



ION®-E Series

Indoor Wireless for Everyone

POWERED BY



ION[®]-E is the easy solution designed with everyone in mind

ION-E: Simplicity, flexibility, and performance that exceeds expectations for the design, deployment and operations of in-building wireless systems

Wireless operators face pressure to increase network capacity while maintaining reliability and quality—all while working under limited budgets. The inherent complexities involved in deploying in-building wireless compounds these challenges. ION-E is a revolutionary solution that simplifies these complexities while addressing the current and future needs of wireless operators, building owners, and tenants alike.

ION-E flattens the infrastructure onto a single physical layer while simplifying the design, deployment, and operations of the wireless system. This unified wireless infrastructure represents a significant leap forward, helping operators maximize the use of existing and future IT cabling infrastructure.

ION-E transports capacity to wherever it's needed in real time, using a software-defined switch and distribution method. The system's simplicity reduces the total cost of ownership and makes the system commercially viable in small, medium and large facilities.

The solution to build your wireless network

ION-E makes it easier to deploy critical in-building wireless systems cost effectively and quickly. ION-E offers many new benefits.

Installation

- Standard installation materials utilizing Category 6A, multimode fiber and singlemode fiber
- Fast, non-disruptive installation using a large, existing network of trained installation technicians

Flexibility

- Frequency and technology independence supporting 380-2700 MHz with one model
- Software-defined remote sectorization control
- Automated configuration

Additional features

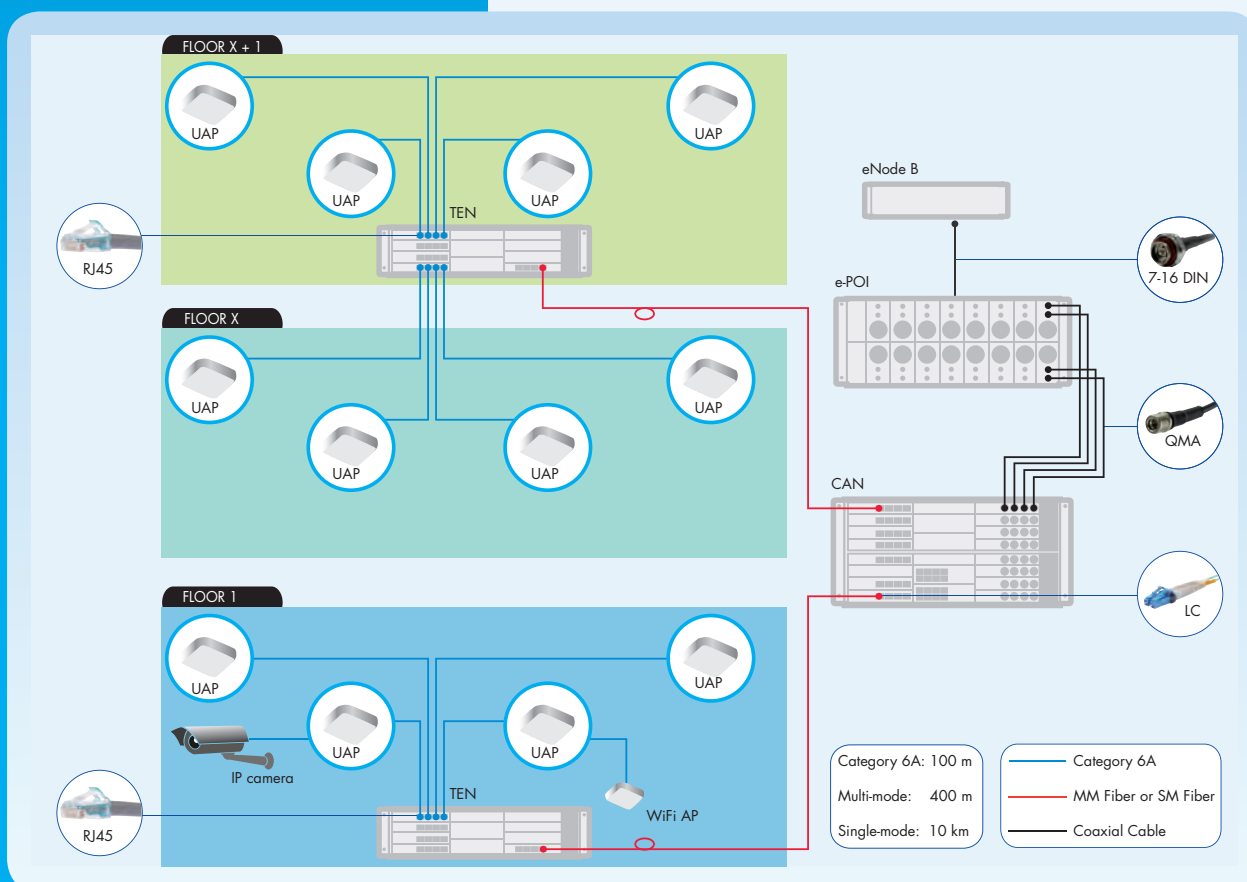
- MCC, MNC and cell Id detection for ease of signal distribution
- Gigabit ethernet back-haul over common infrastructure—no separate cables or hardware required
- Power to universal access points (UAP) and connected ethernet devices through enhanced PoE. UAP power over single standard cable via PoE
- Compact head-end equipment conserves rack space



ION-E series

Unified wireless infrastructure delivers a more flexible network

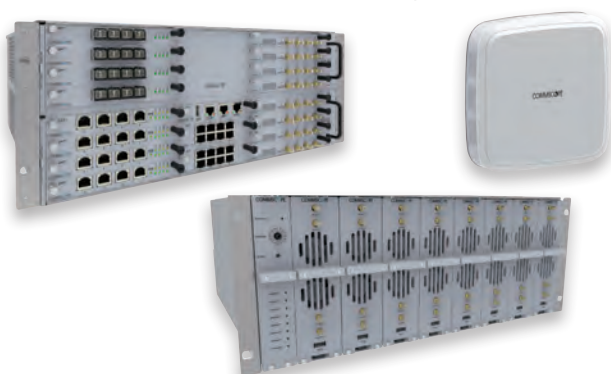
- **Universal access point (UAP)** data and power through Category 6A twisted pair cabling. Supports gigabit ethernet for WiFi, IP cameras or other devices in addition to wireless over a common cable.
- **Central area node (CAN)** Server-level control and primary signal distribution. 2U and 4U subrack options available.
- **Transport expansion node (TEN)** The secondary distribution point connected to a CAN using multimode and singlemode fiber.
- **ION-E point of interface (e-POI)** attenuates high-power RF signals from their source to the CAN across all frequencies.



System specifications



IONE makes it easy to deploy, configure and optimize in-building wireless solutions. A small set of frequency-independent building blocks is all that's required for complete flexibility and scalability, from small office buildings to large, complex venues.



Features:

- All components support all frequency bands
- IT physical layer infrastructure converged
- Automatic configuration and dynamic optimization
- Advanced operational, optimization, and troubleshooting capabilities

Electrical

Transport media

Category 6A	CommScope GigaSPEED® X10D® ¹
MM fiber	CommScope LazrSPEED® ¹
SM fiber	CommScope TeraSPEED® ¹

¹ or equivalent

² PoE slots

³ CAT + OPT ≤ 4 for WCS-2
8 for WCS-4

Mechanical

Number of CAN subracks	8
Number of TEN subracks	32 per CAN
Number of RFD cards	WCS-2: 4 WCS-4: 8
Number of CAT cards ²	WCS-2: 4 WCS-4: 4
	WCS-2: 4 as CAN
Number of OPT cards ³	WCS-2: 1 as TEN WCS-4: 8 as CAN
	WCS-4: 1 as TEN
Number of UAPs / subrack	16

WCS subracks

IONE's simplified design features two wireless communications switch (WCS) units (2U and 4U), configurable with five universal cards to support all transport options. It's easy to order, install and support.



Electrical

Input voltage, Vdc	Subrack:	12
	PoE:	57
Power consumption	WCS-2:	70
(subrack 12 Vdc), Watts	WCS-4	90

Features:

- WCS subracks may be used as CANs or TENS
- All cards are used universally to support all frequency bands
- Universal slots recognize inserted cards
- Configuration, optimization, and upgrades are rendered from a GUI, either locally or remotely

Mechanical

Number of card slots	WCS-2: 11 WCS-4: 19
Height x width x depth, mm (in)	WCS-2: 2U x 19" x 450 (2U x 19" x 17.7) WCS-4: 4U x 19" x 450 (4U x 19" x 17.7)
Weight, kg (lb)	WCS-2: 7.6 (16.7) WCS-4: 10.8 (23.8)
Operating temperature, °C	+5 to +40

System user interface card



Electrical

Input voltage, Vdc	12
Power consumption, Watts	5

Mechanical

Connection	3x RJ45, USB
Height x width x depth, mm (in)	20 x 107 x 300 (0.8 x 4.2 x 11.8)
Weight, kg (lb)	0.15 (0.33)
Operating temperature, °C	+5 to +40

RF donor card



Electrical

Operational frequency, MHz	380 to 2700
RF input power, dBm	+27 max.
Bandwidth / port, MHz	75
RF interface	Rx, Tx, or Rx/Tx
Input voltage, Vdc	12
Power consumption, Watts	40

Mechanical

Connection	4x QMA female
Height x width x depth, mm (in)	20 x 145 x 300 (0.8 x 5.7 x 11.8)
Weight, kg (lb)	0.54 (1.2)
Operating temperature, °C	+5 to +40

Optical transport card



Electrical

Input voltage, Vdc	12
Power consumption, Watts	10

¹ SFP+ ordered separately

Mechanical

Connection	4x SFP + module ¹
Height x width x depth, mm (in)	20 x 145 x 300 (0.8 x 5.7 x 11.8)
Weight, kg (lb)	0.28 (0.61)
Operating temperature, °C	+5 to +40

Copper transport card



Electrical

Input voltage, Vdc	12
Power consumption, Watts	40
Power over ethernet	2 circuits / port

Mechanical

Connection	4x RJ45
Height x width x depth, mm (in)	20 x 145 x 300 (0.8 x 5.7 x 11.8)
Weight, kg (lb)	0.44 (0.96)
Operating temperature, °C	+5 to +40



Auxiliary unit transport card



Electrical

Input voltage, Vdc	12
Power consumption, Watts	18

Mechanical

Connection	8x RJ45
Height x width x depth, mm (in)	30 x 107 x 300 (1.2 x 4.2 x 11.8)
Weight, kg (lb)	0.44 (0.96)
Operating temperature, °C	+5 to +40

Universal access point

IONE incorporates enhanced power over ethernet (PoE). The UAP is connected to the system via Category 6A cabling. A 1G pass-through for WiFi, IP cameras or other 1G ethernet devices is supported on the same Category 6A cable.



Features:

- Universal model supports 380 to 2700 MHz
- Simple-to-install Category 6A for data and power
- Integrated antenna
- Wall or ceiling mounting options
- Supports 1G pass-through or additional UAP through second RJ45 jack

Electrical

Operational frequency, MHz	380 to 2700
	$f > 1000 \text{ MHz}$: +18
RF output power, dBm ¹	$698 < f < 1000 \text{ MHz}$: +18
	$f < 698 \text{ MHz}$: +8
Noise figure, dB	10
Input voltage, Vdc	36 to 60
Power consumption, Watts	65 nominal
DL gain, dB ²	-40 to +20
UL gain, dB ³	-40 to +20

Mechanical

Connection	2x RJ45
Height x width x depth, mm (in)	320 x 320 x 105 (12.6 x 12.6 x 4.1)
Weight, kg (lb)	3.2 (7.05)
Operating temperature, °C	+5 to +40
Ingress protection	IP20

¹ RF output power not to exceed +15 dBm in any licenced frequency band

² Downlink gain automatically adjusts to provide output power to individual RF signals defined by the user settable power table

³ Uplink gain automatically adjusts to match downlink gain

Power supply subrack

ION-E simplifies ordering with one universal power supply subrack and two standard power modules.



Features:

- 1U height minimizes rack space usage
- Redundant 12 Vdc and 57 Vdc modules
- Hot-swapped functionality
- Powers WCS subracks, UAPs and connected devices

Electrical

Modules / subrack, Vdc	2	12
	2	57
Redundancy	Yes	
Current share	Yes	

Mechanical

Connection	IEC60320 C19
Height x width x depth, mm (in)	1U x 19" x 495 (1U x 19" x 19.5)
Weight, kg (lb)	4.2 (9.2)
Operating temperature, °C	+5 to +40

12 VDC module

Electrical

Input voltage, Vac	85 to 264
Input frequency range, Hz	47 to 63
Output voltage, Vdc	12
Output power, Watts	90-132 Vac: 750
	180-264 Vac: 1250

Mechanical

Height x width x depth, mm (in)	42 x 100 x 285 (1.6 x 3.9 x 11.2)
Weight, kg (lb)	1.4 (3.08)
Operating temperature, °C	-10 to +55

57 VDC module

Electrical

Input voltage, Vac	85 to 264
Input frequency range, Hz	47 to 66
Output voltage, Vdc	57
Output power, Watts	90-140 Vac: 1200
	185-300 Vac: 2000

Mechanical

Height x width x depth, mm (in)	42 x 100 x 350 (1.6 x 3.9 x 13.8)
Weight, kg (lb)	2.3 (5.06)
Operating temperature, °C	-10 to +55



e-POI subrack

IONE is flexible. Its universal 4U e-POI rack supports up to eight RF modules. Each e-POI module is capable of handling all frequency bands as well as multiple operators.



Electrical

RF modules	8
Interface card	1

Features:

- High-power, low-PIM interfaces
- Wideband 380 to 2700 MHz

Mechanical

Height x width x depth, mm (in)	4U x 19" x 395 (4U x 19" x 15.5)
Weight, kg (lb)	7.7 (16.94)
Operating temperature, °C	-5 to +50

e-POI module

Electrical

Operational frequency, MHz	380 to 2700
RF input power, dBm	+46
	30 ±2 698-2700 MHz
Attenuation, dB	35.5 ±3.5 380-450 MHz
	33.5 ±3.2 450-698 MHz
PIM @ 2x20 Watts (3rd order), dBc	-153
Input voltage, Vdc	12
Power consumption, Watts	10

Mechanical

Connector	RF input: 7/16 DIN RF output: QMA
Height x width x depth, mm (in)	170 x 50 x 440 (6.7 x 1.96 x 17.3)
Weight, kg (lb)	5.7 (12.5)
Operating temperature, °C	-5 to +50

e-POI interface card

Electrical

Input voltage, Vdc	12
Power consumption, Watts	3.6

Mechanical

Height x width x depth, mm (in)	170 x 35 x 390 (6.7 x 1.4 15.3)
Weight, kg (lb)	0.5 (1.1)
Operating temperature, °C	-5 to +50

ION-E series ordering information

The fewest components for easiest design and deployment

ORDERING NAME	DESCRIPTION
ION-E universal access point	
UAP	UAP, 10G, Expansion Port
UAP-CM-KIT	KIT, UAP Ceiling Mount Assembly
UAP-WM-KIT	KIT, UAP Wall Mount Assembly
ION-E wireless communications switch subracks	
WCS-2	WCS-2, 2U Subrack
WCS-4	WCS-4, 4U Subrack
WCS-FAN	WCS Fan Tray
WCS-Filter	WCS Air Filter
ION-E wireless communications switch subrack cards & modules	
RFD	RFD, RF Donor Card
CAT	CAT, Copper Transport Card
OPT	OPT, Optical Transport Card
SUI	SUI, System User Interface Card
AUT	AUT, Auxiliary Transport Card
BP-UNV	Blank Panel, Universal Slot
BP-SUI	Blank Panel, SUI Slot
BP-AUT	Blank Panel, AUT Slot
SFP+SR	SFP+, 10GBase-SR, (MM)
SFP+LR	SFP+, 10GBase-LR, (SM)
ION-E power supply unit subracks & modules	
PSU-SR-AC	ION-E PSU Shelf Assembly, AC
PSU-12V-AC	PSU, 12 VDC, 100-240VAC
PSU-57V-AC	PSU, 57 VDC, 100-240VAC
CA-PWR-AUS	POWER CABLE ASSY, AUS AS/NZS 3112 TO C19
CA-PWR-EU	POWER CABLE ASSY, EU CEE (7) VII TO C19
CA-PWR-IS	POWER CABLE ASSY, IS SI 32 TO C19
CA-PWR-IT	POWER CABLE ASSY, ITALY CEI 23-50 TO C19
CA-PWR-US120	POWER CABLE ASSY, US NEMA 5-15 TO C19
CA-PWR-US240	POWER CABLE ASSY, US NEMA L6-20P TO C19
CA-PWR-UK	POWER CABLE ASSY, UK BS1362/ASS145 TO C19
e-POI subracks, modules & cables	
e-POI-SR	e-POI Subrack + IFC
e-POI-RFM	e-POI RF Module
e-POI-HFC	e-POI IFC
e-POI-BP	e-POI Blank Module
QMA-0.6m	QMA-QMA cable, CNT-195, 0.6m
QMA-1.0m	QMA-QMA cable, CNT-195, 1.0m
QMA-2.0m	QMA-QMA cable, CNT-195, 2.0m

CommScope structured cabling

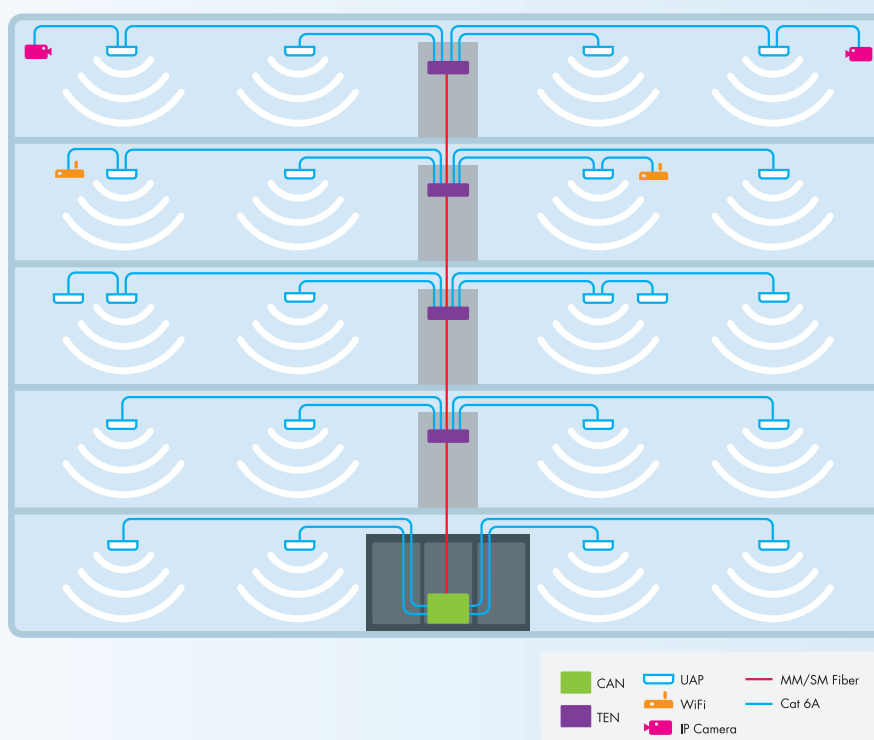
A comprehensive solution from your comprehensive solutions partner.

Instead of the expensive, difficult-to-install RF cabling required for traditional in-building wireless (IBW) systems, the unified wireless infrastructure of IONE leverages the more affordable and available options of Category 6A copper, multimode fiber and singlemode fiber – which let you tap into a much larger and more economical base of installers.

- Copper cabling solutions are ideal in “horizontal” applications — that is, for service areas on a particular floor or office, for instance
- Fiber cabling is well suited to “vertical” applications, working as the backbone between floors and between buildings, and as the connection for Wi-Fi or IBW systems

Oftentimes, this infrastructure already exists where the IBW is being deployed; if not, CommScope offers a complete line of structured cabling solutions specifically designed to work seamlessly and reliably with the IONE platform. These infrastructures also support low-voltage systems used in modern intelligent buildings, including HVAC, VoIP, security and lighting systems. There’s a lot riding on this infrastructure, so it makes sense to go with CommScope’s portfolio of solutions that includes:

- **GigaSPEED X10D®** copper cabling for horizontal sub-networks, delivering 10G data transmission up to 100 meters with up to 4 connectors in the channel
- **lazrSPEED® 550 multimode**, laser-optimized fiber cabling for vertical deployments, delivering up to 10G over backbone connections
- **TeraSPEED® singlemode**, zero-water peak fiber cabling for vertical deployments delivering 50 percent more wavelength range than conventional singlemode



More than comprehensive cable solutions – CommScope also delivers confidence

CommScope provides complete connectivity solutions that include information outlets, patch panels, patch cords, cross-connects and modular cassettes. Designed for plug-and-play simplicity – including convenient preterminated solutions – our enterprise connectivity components help deployments go quickly –and confidently. That's because CommScope solutions are:

- Supported by more than 1000 patents and backed by more than 100 engineers
- Covered under our industry-leading 20-year warranty for certified installations
- Backed by the certified expertise of local PartnerPRO™ Network Partners, a global organization of expert installers trained and tested in the use of CommScope solutions including all structured cabling

Simply put, the exceptional flexibility and affordability of the ION-E platform and its structured cabling let every building, large or small, work like a more intelligent building.

ION-E – the unique, innovative solution that could only come from CommScope

CommScope has a unique future perspective because of its past performance. We pioneered the first cable TV infrastructure, the first wireless networks, and the first standard cabling network. We helped cover the world with 2G, 3G and now 4G.

And we're not slowing down. We continue to design, build and maintain agile, reliable high-performance networks that are increasing capacity and reducing the total cost of ownership. The unified wireless infrastructure of ION-E plays a key role in this ongoing commitment to our customers.

Following is a sample list of CommScope cable solution products. You may visit www.commscope.com to find all available products.

ORDERING NAME	DESCRIPTION
Cat6A cabling	
760107094	1091B BL 4/23 W1000 non-plenum, blue, 305m length
760107201	2091B BL 4/23 W1000 plenum, blue, 305m length
760107318	3091B WH 4/23 W1000 LSZH, white, 305m length
Cat6A patch cords	
CPCSSX2-0ZM002	GigaSPEED X10D® patch cord, non-plenum, blue, 2m
CPCSSY2-0ZM002	GigaSPEED X10D® patch cord, plenum, blue, 2m
CPCSSZ2-0ZM002	GigaSPEED X10D® patch cord, LSZH, blue, 2m
Information outlets and panels	
760092429	MGS600 information outlet, white, single
760110973	MGS600 information outlet, white, 100 pack
760152587	1100GS6 evolve category 6A U/UTP patch panel, 24 port
760115907	LazrSPEED® panel insert, LC, 12 duplex, aqua
760175877	360 1100 Evolve G2 Bezel, cool gray, 4 pack
MM fiber cabling	
700208150	LazrSPEED® 300 riser, 12 fiber, aqua
700009731	LazrSPEED® 300 plenum, 12 fiber, aqua
700009749	LazrSPEED® 300 LSZH, 12 fiber, aqua
MM fiber connectors	
760117911	LazrSPEED® fiber qwik IHC connector™, aqua, 25 pack
MM fiber patch cord	
FEXLCLC42-MXM005	LC to LC, patch cord, 1.6 mm duplex, riser, aqua, 5m
FDXLCLC42-MXM005	LC to LC, patch cord, 1.6 mm duplex, plenum, aqua, 5m
FFXLCLC42-MXM005	LC to LC, patch cord, 1.6 mm duplex, LSZH, aqua, 5m

Note: Other colors and lengths are available

We're proud to be a part of your network's story

Here at CommScope, we embrace our role as a trusted resource, partner and facilitator. We create the infrastructure that connects the world and evolves with every advance in technology. By investing all of our capabilities, resources, relationships and products into your toughest challenges, we continue our long history of solving problems together—paving the way for new ideas and fresh ways of thinking.

We're a trusted resource and partner around the world because we're invested in you: your people, your networks, your success. It inspires us to build relationships and infrastructure ... connect people and technologies across protocols, oceans and time zones ... and share what we learn along the way. We'll never stop connecting and evolving networks for the business of life at home, at work and on the go.

This is our promise to you.
This is CommScope.



www.commscope.com

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