is available from **8:00 a.m. to 6:30 p.m. EST,** Monday through Friday (excluding holidays).

TRAINING
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Legrand offers award-winning in-person and online training. Our innovative sales and installation curriculum is designed to exceed the needs of professional installers.

Online Training: Comprehensive online training classes you can take anytime from your home or office.

Webinars: These bi-monthly sessions highlight new product offerings, tackle frequently asked questions, and give you an overview of how to efficiently configure and install On-Q solutions.

Live Product Installation Training: Our in-field comprehensive courses — taught by certified professional trainers — cover category overviews, installation best practices, troubleshooting tips and much more.

LITERATURE

2013/2014 PRODUCT CATALOG
Part No.1308222
Showcases the complete On-Q product line along with all the innovative solutions available to homeowners.

NETWORKING WHITE PAPER
Part No.1308229
Learn more about the networking solutions offered by Legrand: Wired, Wireless, Coax and Powerline.

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