



Long Range Industrial Wireless

Connecting Ethernet Devices at the Edge

**Surveillance
Access Control**



**Industrial
Automation**



**Digital
Signage**



Fall **INTEGRASENSE** Guide

INTEGRASENSE
Where technologies meet

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Welcome

ABOUT AVALAN WIRELESS SYSTEMS INC.

AvaLAN Wireless Systems, Inc. is a specialist in the industrial long range Wireless Ethernet market with both point-to-point products and point-to-multipoint systems. It offers robust and reliable solutions for both non line-of-sight 900 MHz and line-of-sight 5.8 GHz wireless Ethernet bridge technology. AvaLAN's solutions offer affordable Ethernet connectivity at the network's edge.

With both indoor and outdoor models available, and a full line of specialty 900 MHz and 5.8 GHz antennas, AvaLAN provides its customers with a way to replace costly wiring with a wireless Ethernet bridge that can remotely enable surveillance cameras, digital signage, biometric scanners, access control devices, remote printers, industrial networking and internet kiosks.

AvaLAN's products offer the ideal combination of price, data rate, security, interference avoidance, quality-of-service and ease-of-use that professional installers and consumers are demanding. AvaLAN Wireless Systems, Inc. is headquartered in Madison, Alabama, with remote offices in California Missouri and Canada.

To contact the AvaLAN Wireless team:

Sales: (866) 533-6216 sales@avalanwireless.com
Technical support: (650) 384-0000 support@avalanwireless.com
Customer service: (650) 641-3011 service@avalanwireless.com
Fax: (650) 249-3591

Mail: AvaLAN Wireless Systems, Inc.
125A Castle Drive
Madison, AL 35758

Thank you for considering AvaLAN Wireless, and we invite you to visit our website at www.avalanwireless.com for more information.

Sincerely,



Matt Nelson, CEO



Mike Derby, Founder

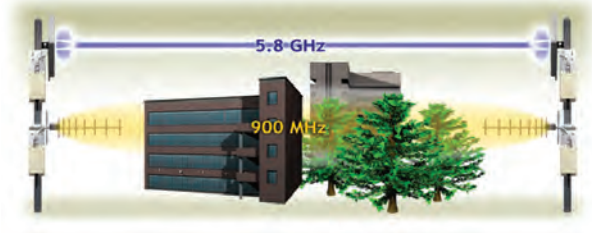


AVALAN TECHNOLOGY

Why use 900 MHz and 5.8 GHz?

AvaLAN's products utilize narrow bandwidth and high power to produce the longest range wireless Ethernet links on the market today. Our radios provide a large number of discrete channels and have built-in frequency intelligence to provide robust immunity to interference.

The 900 MHz products use a low frequency that can penetrate through trees and building walls. The 5.8 GHz products operate in a relatively quiet spectrum that has low interference and noise, providing transmission distances of 30 miles or more, even in high RF noise environments.



ADVANTAGES OF OUR PRODUCTS

Data rate

When operating wireless Ethernet links in unlicensed spectrum, AvaLAN promotes narrow band, high power radios as the best choice to provide robust wireless Ethernet performance. Although faster radios may provide superior throughput today, reliable long-term operation in increasingly noisy spectrum requires narrow band operation at the highest power permitted by the FCC.

Range

AvaLAN radios are specifically designed to provide maximum penetration and interference immunity at a modest data rate rather than other wireless technologies that provide higher data rates at short range. Our products do not change rates as the distance increases.

Frequency intelligence

Our radios are exceptionally robust because they adapt to noise and interference by using frequency intelligence to change channels. The radios continuously monitor the bit error rate of their link and will move to quieter areas of the spectrum. AvaLAN's 900 MHz radios choose from 12 unique channels while the 5.8 GHz radios choose from 58 unique channels.

Ease-of-use

The AvaLAN solution is a plug-and-play system with preset security keys and automatic frequency optimization. No selections are necessary, ensuring a simple and rapid installation without prior technical skills or additional training.

APPLICATIONS

AvaLAN Radios are used to connect these systems:

- access control
- biometric access control
- broadband backhaul to Wi-Fi hotspots
- cellular gateway extension
- digital signage
- industrial data collection
- mesh and spoke
- mobile remote tactics
- monitoring diagnostics
- network kiosks
- network printers
- remote data backhaul
- robotics
- SCADA
- video surveillance
- VoIP
- Zigbee data siphon

AvaLAN Systems are used in these locations:

- airports
- battlefields
- buses
- campgrounds
- campuses
- construction sites
- golf courses
- hotels
- malls
- marinas
- office buildings
- oil fields
- police cars
- warehouses

These radio pairs provide pre-configured plug and play point-to-point secure Ethernet connections for applications such as digital signage and surveillance.

Wireless Bridges



AW900xTR-PAIR Suggested Retail Price \$1250 900 MHz Outdoor Wireless Ethernet Bridge

A pair of our newest technology radio transceivers pre-configured as a transparent Ethernet bridge.

- **LIMITED TIME BONUS!** Includes (2) 11 dBi directional Yagi antennas
- IP Addressable with built-in web browser interface
- Easy re-configuration and performance monitoring via the network
- Built-in RF spectrum analyzer to diagnose interference issues
- Automatic RF channel selection to minimize interference
- 1.54 Mbps throughput
- Range up to 40 miles depending on antenna and terrain
- 128 bit AES encryption, FIPS 197
- Low power consumption, no FCC license required



AW900xTP-PAIR Suggested Retail Price \$1750 900 MHz Outdoor Ethernet Panel Bridge

The same radio modules as above integrated with high-gain 12.5 dBi flat panel antennas.

- Same electronic features as the AW900xTR-PAIR
- Ready to install and use
- Weatherproof aluminum NEMA enclosures, pole-mounting brackets included
- May be used indoors or out
- Size 17.7" square



AW900iTR-PAIR Suggested Retail Price \$900 900 MHz Indoor Wireless Ethernet Bridge

The same radio modules as described above, but in convenient small low cost packages for indoor applications.

- Same features as the AW900xTR-PAIR
- Ready to install and use
- AW2-900 2.5 dBi omnidirectional antennas included



AW5800xTR-PAIR Suggested Retail Price \$1450 5.8 GHz Outdoor Wireless Ethernet Bridge

A pair of our newest technology 5.8 GHz radio transceivers pre-configured as a transparent Ethernet bridge. This higher frequency band provides more channels (58 vs. 12) and less interference when line-of-sight operation is possible.

- Built-in browser interface for easy configuration and performance monitoring
- Built-in RF spectrum analyzer to diagnose interference issues
- Automatic RF channel selection to minimize interference
- 1.54 Mbps throughput
- Range up to 30 miles line of sight
- 128 bit AES encryption, FIPS 197



AW5800xTP-PAIR Suggested Retail Price \$2350 5.8 GHz Outdoor Ethernet Panel Bridge

The same radio modules described above integrated with high-gain 23 dBi flat panel antennas.

- Same features as the AW5800xTR-PAIR
- Ready to install and use
- Weatherproof aluminum NEMA enclosures, pole-mounting brackets included
- May be used indoors or out
- Size 12" square for each unit



AW5800HTP-PAIR Suggested Retail Price \$2800 5.8 GHz Outdoor 5 Mbps Wireless Ethernet Bridge

The radios in this bridge provide higher throughput and higher power for wireless connectivity to devices such as megapixel surveillance cameras.

- Up to 5 megabits per second
- 100 Watts Effective Isotropic Radiated Power (EIRP)
- Built-in browser interface for easy configuration and performance monitoring
- Built-in RF spectrum analyzer to diagnose interference issues
- Automatic selection among 20 non-overlapping RF channels to avoid interference
- Rugged outdoor enclosure with 23 dBi flat panel antennas
- Pole-mounting brackets included
- 128 bit AES encryption, FIPS 197
- Up to 15 miles line-of-sight without sacrificing bandwidth, security or performance

These radios can be configured as point-to-point or point-to-multipoint systems, providing robust, secure, long range wireless Ethernet connectivity.

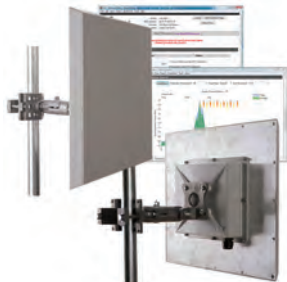
Ethernet Radios



AW900xTR Suggested Retail Price \$650 900 MHz Outdoor Wireless Ethernet Radio

Our newest technology radio transceivers designed for point-to-point and point-to-multipoint wireless Ethernet applications.

- IP Addressable for easy connection to tcp/ip networks
- Built-in browser interface for easy configuration and performance monitoring
- Built-in RF spectrum analyzer to diagnose interference issues
- Can be configured as an access point or subscriber unit
- Each access point can support up to 16 subscriber units
- Automatic RF channel selection to minimize interference
- 1.54 Mbps throughput
- Range up to 40 miles depending on antenna and terrain
- 128 bit AES encryption, FIPS 197
- Low power consumption, no FCC license required



AW900xTP Suggested Retail Price \$900 900 MHz Outdoor Wireless Ethernet Panel

The same radio module as described above integrated with a high-gain 12.5 dBi flat panel antenna.

- Same features as the AW900xTR
- Ready to install and use
- Weatherproof aluminum NEMA enclosure, pole-mounting bracket included
- May be used indoors or out
- Size 17.7" square



AW900iTR Suggested Retail Price \$500 900 MHz Indoor Wireless Ethernet Radio

The same radio module as described above, but in a convenient small low cost package for indoor applications.

- Same features as the AW900xTR
- Ready to install and use
- Built-in browser interface allows easy configuration, performance monitoring, RF spectrum analyzer and firmware update capability
- Can be configured as an access point or subscriber unit
- AW2-900 2.5 dBi omnidirectional antenna included
- 6 VDC power supply included



AW900xTP-INTL Suggested Retail Price \$650 915 MHz International Outdoor Wireless Ethernet Radio

The same radio module as the AW900xTR with the same features but providing to 6 RF channels between 915 and 926 MHz for non-USA applications where the lower 6 channels may not be used.

- Special firmware version for International use, otherwise functionally identical to the AW900xTR
- Compatible and non-interfering with GSM band
- Ideal for independent VOIP providers
- Robust and reliable Ethernet connectivity for remote areas



AW900xTP-INTL Suggested Retail Price \$900 915 MHz International Outdoor Wireless Ethernet Panel

The same integrated radio and 12.5 dBi antenna as the AW900xTP with the same features but providing to 6 RF channels between 915 and 926 MHz for non-USA applications where the lower 6 channels may not be used.

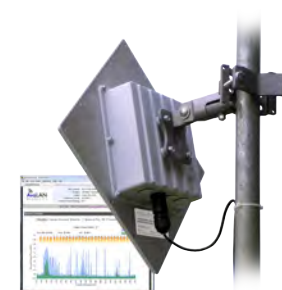
- Special firmware version for International use, otherwise functionally identical to the AW900xTP
- Compatible and non-interfering with GSM band
- Ideal for independent VOIP providers
- Robust and reliable Ethernet connectivity for remote areas



AW5800xTR Suggested Retail Price \$750 5.8 GHz Outdoor Wireless Ethernet Radio

Our newest technology 5.8 GHz radio transceivers designed for point-to-point and point-to-multipoint wireless Ethernet applications. This higher frequency band provides more channels (58 vs. 12) and less interference when line-of-sight operation is possible.

- Built-in browser interface for easy configuration and performance monitoring
- Built-in RF spectrum analyzer to diagnose interference issues
- Can be configured as an access point or subscriber unit
- Each access point can support up to 16 subscriber units
- Automatic RF channel selection to minimize interference
- 1.54 Mbps throughput
- Range up to 30 miles line of sight
- 128 bit AES encryption, FIPS 197



AW5800xTP Suggested Retail Price \$1200 5.8 GHz Outdoor Wireless Ethernet Panel

The same radio module as described above integrated with a high-gain 23 dBi flat panel antenna.

- Same features as the AW5800xTR
- Ready to install and use
- Weatherproof aluminum NEMA enclosure, pole-mounting bracket included
- May be used indoors or out
- Size 12" square

Integrate AvaLAN radio technology into your own products or systems with these flexible and easy to use modules.

RF Modules



AW900mTR-10 Suggested Retail Price \$2500
900 MHz Wireless Ethernet Module 10-Pak

The same technology that is used in our AW900xTR radio described on page 4, provided as an assembled and tested module for easy integration. Purchase in quantities of 10 or contact AvaLAN Sales for larger quantity pricing.

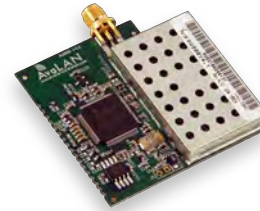
- 70 x 66 x 23 mm, 40 grams
- RJ-45 jack for Ethernet, P5 or POE for power, RPSMA for antenna
- 1.7 Watts transmit, 0.8 Watts receive, 9 to 48 VDC



AW900mTR-EVAL Suggested Retail Price \$800
900 MHz Ethernet Module Evaluation Kit

Evaluate feasibility and develop your mTR system with this convenient kit.

- Two AW900mTR Wireless Ethernet Modules
- Power supplies, POE Injectors, RPSMA to RPTNC pigtail cables, AW2-900 2.5 dBi omnidirectional antennas included



AW900mSPI-10 Suggested Retail Price \$1250
900 MHz Radio Module 10-Pak

When your application needs just the radio technology from AvaLAN to connect to your own microcontroller, this tiny low cost module provides an easily integrated data-to-wireless interface.

- 50 x 50 x 7 mm, 10 grams
- RPSMA for antenna, 17 PC edge connections for power and data
- 0.75 Watts transmit, 0.5 Watts receive, 100 µW standby, 3.3 VDC
- Synchronous high speed SPI (Serial Peripheral Interface)
- UART (Universal Asynchronous Receiver/Transmitter) to 115.2 kilobaud
- SPI or UART interface chosen by firmware



AW900mSPI-EVAL Suggested Retail Price \$475
900 MHz Radio Module Evaluation Kit

Evaluate feasibility and develop your mSPI system with this convenient kit. Connect to a USB port and use our evaluation utility software.

- Two AW900mSPI Wireless Ethernet Modules mounted on special evaluation PC boards
- Evaluation boards provide USB interface, power conversion, status LEDs and DIP switches
- Software Utility provided along with a 40-page instruction manual.
- The kit includes 2.5 dBi omnidirectional antennas, power supplies and a battery pack for portable range testing.

Use these excellent tools to survey your site so you can install a trouble-free system.

Spectrum Analyzers



AW900-SPEC Suggested Retail Price \$500
900 MHz Site Survey Spectrum Analyzer

AvaLAN 900 MHz radio receiver and spectrum analysis functionality provides a sensitive site survey tool in a rugged, weatherproof enclosure.

- IP Addressable for easy connection to tcp/ip networks
- Built-in browser interface
- Tunes from 879 to 945 MHz in 500 KHz steps
- -97 dBm sensitivity (0.2 nanoWatts)
- Can average up to 256 samples per point
- Logarithmic graph of peak and average power vs. frequency
- Mount outdoors with any of AvaLAN's directional antennas (small 2.5 dBi antenna included)



AW5800-SPEC Suggested Retail Price \$500
5.8 GHz Site Survey Spectrum Analyzer

AvaLAN 5.8 GHz radio receiver and spectrum analysis functionality provides a sensitive site survey tool in a rugged, weatherproof enclosure.

- IP Addressable for easy connection to tcp/ip networks
- Built-in browser interface for easy configuration and performance monitoring
- Tunes from 5.724 GHz to 5.853 GHz in 1 MHz steps
- -93 dBm sensitivity (0.5 nanoWatts)
- Can average up to 256 samples per point
- Logarithmic graph of peak and average power vs. frequency
- Mount outdoors with any of AvaLAN's directional antennas (small 5 dBi antenna included)

AvaLAN's dome and housing kits replace costly cables and trenching with a point-to-point solution that supports a variety of fixed and PTZ network cameras from leading camera manufacturers.

Integrated Wireless Camera Housings



AW-D2-900 Suggested Retail Price \$2000
900 MHz Integrated Wireless Dome Housing

AvaLAN 900 MHz AW900mTR radio inside a Dotworkz™ D2 outdoor dome housing for PTZ cameras.

- Impact-resistant polycarbonate housing works with many popular IP PTZ (pan-tilt-zoom) video cameras from Axis, Canon, Sony, Toshiba, Panasonic, etc.
- Includes a matching pre-configured AvaLAN outdoor radio (AW900xTR) to complete the wireless link to the host network.
- 24 VDC power (120 VAC transformer included)
- Heater/blower in housing provides 15 °F to 105 °F operation.
- Small omnidirectional antennas are included or use optional AW10-900 panel antennas or AW11-900 or AW15-900 Yagi antennas for greater range.



AW-D2-5800 Suggested Retail Price \$2100
5.8 GHz Integrated Wireless Dome Housing

AvaLAN 5.8 GHz AW5800mTR radio inside a Dotworkz™ D2 outdoor dome housing for PTZ cameras.

- Impact-resistant polycarbonate housing works with many popular IP PTZ (pan-tilt-zoom) video cameras from Axis, Canon, Sony, Toshiba, Panasonic, etc.
- Includes a matching pre-configured AvaLAN outdoor radio (AW5800xTR) to complete the wireless link to the host network.
- 24 VDC power (120 VAC transformer included)
- Heater/blower in housing provides 15 °F to 105 °F operation.
- Small omnidirectional antennas are included or use optional 23 dBi AW23-5800 panel antenna for greater range.



AW-H900 Suggested Retail Price \$1700
900 MHz Integrated Wireless Tube Housing

AvaLAN 900 MHz AW900mTR radio inside a Videoalarm™ ACH313HBWM outdoor tube housing for PTZ cameras.

- Rugged extruded aluminum housing works with most IP-ready video cameras and is designed for those situations where pan and tilt is not needed.
- Includes a matching pre-configured AvaLAN outdoor radio (AW900xTR) to complete the wireless link to the host network.
- 24 VDC power (120 VAC transformer included)
- Heater/blower in housing provides -20 °F to 120 °F operation.
- Small omnidirectional antennas are included or use optional AW10-900 panel antennas or AW11-900 or AW15-900 Yagi antennas for greater range.



AW-H5800 Suggested Retail Price \$1900
5.8 GHz Integrated Wireless Tube Housing

AvaLAN 5.8 GHz AW5800mTR radio inside a Videoalarm™ ACH313HBWM outdoor tube housing for PTZ cameras.

- Rugged extruded aluminum housing works with most IP-ready video cameras and is designed for those situations where pan and tilt is not needed.
- Includes a matching pre-configured AvaLAN outdoor radio (AW5800xTR) to complete the wireless link to the host network.
- 24 VDC power (120 VAC transformer included)
- Heater/blower in housing provides -20 °F to 120 °F operation.
- Small omnidirectional antennas are included or use optional 23 dBi AW23-5800 panel antenna for greater range.

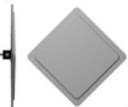
Antennas for every situation, compatible with AvaLAN radios and offered at very reasonable prices. Also, RF extension cables for use when the antenna must be located remotely.

Antennas and Cables






900 MHz

	Model Number	Description	Suggested Retail Price
	AW2-900	900 MHz Omnidirectional 2.5 dBi Antenna <ul style="list-style-type: none"> • 2.5 dBi gain perpendicular to antenna • Rubber-coated and flexible • Swivel mount 	\$19
	AW3x-900	900 MHz Omnidirectional 3 dBi Armored Antenna <ul style="list-style-type: none"> • 3 dBi gain in horizontal plane • Vandal-resistant • Armored • Flush mounted 	\$123
	AW5M-900	900 MHz Omnidirectional 5 dBi Magnetic Antenna <ul style="list-style-type: none"> • Magnetic mount for vehicles • Flexible wire with coil spring • 6 foot RF cable attached 	\$68
	AW5P-900	900 MHz Omnidirectional 5 dBi Pole Antenna <ul style="list-style-type: none"> • Designed for point-to-multipoint base station use (the access point) • 5 dBi gain perpendicular to antenna • 24" tall, pole mount bracket, 4' RF cable 	\$150
	AW10-900	900 MHz Directional 10 dBi Panel Antenna <ul style="list-style-type: none"> • Weatherproof and rugged • 10 dBi gain • 12" square by 2" thick • Includes pole mount bracket and 4' RF cable 	\$152
	AW11-900	900 MHz Directional 11 dBi Yagi Antenna <ul style="list-style-type: none"> • 11 dBi gain • 24" long by 12" high • Wall mount with 1' RF cable 	\$94
	AW15-900	900 MHz Directional 15 dBi Yagi Antenna <ul style="list-style-type: none"> • 15 dBi gain • 39" long by 14" high • Wall mount with 1' RF cable 	\$118

5.8 GHz

	Model Number	Description	Suggested Retail Price
	AW5-5800	5.8 GHz Omnidirectional 5 dBi Antenna <ul style="list-style-type: none"> • 5 dBi gain perpendicular to antenna • Rubber-coated and flexible • Swivel mount 	\$31
	AW23-5800	5.8 GHz Directional 23 dBi Panel Antenna <ul style="list-style-type: none"> • Weatherproof and rugged • 23 dBi gain • 13" square by 2" thick • Includes pole mount bracket and 4' RF cable 	\$152

RF Antenna Cables

	Model Number	Description	Suggested Retail Price
	AW-RF1	900 MHz 1 FT Antenna Extension Cable <ul style="list-style-type: none"> • 1 ft length, low loss • FME female to inline RPTNC male 	\$36
	AW-RF4	900 MHz 4 FT Antenna Extension Cable <ul style="list-style-type: none"> • 4 ft length, low loss • FME female to inline RPTNC male 	\$40
	AW-RF10	900 MHz 10 FT Antenna Extension Cable <ul style="list-style-type: none"> • 10 ft length, low loss • FME female to inline RPTNC male 	\$44
	AW-RF25	900 MHz 25 FT Antenna Extension Cable <ul style="list-style-type: none"> • 25 ft length, low loss • FME female to inline RPTNC male 	\$55
	AW-RF50	900 MHz 50 FT Antenna Extension Cable <ul style="list-style-type: none"> • 50 ft length, low loss • FME female to inline RPTNC male 	\$66

Note: AW-RF10 picture shown for every length.

Here are some carefully selected accessories available from AvaLAN that are engineered to work with our radios and allow you to adapt them to many different situations.

Accessories

Model Number	Description	Suggested Retail Price
AW-APM	Yagi Pole Mount • Mounting adapter for AvaLAN Yagi antennas	\$19
AW-XPM	Pole Mounting Plate • Kit for mounting xTR-series radios to a pole	\$39
AW-MMB	Module Mounting Bracket • Bracket for mTR-series modules	\$19
AW-MMB-DIN	DIN Rail Module Mount • Bracket to attach mTR-series modules to DIN Rail	\$24
AW-LA	Lightning Arrestor • RPTNC In-line lightning arrestor to protect radio	\$68
AW-12VA	Auto Adapter • 12 VDC to 5 VDC switching power converter for operating radios in vehicles	\$39
AW-24VC	AC to DC Power Converter • 24 VAC to 12 VDC converter for AvaLAN radios	\$45
AW-P8	Antenna to Radio Connector • 8" pigtail cable to connect RPTNC antenna to RPSMA radio module (use with RF Modules)	\$16
AW-6VPS	6 Volt Power Supply • Wall hanging 120 VAC to 6 VDC 500 mA power supply	\$10
AW-12VPS	12 Volt Power Supply • Wall hanging 120 VAC to 12 VDC 200 mA power supply	\$10
AW-POE	Power Over Ethernet Injector • Combines power via P5 jack with Ethernet data allowing a single cable connection to the radio module	\$16
AW-POE18i	POE with Integrated Power Supply • 100-240 VAC 50/60 Hz to 18 VDC switching power supply integrated with Power Over Ethernet Injector	\$45

Model Number	Description	Suggested Retail Price
AW-E4	Strain Relieved Ethernet Pass Through • RJ-45 weatherproof bulkhead mount jack to RJ-45 plug pigtail cable (use with RF Modules)	\$16
AW-POE-USB	USB Power/Ethernet Cable • Cable with USB and RJ-45 plugs on one end and power-injected RJ-45 on the other. Allows powering AvaLAN radios and spectrum analyzers from laptop.	\$49

Add another two years of limited warranty coverage for your AvaLAN radio for a very reasonable cost and provide a predictable annual maintenance expense.

Extended Warranty

Model Number	Description	Suggested Retail Price
AW-Warranty-900	Extended Warranty for AW900 Series • Two year extension to free one year coverage • Overnight product replacement in continental USA	\$65
AW-Warranty-5800	Extended Warranty for AW5800 Series • Two year extension to free one year coverage • Overnight product replacement in continental USA	\$75

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