ICCN
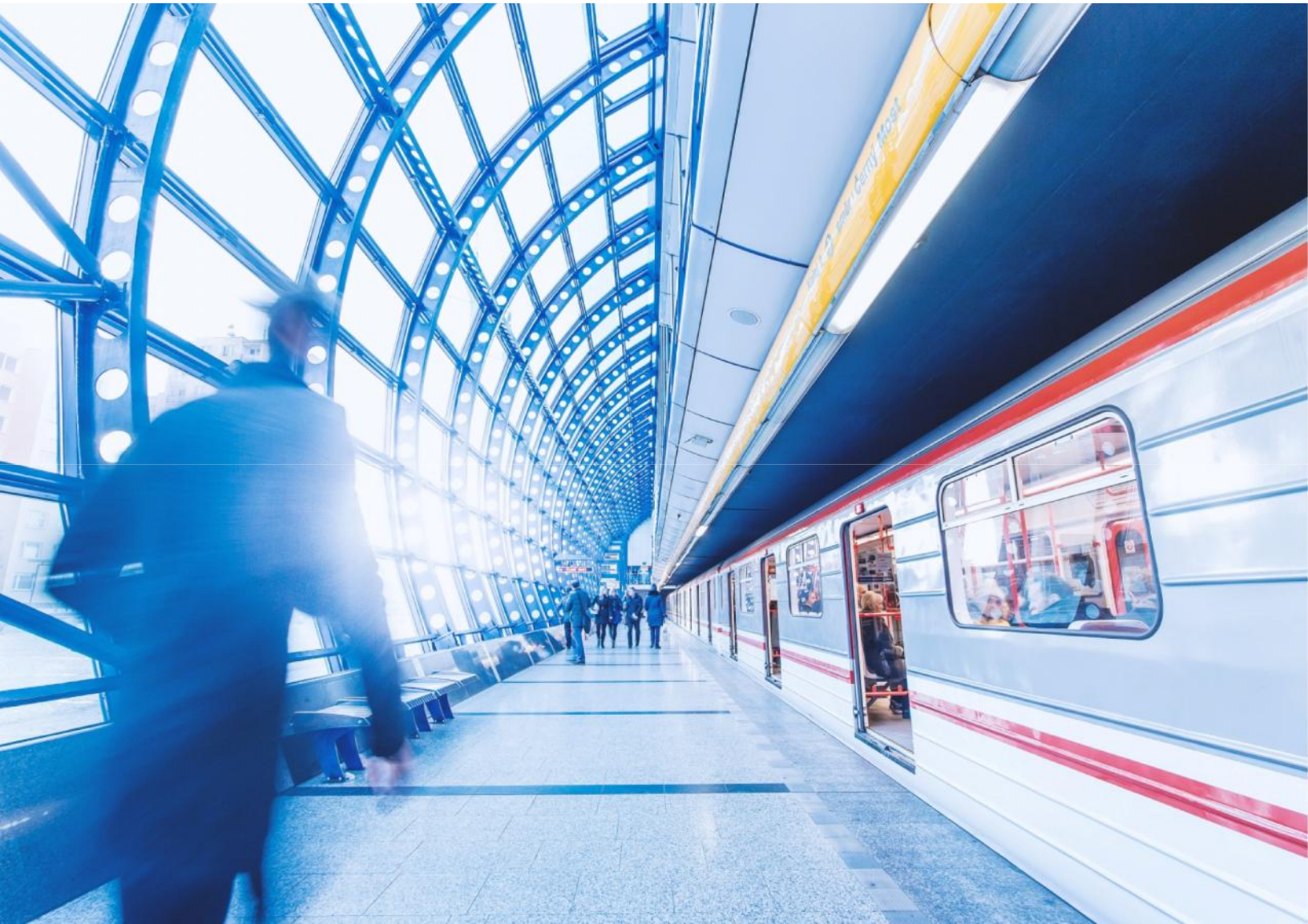
Wired and Wireless
IP Data Networking

2019 Solution Brochure

ICC Networking's (ICCN) is an IP data networking vendor focused on delivering connectivity and content technology to clients globally.   ICCN's wired and wireless devices increase efficiency resulting in more content, devices, and performance flowing over our wireless network.

We increase the ability to send and receive content over our wired and wireless products.
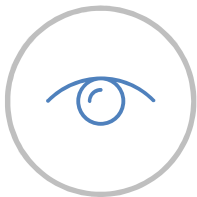
ICCN is focused on listening, learning, and delivering client needs today as well as understanding potential future requirements not realized.

ICCN is focused on technology as a tool to accomplish the objectives of our clients. To that end, we deliver patented, software-driven, and flexible IP network solutions to exceed client expectations.

| High Density | Performance | Power (PoE/PoE+) | Non-line-of-Sight |

IEEE803.2 (Wired Ethernet)

IEEE8802.11 (Wi-Fi)

TV Whitespace

Cloud SaaS

www.iccnetworking.com

ICCN Solutions

AE series indoor access points
AX series outdoor access points

WP series performance PoE+ switches
WX series performance 10G switches

UniCAP high density wireless hub system
RaptorXR and iNET TV Whitespace industrial VHF/UHF

activeARC®
CLOUD MANAGEMENT SYSTEM

Problem

Traditional networking connectivity is under pressure due to more devices, remote control, and various applications. Legacy solutions still focus on upgrade cycles and hardware.

Solution

ICC Networking is a software-driven solution IP data networking manufacturer focusing on unified wireless and wired connectivity built for patented optimized performance.

Results

ICC IP data intelligent solutions enable greater elasticity and efficiency so customers achieve more bandwidth, devices, users, applications from our networking solutions.

Software-driven connectivity

IEEE802.11 Performance Indoor Wi-Fi Access Points

AE201 Series IEEE802.11ac Wave 2

- 2x2:2 MU-MIMO IEEE802.11ac Wave 2
- Up to 1.3Gbps aggregate performance
- Extended 7 SSIDs per radio (14 total)
- Extended 4,000 VLAN capability
- Performance quad-core processing
- Small form with USB Type C power
- 2 Ports for additional devices
- Multi-mode including repeater function

Models:
AE201 or AE201-CMS

SMB　　　　**Hospitality**
Enterprise　　**MDU**
Healthcare　　**Retail**
Manufacturing　**Remote Office**

AE108 Series IEEE802.11ac

- 2x2:2 SU-MIMO IEEE802.11ac
- Up to 867Mbps aggregate performance
- Extended 16 SSIDs per radio (32 total)
- Extended 4,000 VLAN capability
- Performance quad-core processing
- Small form with USB Type C power
- 1 RJ-45, 1 USB, and 1 Console port
- Multi-mode standalone or cloud managed

Models:
AE108 or AE108-CMS

Brand notice: ICX10 and ICX20 series are now called AE108 (formerly ICX10) and AX110 (formerly ICX20)

IEEE802.11 Performance Outdoor Wi-Fi Access Points

AX110 Series IEEE802.11ac

Hardware Feature	AX110 AX110-CMS	AX110-V2 AX110-V2-CMS	AX110-EXT AX110-EXT-CMS
IEEE802.11ac	Wave 1	Wave 1	Wave 1
Radio	2x2:2	2x2:2	2x2:2
Power-over-Ethernet	IEEE802.3at/af	IEEE802.3at/af	IEEE802.3at/af
Antenna Configuration	Internal Only 2.4GHz - 12dBi 5GHz – 15dBi	Internal/External 2.4Ghz – Optional 5GHz – 15dBi	External/External 2.4GHz – Optional 5GHz - Optional
SSID	16 per Radio (32 Total)	16 per Radio (32 Total)	16 per Radio (32 Total)
VLAN	4,000	4,000	4,000
Ports	1 Gigabit (RJ-45)	1 Gigabit (RJ-45)	1 Gigabit (RJ-45)
NEMA Rating	NEMA68	NEMA68	NEMA68

ICCN's AX110 outdoor APs are multi-purpose access devices designed for a variety of complex environments. The **UADOS** embedded software allows for optional routing capability, firewall, and a variety of streaming methods via QoS.   Feature include:

Connectivity
Root – Satellite Configuration
Point-to-Point/Point-to-Multipoint
MAC Filtering
Client Isolation
Security
Static Routing

Antennas sold separately

Content Control
QoS / Bandwidth Management
Auto enabled QoS
Wireless QoS (WMM)
Packet queuing and
    prioritization
Bandwidth up and down

Multiple RADIUS Profiles
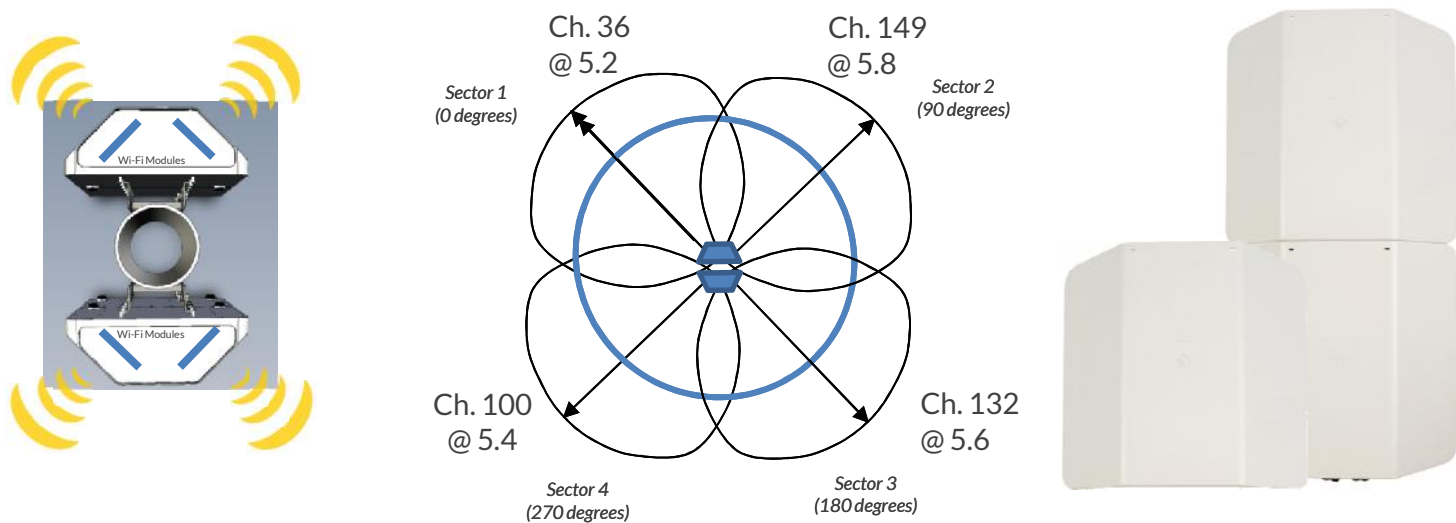Routing Support
Firewall
Access Point

IEEE802.11 High Density Wi-Fi

UniCAP Modular Industrial Access Point System

The UniCAP system is a high density modular wireless system designed to aggregate IEEE802.11 wireless sources and connect them to the core of your network. When deployed, the UniCAP supports two (2) gigabit fiber ports and eight (8) high performance PoE++ ports designed to support expansion modules, power CCTV systems and other city requirements. Featuring integration into ICCN's RaptorXR TV Whitespace, the UniCAP is the ideal communication hub for any high density or city deployment.

UniCAP platform consists of a Base and Expansion Unit

- A Base Unit supports up to 4 Expansion Units or up to eight third party IEEE802.3af/at devices or a mixture of the two.
- Expansion Units consists of two dual radio IEEE802.11ac modules for quad radio RF performance.
- Flexible pole or wall mount configurations.
- UniCAP can be standalone devices or part of your network management system.

Wi-Fi Modules

Wi-Fi Modules

Ch. 36 @ 5.2 — Sector 1 (0 degrees)

Ch. 149 @ 5.8 — Sector 2 (90 degrees)

Ch. 100 @ 5.4 — Sector 4 (270 degrees)

Ch. 132 @ 5.6 — Sector 3 (180 degrees)

SKUs	Description
UC-12-KIT1	UniCAP KIT is a pre-packaged carrier system (1 UC-12-Base, 1 UC-12-Blank + 2 UC-12-EXP, 2 UC-12-MNT, 2 UC-JP-18 and 2 UC-JP-26)
UC-12-Base	Industrial Managed Gig Switch w/8 POE++ and 2 Fiber ports w/NEMA enclosure
UC-12-EXP	High Density 802.11ac 2 modules w/4 Radios and 16 SSIDs/radio

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Managed Ethernet Power-over-Ethernet Plus Switches

WP6026-24POE

WP6010-8POE

WP6012IND-8POE

Feature	WP6026-24POE	WP6010-8POE	WP6012IND-8POE
10/100/1000Base-TX	24	8	8
SFP Fiber Uplink	2	2	4
PoE Power Budget	450W	250W	120W (optional higher power support available)
Aggregate Bandwidth	52G	20G	20G

WX7028-410G

WX7020-1210G

Feature	WX7028-410G	WX7020-1210G
10/100/1000Base-TX	24	8
10G SFP+	4	12
Jumbo Frame Support	16k	16k
Aggregate Bandwidth	128G	256G

Shared features include:
MAC address management
MAC binding, MAC filtering, MAC learning control
Port control, isolation, and loop detection

VLAN: 4K 802.1q VLANs
Link aggregation: 32 TRUNK groups, each supporting up to 8 ports
Flow control: IEEE 802.3x and back pressure

Bandwidth control: Smallest frame size is 64kbps.
Multicast: 256 Layer 2 multicast table capacity and IGMP Snooping
Layer 3 aware
Dynamic VLANs

TV Whitespace: Wireless over VHF/UHF Frequency

The mission of the Raptor**XR** is to provide our customers with the ability to reliably deliver, in both outdoor and indoor environments, backhaul wide-area coverage and broadband capacity unattainable with licensed and unlicensed systems.

VHF and UHF Wireless Technology opens vast regions and territories to internet connectivity currently inaccessible via fiber, microwave or satellite. The RaptorXR broadband radio system uses VHF and UHF TV spectrum to deliver reliable and cost effective secure internet service for government, industrial and commercial applications.

Operating Bands:
UHF RaptorXR - 470-698 MHz
Operating Bandwidths: 5/6/7/8 MHz
Maximum EIRP Power Output: 36 dBm (4 Watts)
Rx Sensitivity and useful full-duplex
end-to-end data rates:

UHF Standard 8 MHz TV Channel bandwidth
Range: Up to 50 km
Minimum useful sensitivity: -94 dBm
Minimum useful full duplex data rate: 6.2 mbps
Maximum useful full duplex rate
and required signal level input: 35 Mbps@ -75 dBm

RaptorXR Estimated Range/Coverage (NLOS)

FREQUENCY MHz	BAND	IN-CITY RANGE/mi	RURAL RANGE/mi
174-216	High VHF	10	35+
470-698 excluding 602-620	UHF	7	25+
903-928	UHF	4	10
2400	802.11g/n WiFi	2.5	7
5800	802.11a	1	4

ICCN unified wireless solutions solves every requirement for short, medium, and long range connectivity

City Non-Line-of-Sight
Rural Urban
Digital Divide
Services Emergency
Private Network

SECURITY

• Meets requirements of DHS/NIST Guide to Industrial Control System Security NIST Special Publication 800-82 Rev.1 (May 2013)

• Robust suite of physical, firmware and software tools to secure and defend against field intrusions and data theft
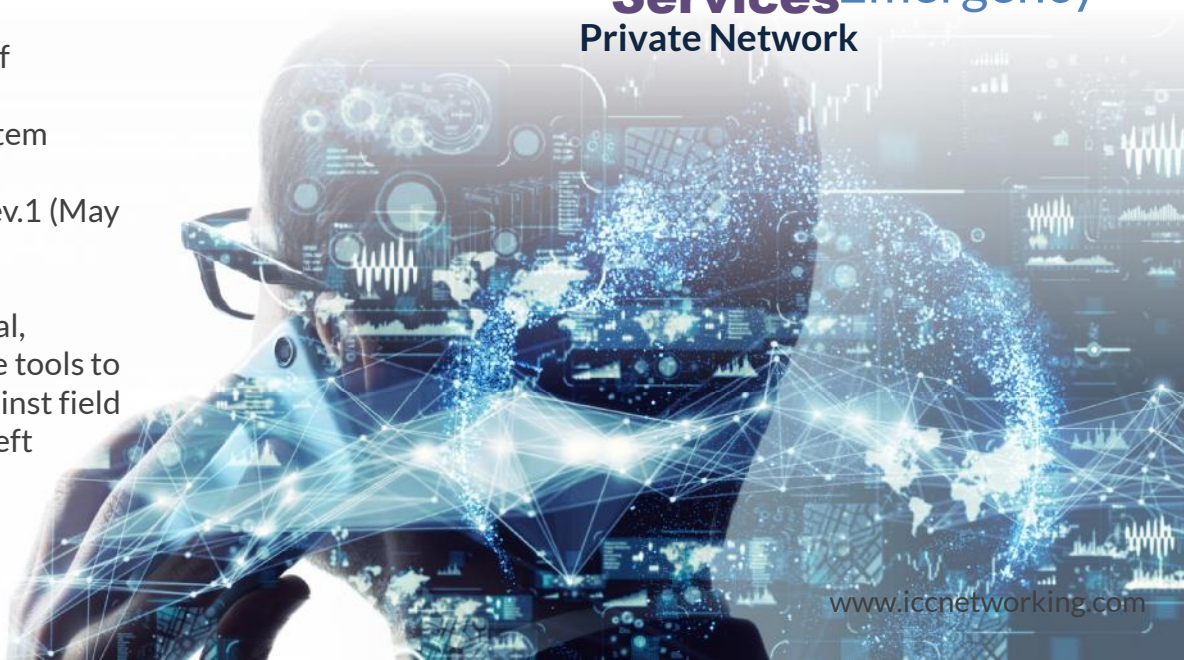
Accessories, Licensing, and Support

UniCAP Product Accessories	
UC-12-KIT1	UniCAP KIT is a pre-packaged carrier system (1 UC-12-Base, 1 UC-12-Blank + 2 UC-12-EXP, 2 UC-12-MNT, 2 UC-JP-18 and 2 UC-JP-26)
UC-MNT	UniCAP Mounting Assembly for mounting 2 UniCAP units to a Pole
UC-JP-18	UniCAP 18" Outdoor Cat5e RJ-45 Jumper Cable
UC-JP-26	UniCAP 26" Outdoor Cat5e RJ-45 Jumper Cable

Wireless Product Accessories Antennas, Cables, and Power Injectors	
PWR-INJ	Gigabit Power Over Ethernet (POE) Injector featuring 30W, 52V, and 1000Mbps IEEE 802.3at/af
ANT-245GHZ	2.4GHz & 5.8GHz (dual-band) 7dBi Omni directional antenna with an N-Male connector designed for indoor or outdoor use
ANT-OMNI-12	High gain long range MIMO omni directional antenna with 2 x 2 12 dbi performance and 2 N-female connectors
ANT-DUALOMNI-12	High gain long range Dual MIMO Omni directional antenna with 2 x 8 12 dBi performance and 2x2.4GHz and 2x5GHz N-female connectors
ANT-DISH-24	High gain long range directional MIMO parabolic dish antennas with up to 24 dBi gain and 2 N-female connectors
ANT-CABLE-4	4ft (122cm) LMR240 pigtail cable N male to N male connector. Qty 2 units included
ARC Basic	activeARC device license to upgrade for any standalone AE (ICX10UAD) or AX (ICX20UAD) series devices enabling them to be managed via the activeARC Cloud Management System. Per AP upgrade and valid for 5 years.

Switch Accessories	
10GSFP-850	10G SFP+ optical module, 850nm 300m
10GSFP-1310	10G SFP+ optical module, 1310nm 10km
1GSFP-550-MM	1GSFP Gigabit module, 550nm, multimode
1GSFP-1310-SM	1GSFP Gigabit module, 1310nm, single mode

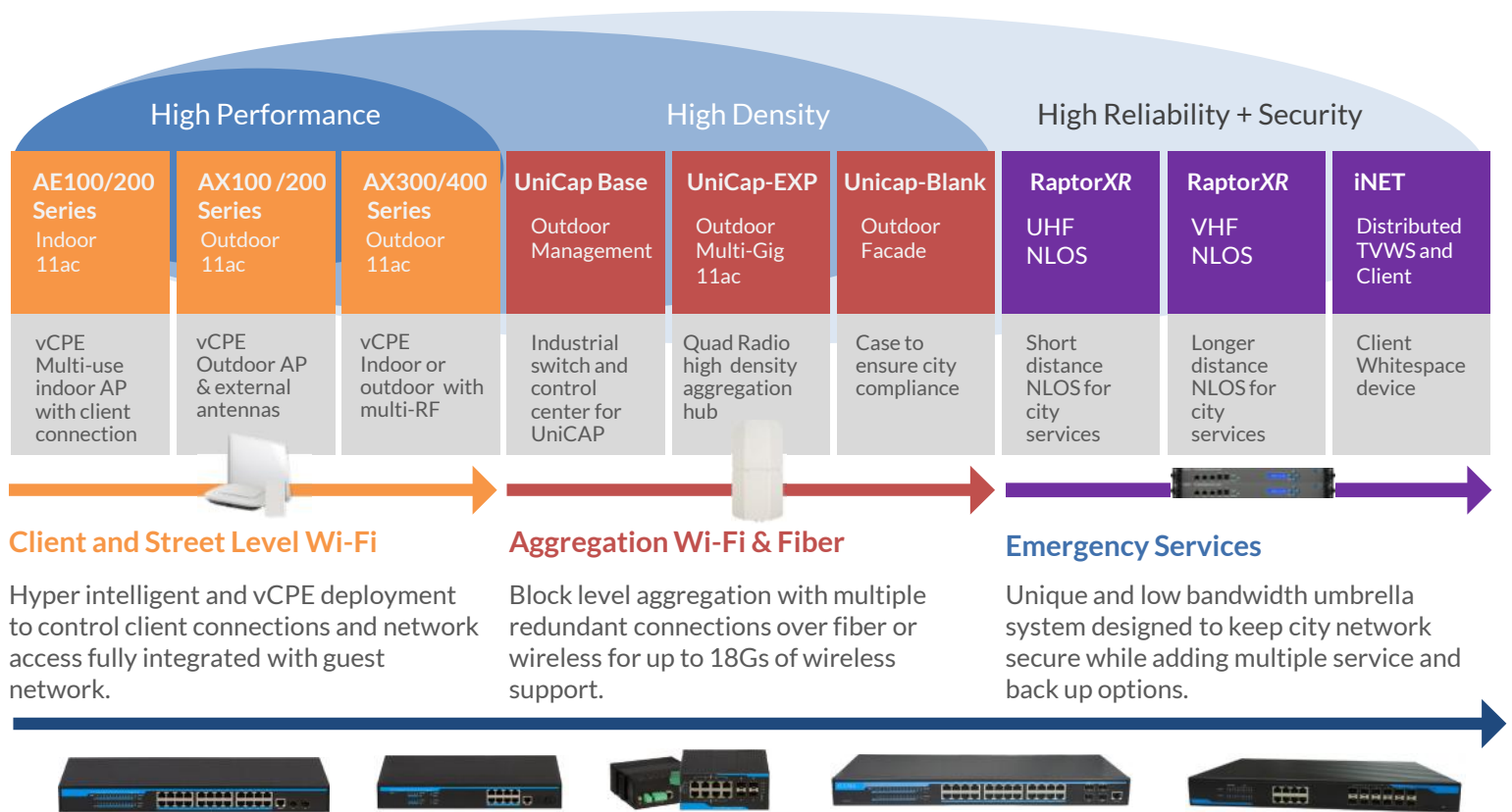| Optional Service and Support WLAN Site Survey	
3D Survey	Enterprise predictive site survey featuring iBwave 3D design models, commissioning, PIM test, budget estimates, carrier handling and deliverable
active-UAD	Open architecture developers code designed for users with their own management system and integration capabilities. This is a yearly server and support fee

Optional End User Support Technical and Warranty Return Support	
IC10S	1YR Extended User Support Per Device
ICAPS	1YR Access Point RMA Warranty Support
ICESS	1YR Ethernet Switch RMA Warranty Support

ICCN

ICCN's unified LAN, WLAN, WWAN solutions deliver all connectivity needs.

ICCN's unified IP data networking solutions provide you with tools spanning client connectivity, aggregation PoE Plus switching, hybrid wireless hubs, and non-line-of-sight long distance TV Whitespace. We reduce barriers to connectivity while increasing your network's viability.

High Performance			High Density			High Reliability + Security		
AE100/200 Series Indoor 11ac	**AX100 /200 Series** Outdoor 11ac	**AX300/400 Series** Outdoor 11ac	**UniCap Base** Outdoor Management	**UniCap-EXP** Outdoor Multi-Gig 11ac	**Unicap-Blank** Outdoor Facade	**Raptor***XR* UHF NLOS	**Raptor***XR* VHF NLOS	**iNET** Distributed TVWS and Client
vCPE Multi-use indoor AP with client connection	vCPE Outdoor AP & external antennas	vCPE Indoor or outdoor with multi-RF	Industrial switch and control center for UniCAP	Quad Radio high density aggregation hub	Case to ensure city compliance	Short distance NLOS for city services	Longer distance NLOS for city services	Client Whitespace device

Client and Street Level Wi-Fi

Hyper intelligent and vCPE deployment to control client connections and network access fully integrated with guest network.

Aggregation Wi-Fi & Fiber

Block level aggregation with multiple redundant connections over fiber or wireless for up to 18Gs of wireless support.

Emergency Services

Unique and low bandwidth umbrella system designed to keep city network secure while adding multiple service and back up options.

POWER

ICCN unified solutions are designed for flexibility. IEEE802.11ac, TV Whitespace, 1G/10G wired connectivity deliver power to your networks.

PLACEMENT

ICCN devices are software-driven and can fit your needs today and tomorrow. These devices can be used for any environment where you need wireless, performance, and management.

PERFORMANCE

ICCN flexibility and hyper intelligence is the heart of your network ecosystem. Combined with advanced features at every level of your network, performance is assured.

VALUE

ICCN devices are also virtual customer premise equipment (vCPE) and allow you to evolve your network based on need. Value in features, security, management, and cost are central to the your new solution.

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ICCN

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ICCN's White Glove Service provides advanced assistance to our premiere partners including:

- Dedicate sales engineering for design assistance and training

- Dedicate pre/post sales to help select the right solution partners

- Limited Lifetime Warranty

- 0-RMA Program ensures quick response times

- Evaluation and demonstration scheduling to ensure you validate the solution before shipping

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