

Dodatok č.1 ku zmluve o dielo 018/2018

uzatvorená podľa § 536 a nasl. zákona č. 513/1991 Zb. v znení
neskorších predpisov

medzi

VJ control

A

Obec Pucov

Zmluvné strany

1.1 VJ control s.r.o. so sídlom: Pltnicka 995/28, 013 03 Varín
konajúca prostredníctvom Vladimír Staňo
IČO:7225432
DIČ:2023816784
IČ DPH:SK2023816784
spoločnosť je zapísaná v OR Okresného súdu Žilina Oddiel: Sro
Vložka číslo: 59621/L
Bankové spojenie: Tatra banka a.s. Žilina
Číslo účtu: SK531100 00000 2942466129

ďalej ako „zhotoviteľ“

1.2 Obec Pucov , so sídlom:
konajúca prostredníctvom:

a
Pucov 214, 026 01 Pucov
Ing. Metod Sojčák - starosta
IČO: 00314820
DIČ: 2020561862
Bankové spojenie: VÚB, a.s., Dolný Kubín
Číslo účtu: SK56 0200 0000 0000 2232 5332

ďalej ako „objednávateľ“

I. Preambula

Dňa 3.4.20219 bola uzatvorená zmluva o dielo č. 0.18/2019 medzi zhotoviteľom VJ control s.r.o. so sídlom: Pltnicka 995/28, 013 03 Varín, IČO: 7225432 a objednávatelom Obec Pucov, so sídlom Pucov 214, 026 01 Dolný Kubín, IČO: 00314820 predmetom, ktorej bol záväzok zhotoviteľa dodať dielo Wifi pre teba – obec Pucov.

Zmluvné strany sa dohodli na dodatku č. 1 ku zmluve o dielo 018/2018.
V zmysle zákona č. 343/2015 Z.z. Zákon o verejnom obstarávaní a o zmene a doplnení niektorých zákonov podľa § 18 odseku 1 písm. e) nedochádza k podstatnej zmene pôvodnej zmluvy bez ohľadu na hodnotu tejto zmeny.

II. Predmet dodatku

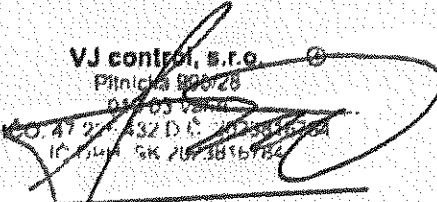
Pôvodné znenie ods. 6.1 čl. V. Záručná doba zmluvy sa nahrádza novým znením nasledovne:
6.1 Zhotoviteľ preberá záväzok, že vybudovaný systém bude po dobu 60 mesiacov od dátumu odovzdania a prevzatia funkčný a spôsobilý na dohodnuté užívanie.

**Článok III.
Záverečné ustanovenie**

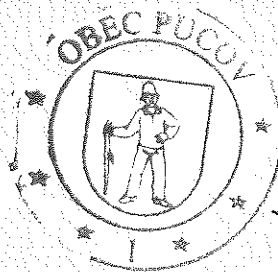
1. Tento dodatok nadobúda platnosť a účinnosť dňom podpisu oboma zmluvnými stranami.
2. Tento dodatok bol vyhotovený v štyroch vyhotoveniach s platnosťou originálu, pričom objednávateľ obdrží 3 vyhotovenia a zhotoviteľ 1 vyhotovenie
3. Zmluvné strany vyhlasujú, že si tento dodatok prečítali, vzájomne vysvetlili, jeho obsahu porozumeli a na znak súhlasu s ním ho slobodne, vážne, dobrovoľne, s určitosťou, nie v tiesni a za nápadne nevýhodných podmienok vlastnoručne podpísali a sú si plne vedomí následkov z neho vyplývajúcich.
4. Tento dodatok sa stáva neoddeliteľnou súčasťou zmluvy.
5. Neoddeliteľnou súčasťou dodatku sú aj prílohy:
Príloha 1: test splnenia technických parametrov (TSTP) v rámci „Wifi pre Teba“ rozšírený o konkrétne časti technických listov zodpovedajúcich relevantnému parametru.
Príloha 2: Podrobný opis AP s väzbou na finančné limity
Príloha 3: Technické listy dodávaných aktívnych prvkov: Datasheet k AP cnPilot E500 a Datasheet k AP cnPilot E410

V Pucove, dňa 25.3.2020

VJ control, s.r.o.
Pitnická 808/28
019 03 2444
IČO: 47 244 432 DIČ: SK2023036784
IČ: 2144 GK 2073876784



VJ control, s.r.o.
Vladimír Staňo - konateľ





Obec Pucov
Ing. Metod Sojčák – starosta

Test splnenia technických parametrov (TSTP) v rámci "Wifi pre Teba"

TSTP slúži pre žiadateľa ako podklad pre špecifikáciu riešenia spĺňajúcu minimálne technické parametre požadovaných výzvu.

Technické parametre riešenia sú navrhnuté v súlade so schválenou Štúdiou uskutočniteľnosti <https://metals.finance.gov.sk/studia/detail/8c95df2d-700e-47ce-a1b0-4cbf3334b453?tab=documents> a musia spĺňať požiadavky Robustného, Spôľahlivého a Bezpečného produktu, ktorý poskytne občanom bezplatný prístup na internet prostredníctvom Wifi pripojenia.

1. **Robustný:** definuje minimálne technické parametre Prístupového bodu (Access pointu), resp. ostatného HW vybavenia,
2. **Spôľahlivý:** definuje minimálne podmienky pre poskytnutie kvalitného internetového pripojenia,
3. **Bezpečný:** definuje minimálne podmienky pre sieťovú a fyzickú bezpečnosť.

Upozornenie: výsledky tohto testu slúžia výlučne pre potreby žiadateľa a nie sú zárukou výsledku v procese schvaľovania žiadosti o NFP.

Otázka č.	Zhľadie otázky	Odpoveď (po kliknutí na button vyberte jednu z možností)	Poznámka (interný prístupový bod)	Poznámka (externý prístupový bod)
1.	Kompaktné dvojpásmové WiFi zariadenia (2,4GHz - 5 GHz), ktoré sú certifikované pre európsky trh?	Ano	Frequency Bands	Frequency Bands
2.	Životný cyklus použitých produktov vyšší ako 5 rokov?	Ano	MTBF	MTBF
3.	Stredná doba medzi poruchami (MTBF) minimálne 5 rokov?	Ano	MTBF	MTBF
4.	Možnosť centrálného manažmentu pre riadenie, monitoring a konfiguráciu siete (single point of management)?	Ano	Management Modes	Management Modes
5.	Súlad s „802.11ac Wave 1, Institute of Electrical and Electronics Engineers“ (IEEE) štandardom?	Ano	Standards	Standards
6.	Podpora 802.1x IEEE štandardu?	Ano	Wireless Security	Wireless Security
7.	Podpora 802.11r IEEE štandardu?	Ano	Standards	Standards
8.	Podpora 802.11k IEEE štandardu?	Ano	Standards	Standards
9.	Podpora 802.11v IEEE štandardu?	Ano	Standards	Standards
10.	Schopnosť AP obsluhovať naraz aspoň 50 rôznych užívateľov bez zníženia kvality služby?	Ano	Concurrent Client	Concurrent Client
11.	Minimálne 2x2 MIMO (multiple-input-multiple-output)?	Ano	MIMO, Streams	MIMO, Streams
12.	Súlad s Hotspot 2.0 (Passpoint WiFi Alliance certification program)?	Ano	3G/4G/LTE Offload	3G/4G/LTE Offload
13.	Súčasťou dodávky bude: projektová dokumentácia ktorá bude obsahovať sieťové zapojenie aktívnych prvkov siete s IP adresným plánom, Simuláciu pokrytia priestoru, Meranie skutočného pokrytia, technické listy aktívnych prvkov, funkčný popis a vyobrazenie obsahu hotspot portálu s umiestneným logom?	Ano		

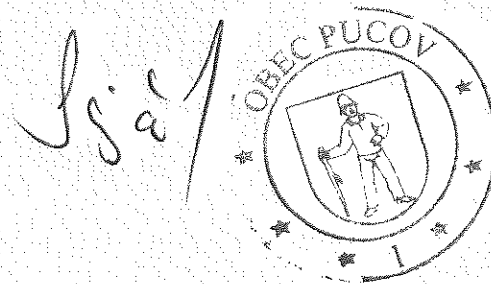
Všetky otázky sú zodpovedané

0

Počet odpovedí "nie"

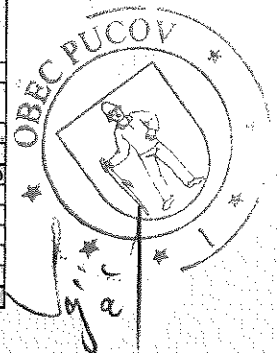
Počet nezodpovedaných otázok

<input checked="" type="checkbox"/>	0
<input checked="" type="checkbox"/>	0



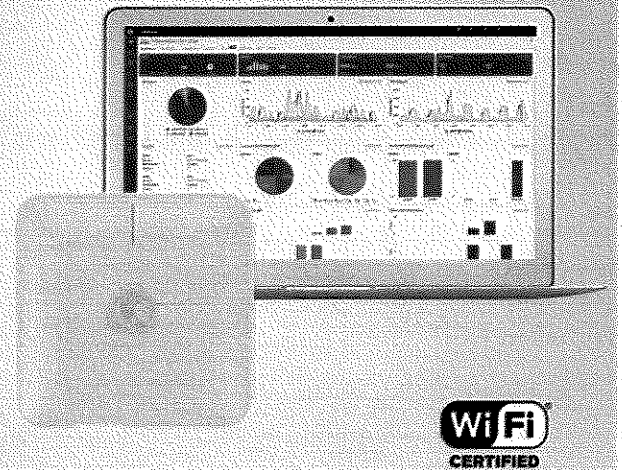
Príloha č. 1: Podrobný popis prístupového bodu (AP) s väzbou na finančné limity

Položka	Merná jednotka	Počet jednotiek	Jednotková cena (v EUR bez DPH)	Vysútažená suma celkom (v EUR s DPH)	Limity podľa Príručky pre oprávnenosť výdavkov PO7 OPII pre dopytovo orientované projekty „WIFI pre Teba“ (max. suma za 1 AP v EUR s DPH)
Externý prístupový bod (AP) č. 1 - 10				(nevypĺňa sa)	1 500,00
Access point CPU nominal frequency: 720 MHz Size of RAM: 64 MB 10/100/1000 Ethernet ports: 1 Wireless standards: 802.11a/n/ac Secondary wireless standards: 802.11b/g/nPoE in: 802.3at Supported input voltage: 11 V - 57 V Dimensions: 185 x 85 x 30 mm Operating temperature range: -40 to +50C Max Power consumption: 12W Storage type: FLASH Storage size: 16 MB	ks	10	330	3960	(nevypĺňa sa)
Router board Desktop metal case, 5xEthernet, 5xGigabit Ethernet, PoE out on port 10, 600MHz CPU, 64MB RAM, RouterOS L4 CPU nominal frequency 600 MHz Dimensions 214x86mm Size of RAM 64 MB PoE in Passive PoE10/100 Ethernet ports 5 10/100/1000 Ethernet ports 5	ks	1	90	108	(nevypĺňa sa)
Montáž inštalácia Access point	ks	10	70	840	(nevypĺňa sa)
Montáž a inštalácia programovanie router board	ks	1	70	84	(nevypĺňa sa)
Inštalčná krabica do exteriéru	ks	4	35	168	(nevypĺňa sa)
Montáž krabice nevybušnej do exteriéru	ks	4	15	72	(nevypĺňa sa)
1000 Mbps optický port, RJ45 port pre prenos, 8x 100 Mbps PoE+ portov IEEE802.3af/at, 1 port UPLINK, at standard < 120W, at standard < 240W, prenos do 150 m, napájanie DC 48V-56V, ESD: 6 kV, prepät. ochrana : 6 kV	ks	5	235	1410	(nevypĺňa sa)
montáž a programovanie switcha	ks	5	70	420	(nevypĺňa sa)
Poskytuje 100 Mbps 1 fiber a 1 ethernet port, dokáže konvertovať dáta fiber a ethernetom, 1x9 opt. modul a SC port, single mód single fiber, prenos až na 20 km, podporuje IEEE802.3af/at; podporuje rôzne typy SFP modulov, IEEE802.3 10BASE-T, IEEE802.3 100BASE-TX/FX	ks	4	80	384	(nevypĺňa sa)
SFP modul 100/10000	ks	8	15	144	(nevypĺňa sa)
Nástenný rozvádzač 12 SC FFTx box	ks	4	35	168	(nevypĺňa sa)
montáž nástenného rozvádzača	ks	4	15	72	(nevypĺňa sa)
optický kábel 12 vl 9/125 samonosný flat dro	m	2300	0,7	1932	(nevypĺňa sa)
montáž optického kábla ťahanie a uchytovanie	m	2300	0,7	1932	(nevypĺňa sa)
dátový gigabitový vonkajší kábel samonosný	m	350	0,5	210	(nevypĺňa sa)
Montáž dátového vonkajšieho kábla oznamov	m	350	0,5	210	(nevypĺňa sa)
kovka na uchytenie kábla	ks	160	3	576	(nevypĺňa sa)
digitál SM SC/UPC modrý	ks	8	1,5	14,4	(nevypĺňa sa)
zváranie optického kábla	ks	8	15	144	(nevypĺňa sa)
adaptér SC/UPC modrý	ks	8	1,5	14,4	(nevypĺňa sa)
UPS záložný zdroj 750VA	ks	3	100	380	(nevypĺňa sa)
ODF optický patch panel 24 port	ks	1	50	60	(nevypĺňa sa)
Montáž ODF patch panelu	ks	1	50	60	(nevypĺňa sa)
24 portový metalický gigabitový patch panel	ks	1	40	48	(nevypĺňa sa)
Montáž tienového patch panelu 24 port	ks	1	20	24	(nevypĺňa sa)
Implementácia systému riešenie a integrácia do uceleného celku, programovanie a nastavenie ostatných prvkov, overenie funkčnosti a školenie obsluhy	ks	1	410	492	(nevypĺňa sa)
plošina do výšky 27 m	ks	8	25	240	(nevypĺňa sa)
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
Spolu				14 146,80	(nevypĺňa sa)
Externý prístupový bod (AP) č. n:				(nevypĺňa sa)	1 500,00
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
Spolu					(nevypĺňa sa)
Interný prístupový bod (AP) č. 1:				(nevypĺňa sa)	1 000,00
Access point CPU nominal frequency: 720 MHz Size of RAM: 64 MB 10/100/1000 Ethernet ports: 1 Wireless standards: 802.11a/n/ac Secondary wireless standards: 802.11b/g/nPoE in: 802.3at Supported input voltage: 11 V - 57 V Dimensions: 185 x 85 x 30 mm Operating temperature range: -40 to +50C Max Power consumption: 12W Storage type: FLASH Storage size: 16 MB	ks	1	330	396	(nevypĺňa sa)
Montáž inštalácia Access point	ks	1	70	84	(nevypĺňa sa)
Programovanie nastavenie oživenie systému kompatibilita	ks	1	310	372	(nevypĺňa sa)
				0	(nevypĺňa sa)
Spolu				852,00	(nevypĺňa sa)
Interný prístupový bod (AP) č. n:				(nevypĺňa sa)	1 000,00
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
				0	(nevypĺňa sa)
Spolu					(nevypĺňa sa)
Celkom				14 998,80	



cnPilot e410 Indoor

802.11ac Wave 2 Dual Band 2x2
Indoor Access Point



Future proof your indoor deployments with the compact, low profile 802.11ac Wave 2 Multi-user MIMO (MU-MIMO) beamforming, high-speed e410 Enterprise access point – perfect for schools, malls, hotels and resorts (Hospitality), coffee shops, Multi-dwelling units (MDUs), or any indoor environment that needs reliable, high performance access points.

CONTROLLER MANAGED + AUTONOMOUS

Managed by Cambium's cnMaestro™ cloud controller or On-premises controller, the cnPilot e410 management includes:

- Zero touch onboarding and configuration
- Inventory tracking & Monitoring
- Mass Configuration & Upgrade
- Dashboard views with Alarms
- Troubleshooting
- Hierarchical device organization

CONTROLLER-LESS ROAMING. POWERFUL SIMPLICITY

The e410 supports seamless roaming for up to 2,048 clients without needing a controller in the network! Hotspot portal hosting on the AP itself offers controller-less simplicity.

MONETIZE: VOUCHERS. SOCIAL LOGIN



Monetize your Wi-Fi service with cnMaestro's Guest Access capabilities that support splash page hosting, social login, temporary access vouchers, and payment gateway. These features – along with the ability to create time, rate and volume-limited traffic profiles – make the e410 ideal for hotels, coffee shops, schools, campgrounds, and office guest Wi-Fi.

SERVICE AWARE WLANS FOR BETTER USER EXPERIENCE

Make sure that every connection to an access point is successful. When service to a critical resource such as an external Gateway or AAA is down, the e410 can turn off the impacted SSIDs, enabling client devices to redirect to a functional, neighboring access point.

INDOOR/OUTDOOR WI-FI MESH. FLEXIBILITY

Indoor meshing across multiple e410s, or Indoor/ Outdoor meshing across both the Indoor e410 and the Outdoor Enterprise APs, offers convenient options to wirelessly expand Wi-Fi coverage.

COVERAGE. CAPACITY. SPEED

The plenum-rated e410 packs a max transmit power of 25 dBm and supports 20MHz, 40MHz as well as 80MHz channels on 5GHz – offering more flexibility than ever for both coverage and capacity. Throughput management via Airtime fairness, increased performance by Automatic RF management (AutoRF), and higher client device speeds from band steering ensure your network can adapt to dynamic client behaviors.

HIGH DENSITY, HIGHLY AVAILABLE

A capacity of 256 concurrent client associations and 16 SSIDs, along with dual on-board Active/Standby memory banks, ensure the e410 combines high density with high availability.

LICENSE-FREE HIGH PERFORMANCE AT A LOW PRICE

The 802.11ac wave 2 e410 comes with a free controller and no AP management license fees. No hidden charges. Affordable.

WARRANTY

Limited Lifetime Warranty (5 years).

SPECIFICATIONS

Access Point Specifications

Standards	IEEE 802.11a/b/g/n/ac Wave2 IEEE 802.11d/e/h/i/j/k/r/u/v/w Modulation: BPSK, QPSK, CCK, 16/64/256-QAM Radio modes : DSSS, OFDM	Frequency Bands	2.400 to 2.2484 GHz <i>(Country-specific limits apply, some bands require DFS. DFS bands operation subject to regulatory approval. Check SW release notes for details)</i> 5.150 to 5.250 GHz 5.250 to 5.350 GHz 5.470 to 5.725 GHz 5.725 to 5.850 GHz
MIMO, Streams	2x2-2 MU-MIMO	Power Supply	802.3af PoE Injector, or PoE switch powered
Beamforming	Supported	Dimensions	17.0 x 17.0 x 4.1 cm (6.7 x 6.7 x 1.61 Inch)
Channel Width	20MHz, 40MHz, 80MHz	Weight	384 g (0.86 lb)
Concurrent Clients	256	Operating Temperature	0°C to +50°C (+32°F to +122°F)
SSIDs	16 SSIDs across 2 radios	Operating Humidity	10% to 95% non-condensing
Transmit Power	2.4GHz : 24dBm 5GHz : 25dBm (conducted,total)	Power Consumed	12.95W (max)
Antenna Gain	2.4GHz : 5.25dBi 5GHz : 5.5dBi	LED	Tri-color software controlled LED
Max Data Rate	2.4GHz : 400Mbps 5GHz : 867Mbps	Secure Mounting	Kensington Key Slot
Antenna	Dual linear-polarized, Omnidirectional, integrated	MTBF	1,507,537 hrs at 50°C, 4,431,480 hrs at 25°C
Ethernet Ports	One auto-sensing Auto MDIX Gigabit Ethernet (10/100/1000 Mbps) RJ45 port	Reset Button	Supported
Radio Features	Maximum ratio combining (MRC) Cyclic delay/shift diversity (CDD/CSD) Space-time blocking coding (STBC) Low-density parity check (LDPC) Packet Aggregation: A-MPDU, A-MSDU	Certifications	FCC, CE, IC, UL EN60601-1-2 (Medical EMC), UL2043 Plenum WEEE/RoHS compliance
Wi-Fi Alliance	Wi-Fi certified a/b/g/n/ac WPA2 – Enterprise, Personal WMM, Passpoint	Mounting Options	Wall and Ceiling mount bracket. Desktop option. T-Bar bracket supporting: 14mm, 24mm, 38mm.

Wi-Fi Features

Management Modes	cnMaestro cloud managed cnMaestro on-premises VM controller managed Autopilot (AP as controller for up to 32 AP network) Standalone with AP GUI (http/https), CLI (telnet/ssh)	Wireless Security	WPA-TKIP, WPA-AES, WPA2-TKIP, WPA2-AES WPA-PSK, WPA2-PSK, WPA2-Enterprise, 802.11i 802.1x Authentication with various EAP types (EAP-TLS, EAP-TTLS/MSCAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-AKA', EAP-FAST Protected Management Frames (802.11w)
RF Management	AutoRF automatically manages channel and power	Dynamic SSID Service	by time/date, by monitored host.
Guest Access Captive Portal	cnMaestro Controller Portal Integrates with 3 rd party Guest Access Portals Built-in Portal on AP LDAP & RADIUS authentication Walled Garden with DNS whitelist	MAC Authentication	On-AP MAC filtering list. On-Controller MAC filtering list. RADIUS MAC Authentication. MAC Authentication fallback to Captive Portal
Rate Limiting	Per-client, Per-WLAN static and dynamic rate limiting	Firewall	Layer-2, Layer-3 and DNS ACL. DoS Protection.
Client Isolation	On AP, Network-wide.	3G/4G/LTE Offload	Passpoint (Hotspot 2.0)
Fast Roaming	802.11r, Opportunistic Key Caching, Enhanced Roaming	DHCP Relay	Supported, with Option-82 customization
Airtime Management	Airtime Fairness, Band Steering, Band Balancing	External NMS Monitoring	SNMP v1, v2c, v3
AAA Support	RADIUS Authentication, Accounting, Dynamic Authorization (CoA, DM). Server failover, load-balancing	Client APIs	Client Presence/Location API DNS, NAT and TCP Connecting Logging
QoS	802.11e/WMM QoS. DSCP/ToS mapping.	Time Synchronization	Auto (from controller), NTP
Ethernet (L2) Services	802.1p/802.q, RADIUS assigned VLAN, VLAN per SSID, VLAN pooling. LLDP. IGMP Snooping (V1/v2/v3)	Troubleshooting Tools	Packet Capture, Spectrum Analyzer, DNS check, Ping, Traceroute, Syslog, Speedtest.
Mesh	WDS Mesh with Single and Multiple radio hops.	Traffic Tunnels	L2TP, L2oGRE, PPPoE
Network Services	NAT, DHCP Server	Data Rates (Mbps)	802.11a: 6,9,12,18,24,36,48,54 802.11b/g: 1,2,5.5,6,9,11,12,18,24,36,48,54 802.11n (2.4GHz): 6.5 to 400 802.11ac (5GHz): 6.5 to 866.7

cnMaestro Controller and Network Manager

Flexible Installation	Cloud, Virtual Machine both supported.	Integrated Guest Portal	Customizable Splash Pages SMS OTP Authentication Payment Gateways Support Voucher based authentication Social Login
Network Mgmt	Centralized Configuration, Statistics, Events, Firmware		
Hierarchical Views	Network topology mapped to sites and floors		
Floor Plans	Upload custom floor plans and map APs		
RESTful APIs	Interface with external systems		

THE ADAPTIVE cnPILOT NETWORK

OVER-THE-AIR

- AirTime fairness
- Client (Zap compatible) perf testing
- Guest access limits
- Client location API per AP
- VLAN pooling
- Outdoors: Power CPEs from APs

AP FEATURES

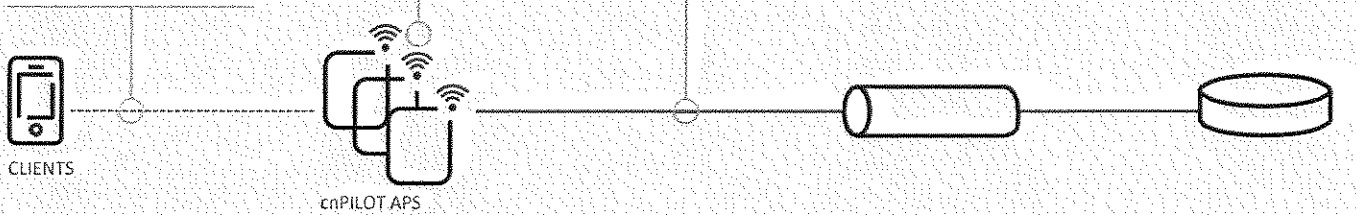
- Multi-hop mesh *autoPilot* controller
- Controller-less roaming
- autoRF dynamic Tx power control
- guest access
- Location APIs

USER TRAFFIC

- OPTIONS
- Local breakout (LBO)
- External GW tunneling – L2TP, L2oGRE, PPPoE
- VLAN pooling and per VLAN per SSID tagging

CONTROLLER:

- CLOUD OR ON-PREMISES (NOC)
- NOC: Setup controller to tunnel user traffic
- Monitor, configure, upgrade all APs
- User access: Data with limits
- SMS notifications



ORDERING INFORMATION

The cnPilot e410 indoor 802.11ac wave 2 access point is available in models with and without PoE injectors.
Regulatory model number (common to all skus) : cnPilot™ e410 indoor

PART NUMBERS

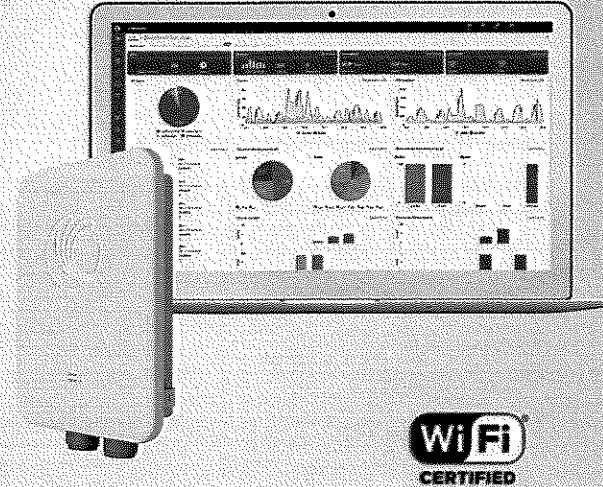
PL-E410PUSA-US	cnPilot E410 Indoor (FCC, US cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PEUA-EU	cnPilot E410 Indoor (EU, EU cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PXXA-RW	cnPilot E410 Indoor (ROW, No cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PEUA-RW	cnPilot E410 Indoor (ROW with EU cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PUKA-EU	cnPilot E410 (EU with UK country cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PUKA-RW	cnPilot E410 (ROW with UK country cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PUSA-RW	cnPilot E410 (ROW with US country cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PINA-RW	cnPilot E410 (ROW with India country cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PCNA-RW	cnPilot E410 (ROW with China country cord) 802.11ac Wave 2, 2x2, AP with PoE Injector
PL-E410PANA-RW	cnPilot E410 (ROW with AUS/NZ cord) 802.11ac Wave 2, 2x2, with PoE Injector
PL-E410PBRA-RW	cnPilot E410 (ROW with Brazil cord) 802.11ac Wave 2, 2x2, with PoE Injector
PL-E410PARA-RW	cnPilot E410 (ROW with Argentina cord) Wave 2, 2x2, 802.11ac with PoE Injector
PL-E410X00A-US	cnPilot E410 Indoor (FCC) 802.11ac wave 2, 2x2, AP
PL-E410X00A-EU	cnPilot E410 Indoor (EU) 802.11ac wave 2, 2x2, AP
PL-E410X00A-RW	cnPilot E410 Indoor (ROW) 802.11ac wave 2, 2x2, AP
PL-E410X00A-JP	cnPilot e410 Indoor (Japan) 802.11ac wave 2, 2x2, AP
PL-E410X00A-IL	cnPilot e410 indoor (Israel) 802.11ac wave 2, 2x2, AP
PL-E410X00A-LK	cnPilot e410 Indoor (Sri Lanka) 802.11ac wave 2, 2x2, AP
PL-E410X00A-CA	cnPilot e410 Indoor (Canada) 802.11ac wave 2, 2x2, AP
PL-E410X00A-EG	cnPilot e410 Indoor (Egypt) 802.11ac wave 2, 2x2, AP
PL-E410PJPA-JP	cnPilot e410 Indoor (Japan, Japan Type A cord) 802.11ac wave 2, 2x2, AP with PoE Injector
PL-E410PILA-IL	cnPilot e410 Indoor (Israel, Israel Type H cord) 802.11ac wave 2, 2x2, AP with PoE Injector
PL-E410PINA-LK	cnPilot e410 Indoor (Sri Lanka, India Type D cord) 802.11ac wave 2, 2x2, AP with PoE Injector
PL-E410PUSA-CA	cnPilot e410 Indoor (Canada, US Type B cord) 802.11ac wave 2, 2x2, AP with PoE Injector
PL-E410PEUA-EG	cnPilot e410 Indoor (Egypt, Europe Type C cord) 802.11ac wave 2, 2x2, AP with PoE Injector
N000900L017A	PoE Gigabit Injector for cnPilot E410, 15W Output at 56V

Discover more information on cnPilot at: <http://community.cambiumnetworks.com/>



cnPilot e500 Outdoor Omni

Gigabit IP67 802.11ac Outdoor Wi-Fi Access Point



Omni coverage for Enterprise campuses, Public Wi-Fi, Hospitality, Educational institutions, Industrial campuses or just about any demanding outdoor environment requiring cost-effective, controller managed WLAN Access Points.

HIGHLIGHTS

Operational superiority - Supporting 256 max concurrent client associations, 16 SSIDs, WPA-2 encryption, Dynamic VLANs, DFS channels, Access control lists (ACL), zero touch provisioning and more, the 802.11ac e500 is the essential workhorse for today's demanding high density outdoor Wi-Fi networks

High performance Wi-Fi network - All cnPilot's Enterprise Access Points (APs), support features like controller-less roaming, dynamic channel selection, automatic transmit power control, band steering, and more – essential features for easy Wi-Fi operations

Mesh Rapidly setup multi-hop mesh networks either dedicating one radio (e.g.: 5 GHz) for mesh backhaul, or using both bands for client access at the same time

Wireless Backhaul Integration – the aux PoE port on the e500 offers PoE out eliminating the need for a second power line – perfect for powering on a standard 802.3af camera, or powering on Cambium's PMP450 or ePMP backhaul subscriber modules (SMs) for wireless backhaul enabled Wi-Fi hotspots

Resilience - Dual on-board Active/Standby memory banks ensure higher availability. The e500 can store two versions of the software and if needed fall back to a working operational software, reducing the likelihood of site visits and increasing network up-time. Standard 3 year Warranty included, for peace of mind.



SPECIFICATIONS

Access Point Specifications

Standards	IEEE 802.11a/b/g/n/ac IEEE 802.11d/e/h/i/k/r/u/v/w Modulation: BPSK, QPSK, CCK, 16/64/256-QAM Radio modes : DSSS, OFDM	Frequency Bands	2.400 to 2.2484 GHz (Country-specific limits apply, some bands require DFS) 5.150 to 5.250 GHz 5.250 to 5.350 GHz 5.470 to 5.725 GHz 5.725 to 5.850 GHz
MIMO, Streams	2x2:2 MIMO	Power Supply	802.3af PoE Injector, or PoE switch. 802.3at or PoE+ if using PoE-Out Aux port.
Channel Width	20MHz, 40MHz, 80MHz	Dimensions	30 x 20.4 x 6.5 cm (11.8 x 8 x 2.55 Inch)
Concurrent Clients	256	Weight	881 g (1.94 lb)
SSIDs	16	Operating Temperature	-30°C to +60°C (-22°F to +140°F)
Antenna	Dual polarized, Omnidirectional, Integrated	Operating Humidity	5% to 95% non-condensing
Transmit Power (conducted total)	2.4GHz : 29dBm 5GHz : 28dBm	Power Consumed	13W (max, without PoE-out) 8W (typical)
Antenna Gain	2.4GHz : 5dBi 5GHz : 5dBi	Secure Mounting	Kensington Key Slot
Max Data Rate	2.4GHz : 300Mbps 5GHz : 867Mbps	Environment Rating	IP67
LED	Two multi-color software controlled LEDs	MTBF	2,331,610 Hours
Interference Mgmt	Hardware LTE Filtering	PoE-Out	Aux Port supports Cambium and 802.3af modes
Ethernet Ports	Two auto-sensing auto MDIX Gigabit Ethernet (10/100/1000 Mbps) RJ45 Ports	Reset Button	Supported
Radio Features	Maximum ratio combining (MRC) Cyclic delay/shift diversity (CDD/CSD) Space-time blocking coding (STBC) Low-density parity check (LDPC) Packet Aggregation: A-MPDU, A-MSDU	Certifications	FCC, CE, IC, UL, EN60601-1-2 (Medical EMC), WEEE/RoHS compliance
Wi-Fi Alliance	Wi-Fi certified a,b,g,n,ac WPA2 – Enterprise, Personal WMM, Passpoint	Mounting Options	Wall and Pole mount bracket. Supports Poles with 1.5" and 3" Diameter.

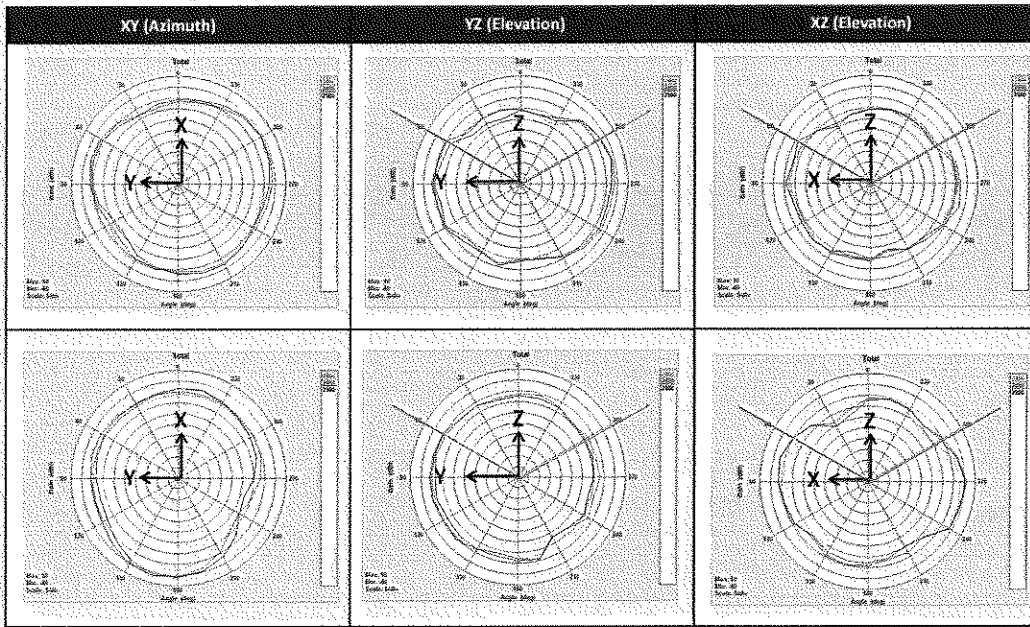
Wi-Fi Features

Management Modes	cnMaestro cloud managed cnMaestro on-premises VM controller managed Autopilot (AP as controller) Standalone with AP GUI (http/https), CLI (telnet/ssh)	Wireless Security	WPA-TKIP, WPA2-AES, 802.11i WPA-PSK, WPA2-PSK, WPA2-Enterprise 802.1x Authentication with various EAP types (EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-AKA', EAP-FAST Protected Management Frames (802.11w)
RF Management	AutoRF automatically manages channel and power	Dynamic SSID Service	By time/date, by monitored host.
Guest Access Captive Portal	cnMaestro Controller Portal Integrates with 3 rd party Guest Access Portals Built-in Portal on AP LDAP & RADIUS authentication Walled Garden with DNS whitelist Wireless as well as Wired devices supported.	MAC Authentication	On-AP MAC filtering list. On-Controller MAC filtering list. RADIUS MAC Authentication. MAC Authentication fallback to Captive Portal
Rate Limiting	Per-client, Per-WLAN static and dynamic rate limiting	Firewall	Layer-2, Layer-3, DNS ACL, DoS Attack Protection.
Client Isolation	On AP, Network-wide.	3G/4G/LTE Offload	Passpoint (Hotspot 2.0)
Fast Roaming	802.11r, Opportunistic Key Caching, Enhanced Roaming	DHCP Relay	Supported, with Option-82 customization
Airtime Mgmt	Airtime Fairness, Band Steering, Band Balancing	NMS Monitoring	SNMP v1, v2c, v3
AAA Support	RADIUS Authentication, Accounting, Dynamic Authorization (CoA, DM). Server failover, load-balancing	Client APIs	Client Presence/Location API DNS, NAT and TCP Connecting Logging
QoS	802.11e/WMM QoS. DSCP/ToS mapping.	Time Synchronization	Auto (from controller), NTP
Ethernet (L2) Services	802.1p/802.q, RADIUS assigned VLAN, VLAN per SSID, VLAN pooling. LLDP. IGMP Snooping (v1/v2/v3)	Troubleshooting Tools	Packet Capture, Spectrum Analyzer, Ping, Traceroute, Syslogs
Mesh	WDS Mesh with Single and Multiple radio hops.	Traffic Tunnels	L2TP, L2oGRE, PPPoE
Network Services	NAT, DHCP Server		

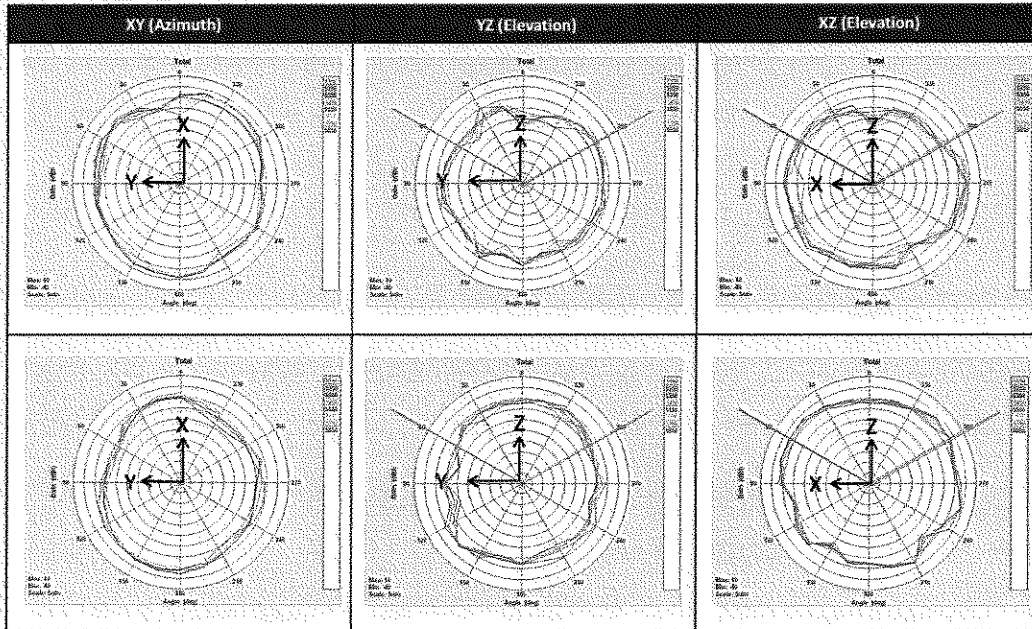
SPECIFICATIONS

2D Gain Patterns

2.4GHz : Antenna1, Antenna2



5GHz: antenna 3, antenna 4



E500 ORDERING INFORMATION: CNPILOT OUTDOOR E500

Regulatory Model Number (common to all SKUs): C000100P500A

Sales part #

Region

PL-E500XXYA-<US/EU/CA/IL/IP/EG/LK/RW>

XX = if this position has a two-digit country code, then That SKU includes a country specific AC line cord
 Y = if this position has a "C", then that SKU includes a PoE Injector and localized AC line cord
 The following countries require a unique two-digit regulatory country code appended to the part number:
 United States (US), Canada (CA), Europe (EU), Israel (IL), Egypt (EG), Sri Lanka (LK). For other certified countries, use the Rest of World (RW) two-digit country code

PL-E500NPSA-RW

e500 without a PoE injector. Available in RoW model

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