

DODATOK Č. 1 K ZMLUVE O DIELO

uzatvorený podľa ustanovenia § 536 až § 565 Obchodného zákonníka

Článok I.

Zmluvné strany

Objednávateľ: Názov: Obec KALINOVO
Sídlo: Obecný úrad Kalinovo, SNP 138/14, 985 01 Kalinovo
Zastúpený: [REDACTED]
IČO: [REDACTED]
DIČ: [REDACTED]
E-mail: obec@kalinovo.sk
(ďalej len „Objednávateľ“)

a

Zhotoviteľ: Názov: PTnet 01, s.r.o.
Sídlo: Kpt. J.Nálepku 844/27, Kalinovo 985 01
IČO: [REDACTED]
DIČ: [REDACTED]
E-mail: ptnet@ptnet.sk
Tel.: 0905 654 968
Zapísaný: [REDACTED]
Zastúpený: [REDACTED]
(ďalej len „Zhotoviteľ“)

Článok II.

Predmet dodatku

Tento dodatok je uzatvorený v zmysle § 18 ods. 1 písm. e) ZVO. Týmto Dodatkom č. 1 k Zmluve o dielo zo dňa 04.11.2019 sa upravuje dĺžka záručnej doby a dopĺňajú sa prílohy k zmluve v zmysle Usmernenia č. 4 k Výzve č. OPII-2018/7/1-DOP "Wifi pre Teba" " a z dôvodu, že Dodatkom č. 1 sa zároveň mení typ dodávaného zariadenia za ekvivalentný, čím sa potvrdzujú jeho požadované minimálne technické parametre.

Pôvodný bod 7.2 zmluvy sa nahrádza novým znením:

Bod 7.2 zmluvy znie:

7.2 Dodávateľ preberá záruku za akosť vykonaných prác v zmysle obchodného zákonníka. Záručná doba pri jednotlivých komponentoch technologických častí je určená ich výrobcom v záručných listoch. Záručná doba za montážne práce a kabeláž sa poskytuje v dĺžke 60 mesiacov, pričom záruka začína plynúť od ukončenia diela v zmysle tejto zmluvy. Dodávateľ zodpovedá, že celý predmet zákazky, že bude počas 60 mesiacov spôsobilý na zmluvný účel a zachová si počas tejto lehoty dohodnuté vlastnosti. Záručná doba začne plynúť odo dňa

nasledujúceho po podpísaní Protokolu o uvedení Diela do prevádzky obidvoma zmluvnými stranami.

Dodatkom sa mení Príloha č. 1 – Minimálne technické parametre ponuky zhotoviteľa za novú prílohu

Zoznam príloh sa dopĺňa o prílohy č. 3,4,5:

- Príloha č. 1 Minimálne technické parametre ponuky Zhotoviteľa
- Príloha č. 2 Prehľad umiestnenia prístupových bodov
- Príloha č. 3 Test splnenia technických parametrov
- Príloha č. 4 Podrobný popis prístupového bodu
- Príloha č. 5 Technické listy dodávaných aktívnych prvkov

Všetky prílohy tvoria neoddeliteľnú súčasť Zmluvy o dielo.

Článok III. ZÁVEREČNÉ USTANOVENIA

- 4.1. Zmluvné strany berú na vedomie, že ostatné ustanovenia Zmluvy o dielo ostávajú týmto Dodatkom nedotknuté a platia v pôvodnom znení.
- 4.2 Tento Dodatok nadobúda platnosť a účinnosť dňom jeho podpísania oprávnenými zástupcami oboch zmluvných strán.
- 4.3 Tento Dodatok je vyhotovený v troch rovnopisoch, z ktorých poskytovateľ po jeho podpísaní obdrží jedno vyhotovenie a objednávateľ dve vyhotovenia.
- 4.4. Zmluvné strany vyhlasujú, že si tento Dodatok prečítali, jeho obsahu porozumeli a na znak toho, že obsah tohto Dodatku zodpovedá ich skutočnej a slobodnej vôli, ho podpísali.

V Kalinove, dňa 18.11.2020

V Kalinove, dňa 18.11.2020



Zhotoviteľ:



Objednávateľ:




Wi-Fi CERTIFIED™ Interoperability Certificate

This certificate lists the features that have successfully completed Wi-Fi Alliance interoperability testing.
Learn more: www.wi-fi.org/certification/programs



Certification ID: WFA77979

Page 1 of 2

Date of Last Certification	September 26, 2019
Company	EnGenius Technologies, Inc.
Product	AC1300 Wave2 IP67 Outdoor AP
Model Number	ENH1350EXT
Product Identifier(s)	
Category	Routers
Subcategory	Access Point for Home or Small Office (Wireless Router)
Hardware Version	Product: V.1, Wi-Fi Component: V.1
Firmware Version	Product: V.3, Wi-Fi Component: V.3
Operating System	Linux
Frequency Band(s)	2.4 GHz, 5 GHz - Concurrent

Summary of Certifications

CLASSIFICATION	PROGRAM
Connectivity	Wi-Fi CERTIFIED™ a, b, g, n, ac
	WPA2™ – Enterprise, Personal
	WPA3™ – Enterprise, Personal
Optimization	WMM®
Access	Passpoint®



Wi-Fi CERTIFIED™ Interoperability Certificate



Certification ID: WFA77979

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Security

WPA2™ – Enterprise, Personal
WPA3™ – Enterprise, Personal (Aug 2019)
EAP Type(s)
Any EAP Type
Protected Management Frames

Wi-Fi CERTIFIED™ a

Wi-Fi CERTIFIED™ b

Wi-Fi CERTIFIED™ g

Wi-Fi CERTIFIED™ n

2.4 GHz, 5 GHz - Concurrent
2 Spatial Streams 2.4 GHz
2 Spatial Streams 5 GHz
Short Guard Interval
TX A-MPDU
STBC Transmit
40 MHz operation in 2.4 GHz, with coexistence mechanisms
40 MHz operation in 5 GHz

Wi-Fi CERTIFIED™ ac

2 Spatial Streams 5 GHz
Rx MCS 8-9 (256-QAM)
Tx STBC 2x1
Rx A-MPDU of A-MSDU
Tx SU beamformer
Low Density Parity Check coding
Tx DL MU-MIMO
RTS with BW Signaling

WMM®

Passpoint®

Release 2

Passpoint® (Release 2)

Online Signup (OSU) and Policy Provisioning

Príloha č. 1 Príručky pre prijímateľa DOP Wifi pre Teba - príloha k ŽoP - Podrobný popis prístupového bodu (AP) s väzbou na finančné limity

Položka	Merná jednotka	Počet jednotiek	Jednotková cena (v EUR)	Vysúfažená suma celkom	Limity podľa Príručky pre oprávnenosť výdavkov PO7 OPIL pre dopytovo orientované projekty „Wifi pre Teba“ (max. suma za 1 AP)
Externý prístupový bod (AP) č. 1:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Priestranstvo pred kultúrnym domom				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 2:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Autobusová zástavka - Tomašovská				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 3:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Železničná zástavka				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 4:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Námestie obce				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 5:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Miestny park - detské ihrisko				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 6:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Miestny park - jazero s altánkom				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 7:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Školko-športový areál - priestranstvo pred polyfunkčnou budovou				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Interný prístupový bod (AP) č. 8:		(nevypĺňa sa)		1 372,20 €	1 000,00 €
Priestranstvo pred športovou halou				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 9:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Nádvorie pred obecným úradom				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Externý prístupový bod (AP) č. 10:		(nevypĺňa sa)		1 372,20 €	1 500,00 €
Školko-športový areál - viacúčelové ihrisko				(nevypĺňa sa)	
EnGenius ENH1350EXT		1	1 372,20 €	1 372,20 €	(nevypĺňa sa)
Celkom				13 722,00 €	

Položka	Merná jednotka	Počet jednotiek	Jednotková cena (v EUR s DPH)	Vysútažená suma celkom (v EUR s DPH)	Limity podľa Príručky pre oprávnenosť výdavkov PO7 OPIL pre dopytovo orientované projekty „Wifi pre Teba“ (max. suma za 1 AP v EUR s DPH)
Externý prístupový bod (AP) č. 1:	(nevypĺňa sa)			1 372,20 €	1 500,00 €
Priestranstvo pred kultúrnym domom	(nevypĺňa sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevypĺňa sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiaci drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 2:	(nevypĺňa sa)			1 372,20 €	1 500,00 €
Autobusová zástavka- Tomášovská	(nevypĺňa sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevypĺňa sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiaci drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 3:	(nevypĺňa sa)			1 372,20 €	1 500,00 €
Železničná zástavka	(nevypĺňa sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevypĺňa sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiaci drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 4:	(nevypĺňa sa)			1 372,20 €	1 500,00 €
Námestie obce	(nevypĺňa sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevypĺňa sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiaci drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 5:	(nevypĺňa sa)			1 372,20 €	1 500,00 €
Miestny park - detské ihrisko	(nevypĺňa sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevypĺňa sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiaci drot	m	40	2,00 €	80,00 €	

connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 6:	(nevyplní sa)		1 372,20 €	1 500,00 €	
Miestny park - jazero s altánkom	(nevyplní sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevyplní sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiací drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 7:	(nevyplní sa)		1 372,20 €	1 500,00 €	
Školsko-sportový areál - priestranstvo pred polyfunkčnou budovou	(nevyplní sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevyplní sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiací drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Interný prístupový bod (AP) č. 8:	(nevyplní sa)		1 372,20 €	1 000,00 €	
Priestranstvo pred športovou halou	(nevyplní sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevyplní sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiací drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 9:	(nevyplní sa)		1 372,20 €	1 500,00 €	
Nádvorie pred obecným úradom	(nevyplní sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevyplní sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiací drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Externý prístupový bod (AP) č. 10:	(nevyplní sa)		1 372,20 €	1 500,00 €	
Školsko-sportový areál - viacúčelové ihrisko	(nevyplní sa)				
EnGenius ENH1350EXT	ks	1	1 171,20 €	1 171,20 €	(nevyplní sa)
montážna sada na stĺp / stenu	ks	1	20,00 €	20,00 €	
4-Port 10/100/1000 Mbps GPON	ks	1	66,00 €	66,00 €	
Prepät'ová ochrana	ks	1	32,00 €	32,00 €	
Napájací kábel 240 V; 1,8m	ks	1	2,00 €	2,00 €	
UTP Cat6, LSOH + vodiací drot	m	40	2,00 €	80,00 €	
connector RJ45 s vodeodolnou krytkou	ks	2	0,50 €	1,00 €	
Celkom			13 722,00 €		

Minimálne technické parametre / Cenová ponuka uchádzača

poz. č.	Technický opis	minimálny technický parameter	ks	typové označenie podkancelio zariadenia	Cena za 1 ks v EUR bez DPH	Cena celkom v EUR bez DPH
Externý Access Point						
			10			
1	Externý AP	Kompletné drahotné WiFi zariadenia (2,4GHz - 5 GHz) Zvukový signál používajúci produktový výšlivo 5 rokov Súčasťou dátového bodu (MTBF) minimálne 5 rokov Možnosť centrálného manažmentu pre riadenie, monitorovanie a konfiguráciu siete (single point of management) Súlad s 802.11ac Wave 1 Podpora 802.11n IEEE Standardu Podpora 802.11i IEEE Standardu Podpora 802.11a IEEE Standardu Podpora 802.11b IEEE Standardu Schopnosť AP obsluhovať najviac 50 rôznych užívateľov bez zníženia kvality služby Minimálne 2x MIMO (multiple-input-multiple-output) Súlad s IEEE 802.3 (PoE) Alliance certification program prevádzková teplota -20C až +60C montážna sada na stenu Switch 4-Port 10/100/1000 Mbps PoE Gigabit Desktop Switch Napájanie portov PoE: 802.3at, 30 W Prepásov odstránenie Napájanie kábel 240 V, 1.8m Kabeláž UTP Cat5, LSZH max. 100m 2x konektory RJ45 s vodoodpuškovou krytkou Vodacia lišta max. 100m (dĺžka, prevádzka kabeláže vzhľadom)			13 722,00 €	13 722,00 €
Interný Access Point						
			0			
2	Interný AP	Kompletné drahotné WiFi zariadenia (2,4GHz - 5 GHz) Zvukový signál používajúci produktový výšlivo 5 rokov Súčasťou dátového bodu (MTBF) minimálne 5 rokov Možnosť centrálného manažmentu pre riadenie, monitorovanie a konfiguráciu siete (single point of management) Súlad s 802.11ac Wave 1 Podpora 802.11n IEEE Standardu Podpora 802.11i IEEE Standardu Podpora 802.11a IEEE Standardu Podpora 802.11b IEEE Standardu Schopnosť AP obsluhovať najviac 50 rôznych užívateľov bez zníženia kvality služby Minimálne 2x MIMO (multiple-input-multiple-output) Súlad s IEEE 802.3 (PoE) Alliance certification program prevádzková teplota -20C až +40C montážna sada na stenu alebo strop Switch 4-Port 10/100/1000 Mbps PoE Gigabit Desktop Switch Napájanie portov PoE: 802.3at, 15.4 W Prepásov odstránenie Napájanie kábel 240 V, 1.8m Kabeláž UTP Cat5, LSZH max. 50m 2x konektory RJ45 s vodoodpuškovou krytkou Vodacia lišta max. 50m (prevádzka kabeláže po stene)				- €
Cena celkom v EUR bez DPH			13 722,00 €			
DPH			- €			
Cena celkom v EUR s DPH			13 722,00 €			

ENH1350EXT MTBF - 1. strana

ENH1350EXT MTBF - 1. strana

ENH1350EXT MTBF - 3. strana

ENH1350EXT Data Sheet - 4. strana /Certificate_WFA77979

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Reliability Prediction Summary

File Name: ENH1350EXT-25C.rfp
System: 1102A1230300
Ref Des: Telcordia Issue 3
Description:

Failure Rate: 3873.304252
MTBF (hrs): 258,177
Temperature: 25
Environment: GF, GU - Ground Fixed, Uncontrolled

Assembly Name	Part Number	Ref Des	Quantity	Failure Rate	MTBF
ENH1350EXT	1102A1230300	Telcordia Issue 3	1	3873.304252	258,177

Reliability Prediction Summary

File Name: ENH1350EXT-25C.rfp
Assembly: 1102A1230300
Ref Des: Telcordia Issue 3
Description:

Failure Rate: 3873.304252
MTBF (hrs): 258,177
Temperature: 25
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
7024A0023000	Connection	J704,J705	13.802412	2	41.824066
7104A0251000	Inductor	L632	0.260450	1	0.322681
7006A0008b50	Connection	J5	13.802412	1	23.897574
7016A1644004	Connection	PCB	16.311941	1	31.084669
7024A0050040	Connection	BJ1,BJ4	13.802412	2	41.824066
7104A0105000	Inductor	L28	0.260450	1	0.322681
7104A0166000	Inductor	CM1,CM2, CM3,CM4	0.260450	4	1.163176
7104A0318000	Inductor	L36	0.260450	1	0.322681
7104A0432000	Inductor	L71	0.260450	1	0.322681
7104A0442000	Inductor	LB14,LB17	0.260450	2	0.608357
7104A0481000	Inductor	LB23,LB5	0.260450	2	0.608357
7107A0015000	Inductor	L69,L72,L 73,L74,LB 6	0.260450	5	1.437952
7107A0018000	Inductor	LB13,LB15 ,LB16,LB1 8	0.260450	4	1.163176
7107A0035030	Inductor	LB1,LB2,L B3,LB4	0.260450	4	1.163176
7107A0140000	Inductor	FB1,FB3,F B5	0.260450	3	0.888135
7107A0169000	Inductor	LB12	0.260450	1	0.322681
7107A0175000	Inductor	E1,E5	0.260450	2	0.608357
7107A0190000	Inductor	E6	0.260450	1	0.322681
7107A0194000	Inductor	E10,E11,E 12,E17,E1 8,E7,E8	0.260450	7	1.983715
7118A0196000	Inductor	T2	0.260450	1	0.322681
7121A0068501	Optical Device	LED3,LED 4,LED8	136.291332	3	632.854001
7121A0222400	Optical Device	LED6	136.291332	1	265.520640
7135A0826000	Miscellaneous	Y1	11.792907	1	20.907436
72E00*0000X0	Resistor	E2,E3,E4, E9,R239,R 246,R422, R499,R50 0,R971,R9 8,R99	0.189418	12	2.483248
72E0010106X0	Resistor	R250,R25 4,R814	0.189418	3	0.675577
72E0010306X0	Resistor	R1863,R6 3	0.189418	2	0.466796
72E003910620	Resistor	R965	0.189418	1	0.252073
72E0047306X0	Resistor	R961	0.189418	1	0.252073
72E010010400	Resistor	R69	0.189418	1	0.252073
72E013020420	Resistor	R1924	0.189418	1	0.252073
72E016230400	Resistor	R425	0.189418	1	0.252073

File Name: ENH1350EXT-25C.rfp
Assembly: 1102A1230300
Ref Des: Telcordia Issue 3
Description:

Failure Rate: 3873.304252
MTBF (hrs): 258,177
Temperature: 25
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
72E020*00420	Resistor	R711,R736,R744,R836	0.189418	4	0.881300
72E022000400	Resistor	R251,R253,R818	0.189418	3	0.675577
72E040220420	Resistor	R1925,R717,R837	0.189418	3	0.675577
72E052330401	Resistor	R1923	0.189418	1	0.252073
72E068010400	Resistor	R429	0.189418	1	0.252073
72E082520420	Resistor	R424	0.189418	1	0.252073
72E1068406X0	Resistor	R969	0.189418	1	0.252073
72E110020400	Resistor	R964	0.189418	1	0.252073
72E1178304X0	Resistor	R1922	0.189418	1	0.252073
72E1249204X0	Resistor	R1920	0.189418	1	0.252073
72E1274104X0	Resistor	R966	0.189418	1	0.252073
72E1442104X0	Resistor	R1921	0.189418	1	0.252073
72E164910400	Resistor	R960	0.189418	1	0.252073
72E1649204X0	Resistor	R970	0.189418	1	0.252073
72E20*000000	Resistor	L633,L634,R726,R727,R732,R733,R735,R740,R742,R743,R789,R790	0.189418	12	2.483248
72E2075006X0	Resistor	R653,R654,R655,R656	0.189418	4	0.881300
72E2523204X0	Resistor	R963	0.189418	1	0.252073
72E402040600	Resistor	R968	0.189418	1	0.252073

Reliability Prediction Summary

File Name: ENH1350EXT-25C.rfp
Assembly: 1102A1230300
Ref Des: Telcordia Issue 3
Description:

Failure Rate: 3873.304252
MTBF (hrs): 258,177
Temperature: 25
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
72E90*000000	Resistor	C1017,C1019,C1043,C1052,C878,C879,C901,C905,L42,L46,L49,L53,L56,L62,R20,R221,R369,R371,R373,R400,R402,R421,R423,R426,R427,R428,R431,R432,R435,R440,R497,R498,R54,R546,R547,R550,R581,R605,R617,R631,R632,R634,R665,R669,R670,R673,R674,R677,R679,R680,R683,R688	0.189418	70	13.767033
72E901010620	Resistor	R833	0.189418	1	0.252073
72E901030600	Resistor	R411,R412,R414,R416,R442,R443,R445,R448,R449,R451,R453,R628,R642,R643,R644,R650,R651,R652,R791	0.189418	19	3.863479
72E904720620	Resistor	R616	0.189418	1	0.252073
72E910000420	Resistor	R252	0.189418	1	0.252073
72E910010400	Resistor	R321,R56,R57,R58,R59,R61,R62,R668,R681	0.189418	9	1.886827
72E910030400	Resistor	R407,R718,R737,R746,R835	0.189418	5	1.085075

File Name: ENH1350EXT-25C.rfp
Assembly: 1102A1230300
Ref Des: Telcordia Issue 3
Description:

Failure Rate: 3873.304252
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Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
72E913020400	Resistor	R722,R83 9	0.189418	2	0.466796
72E915000400	Resistor	R597,R59 8,R600,R6 01	0.189418	4	0.881300
72E915010400	Resistor	R410	0.189418	1	0.252073
72E918*00400	Resistor	R698,R70 8	0.189418	2	0.466796
72E922*00400	Resistor	R797	0.189418	1	0.252073
72E924000420	Resistor	R60	0.189418	1	0.252073
72E924010400	Resistor	R404	0.189418	1	0.252073
72E924020420	Resistor	R721,R83 8	0.189418	2	0.466796
72E930000400	Resistor	R699,R70 0,R709,R7 10	0.189418	4	0.881300
72E930020400	Resistor	R738	0.189418	1	0.252073
72E939*00420	Resistor	R596,R59 9	0.189418	2	0.466796
72E949*90400	Resistor	R671,R67 2,R684,R6 85,R697,R 707	0.189418	6	1.287467
72E95*600400	Resistor	R430,R59 0,R593	0.189418	3	0.675577
72E951000400	Resistor	R618	0.189418	1	0.252073
72E954920400	Resistor	R747	0.189418	1	0.252073
72E956*00420	Resistor	R614	0.189418	1	0.252073
72E959010400	Resistor	R123	0.189418	1	0.252073
72E960*40400	Resistor	R322,R32 3,R324,R3 25,R326,R 327,R328, R329,R33 0,R331,R3 32,R333,R 334,R335, R337,R33 8,R339,R3 41,R342,R 344	0.189418	20	4.059770
72E980620400	Resistor	R741,R74 9	0.189418	2	0.466796
72E982500400	Resistor	R591,R59 2,R594,R5 95	0.189418	4	0.881300
73D91*204080	Inductor	L57,L58,L 63,L64	0.260450	4	1.163176
73D91*504080	Inductor	L55,L61	0.260450	2	0.608357

Reliability Prediction Summary

File Name: ENH1350EXT-25C.rfp
Assembly: 1102A1230300
Ref Des: Telcordia Issue 3
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Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
73D91*704080	Inductor	L44,L47,L51,L54	0.260450	4	1.163176
73D91*804080	Inductor	L43,L45,L50,L52	0.260450	4	1.163176
741A05001000	Semiconductor	D10,D11	12.075421	2	40.308394
741A11000026	Semiconductor	D340,D342,D343,D361,D362,D363,D364,D365	12.075421	8	128.500621
741A21000060	Semiconductor	D166	12.075421	1	23.465874
741A52360006	Semiconductor	D168	12.075421	1	23.465874
741A52390000	Semiconductor	D167	12.075421	1	23.465874
741A56000020	Semiconductor	D38	12.075421	1	23.465874
741A58000000	Semiconductor	PD3	12.075421	1	23.465874
742A14980000	Integrated Circuit	U48	3.754809	1	5.647920
742A22330000	Integrated Circuit	U45,U47,U52	7.424954	3	28.681867
742A23750006	Integrated Circuit	U711	6.930299	1	13.477505
742A4018010N	Integrated Circuit	U34	27.750941	1	53.967864
742A50080010	Integrated Circuit	U162	3.754809	1	5.647920
742A51281690	Integrated Circuit	U4	11.888088	1	18.453166
742A54360000	Integrated Circuit	U716	3.754809	1	5.647920
742A74186016	Integrated Circuit	U49	3.754809	1	5.647920
742A8072010n	Integrated Circuit	U8	17.725688	1	34.471535
742A85303200	Integrated Circuit	BU1,BU5	12.466232	2	41.639554
742A85748100	Integrated Circuit	AU1,AU5	17.725688	2	59.207125
742A98173000	Integrated Circuit	U17	6.930299	1	13.477505
743A06053910	Miscellaneous	AU2,AU6,BU3,BU7	0.960000	4	4.572877
89B003906000	Capacitor	C2139	0.211575	1	0.238689
89B70*501010	Capacitor	C872,C877,C898,C903	0.211575	4	0.900528
89B70*801010	Capacitor	C870,C876,C897,C902	0.211575	4	0.900528

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Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
89B701006010	Capacitor	C1015,C1016,C1020,C1064,C1065,C1066,C1067,C1068,C1069,C574,C576,C615,C617,C619,C620,C801,C804,C808,C813,C815,C816,C817,C827,C835,C839,C844,C846,C848,C856,C862,C863,C864,C865,C867,C871,C874,C882,C888,C889,C890,C891,C892,C896,C900	0.211575	44	9.489150
89B701016010	Capacitor	C798,C829	0.211575	2	0.461495
89B701506051	Capacitor	C1040,C1109,C928,C957,C974	0.211575	5	1.118504
89B702*21010	Capacitor	C820,C821,C851,C852,C866,C875,C893,C904	0.211575	8	1.769290
89B704*71010	Capacitor	C1057,C1063	0.211575	2	0.461495
89B708*22010	Capacitor	C802,C803,C833,C834	0.211575	4	0.900528
90B001037012	Capacitor	C1118,C1119	0.211575	2	0.461495
90B001047010	Capacitor	C768,C769,C770,C771	0.211575	4	0.900528
90B001047062	Capacitor	C343	0.211575	1	0.238689
90B006827060	Capacitor	C2138	0.211575	1	0.238689

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Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
90B081047060	Capacitor	C1108,C2135,C912,C954,C970	0.211575	5	1.118504
90B081057061	Capacitor	C1116	0.211575	1	0.238689
90B081057062	Capacitor	C2134	0.211575	1	0.238689
90B082258050	Capacitor	C624	0.211575	1	0.238689
90B084758010	Capacitor	C523,C535,C591,C618,C623,C626,C705,C738,C739,C861,C887	0.211575	11	2.417252
90B101047050	Capacitor	C1124,C1125	0.211575	2	0.461495
90B101047XX1	Capacitor	C1120,C2131	0.211575	2	0.461495
90B104727XX0	Capacitor	C1123	0.211575	1	0.238689
90B181068060	Capacitor	C1023,C1025,C518,C534,C537,C588,C668,C670,C680,C713,C733,C794,C825,C857,C883,C940,C946,C949,C956,C965,C966	0.211575	21	4.567326
90B182268310	Capacitor	C1110,C1111,C920,C921,C958,C976	0.211575	6	1.335866
90B201047062	Capacitor	C1117,C2133,C400	0.211575	3	0.681688
90B201057XX0	Capacitor	C1122	0.211575	1	0.238689
90B201057XX1	Capacitor	C1121,C2132	0.211575	2	0.461495
90B282268061	Capacitor	C1024,C1026,C1112,C1126,C485,C520,C910,C941,C945,C947,C948,C955,C969	0.211575	13	2.848235
90B284768000	Capacitor	C583,C959	0.211575	2	0.461495

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Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
90B301027060	Capacitor	C148,C1842,C1843,C2143,C776,C777,C778,C779	0.211575	8	1.769290
90B301047050	Capacitor	C1056,C792	0.211575	2	0.461495
90B382268XX1	Capacitor	C1127	0.211575	1	0.238689
90B3b4768000	Capacitor	C2140,C2141	0.211575	2	0.461495
90B401057XX0	Capacitor	C2085	0.211575	1	0.238689
90B402257010	Capacitor	C2136,C2137	0.211575	2	0.461495
90B482268000	Capacitor	C951,C967	0.211575	2	0.461495
90B901027010	Capacitor	C1058,C1059,C1114,C483,C486,C507,C525,C621,C622,C930	0.211575	10	2.201492
90B901037010	Capacitor	C551,C552,C553,C555,C557,C558,C560,C561,C562,C563,C564,C565,C566,C575,C578,C580,C582,C589,C873,C899	0.211575	20	4.352756

Reliability Prediction Summary

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Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
90B981047010	Capacitor	C1060,C1061,C1062,C356,C357,C404,C410,C411,C412,C413,C414,C416,C417,C418,C426,C427,C428,C429,C430,C431,C432,C433,C434,C446,C447,C480,C481,C487,C489,C49,C491,C492,C493,C495,C496,C497,C498,C499,C50,C500,C501,C502,C503,C504,C505,C506,C508,C509,C51,C510,C511,1,	0.211575	111	23.770476
90B981047011	Capacitor	C1104,C1106,C1107,C1115,C911,C918,C922,C926,C953,C960,C961,C962,C963,C968,C973,C977,C978,C979	0.211575	18	3.923384
90B981058060	Capacitor	C482,C488,C519,C538,C586,C590	0.211575	6	1.335866
90B9a1047000	Capacitor	C795,C818,C819,C822,C826,C849,C850,C853,C858,C859,C860,C884,C885,C886	0.211575	14	3.063501

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MTBF (hrs): 258,177
Temperature: 25
Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
6309A9443000	Connection	RPSMA JACK	13.802412	1	23.897574
7024A0091000	Connection	IPEX (1.37)	13.802412	1	23.897574
7106A0051000	Inductor	CORE	0.260450	1	0.322681
6309A9443000	Connection	RPSMA JACK	13.802412	1	23.897574
7024A0091000	Connection	IPEX (1.37)	13.802412	1	23.897574
7106A0051000	Inductor	CORE	0.260450	1	0.322681
7006A0002020	Connection	CN1	13.802412	1	23.897574
7006A0008b10	Connection	RJ1,RJ2	13.802412	2	41.824066
7011A0432020	Miscellaneous	F1	0.800000	1	1.309109
7013A00110*0	Connection	J1	13.802412	1	23.897574
7017A0161000	Switching Device	SW1	20.076235	1	35.700256
7104A0469000	Inductor	LS2	0.260450	1	0.322681
7104A0470000	Inductor	LF1	0.260450	1	0.322681
7118A0149000	Inductor	U4	0.260450	1	0.322681
7121A0001500	Optical Device	D6	136.291332	1	265.520640
7126A0075000	Inductor	T1	7.103189	1	9.934173
73C011012250	Inductor	LS1	0.260450	1	0.322681
741A10004000	Semiconductor	DS1	12.075421	1	23.465874
741A20600000	Semiconductor	BD1	12.075421	1	23.465874
743A81700000	Optical Device	U2	1014.056931	1	1966.417480
745A10650000	Semiconductor	Q1	28.179446	1	41.500270
82A051068430	Capacitor	C8	43.916765	1	63.978452
82A051278430	Capacitor	CS3	43.916765	1	63.978452
82A052778430	Capacitor	CS2	43.916765	1	63.978452
82A054768430	Capacitor	C1	43.916765	1	63.978452
84A953347480	Capacitor	CX1	43.916765	1	63.978452
88C322228000	Capacitor	CY2	43.916765	1	63.978452
88C326818000	Capacitor	CY1	43.916765	1	63.978452
7016A1199007	Connection	PCB	16.311941	1	31.084669
72E112020400	Resistor	RS6	0.189418	1	0.252073
72E115830400	Resistor	RS16	0.189418	1	0.252073
72E175*004X0	Resistor	R24,R25,R26,R27	0.189418	4	0.881300
72E20*0000X0	Resistor	R23	0.189418	1	0.252073
72E2100104X0	Resistor	RS13	0.189418	1	0.252073
72E2130204X0	Resistor	R22	0.189418	1	0.252073
72E2180204X0	Resistor	RS14	0.189418	1	0.252073
72E2220304X0	Resistor	RS5	0.189418	1	0.252073
72E224010420	Resistor	RS11	0.189418	1	0.252073
72E2510004X0	Resistor	RS8	0.189418	1	0.252073
72E2510104X0	Resistor	R16	0.189418	1	0.252073
72E2866204X0	Resistor	R15	0.189418	1	0.252073
72E4010006X0	Resistor	R10,R21	0.189418	2	0.466796

Reliability Prediction Summary

File Name: ENH1350EXT-25C.rfp

Assembly: 1102A1230300

Ref Des: Telcordia Issue 3

Description:

Failure Rate: 3873.304252

MTBF (hrs): 258,177

Temperature: 25

Environment: GF, GU - Ground Fixed, Uncontrolled

Part Number	Category	Ref Des	Unit Failure Rate	Quantity	Total Failure Rate
72E401030620	Resistor	R8	0.189418	1	0.252073
72E401040600	Resistor	R19,R20,R3,R4	0.189418	4	0.881300
72E404700600	Resistor	R6	0.189418	1	0.252073
72E41*0004X0	Resistor	R11,R12,R13,R18	0.189418	4	0.881300
72E4220404X0	Resistor	R2,R5	0.189418	2	0.466796
72E451000420	Resistor	R9,RS1,R52,RS3	0.189418	4	0.881300
741A10000060	Semiconductor	D1,D13,D4	12.075421	3	55.962972
741A58000020	Semiconductor	D3,D9,DP2	12.075421	3	55.962972
742A43130000	Integrated Circuit	U3	3.754809	1	5.647920
742A77380000	Integrated Circuit	U1	3.754809	1	5.647920
89B204716XX0	Capacitor	C4,C9	0.211575	2	0.461495
89B302216XX0	Capacitor	CS1	0.211575	1	0.238689
90B201037XX0	Capacitor	CS5	0.211575	1	0.238689
90B201047050	Capacitor	C15	0.211575	1	0.238689
90B201047XX1	Capacitor	CS6	0.211575	1	0.238689
90B282268310	Capacitor	C12,C13	0.211575	2	0.461495
90B301027XX0	Capacitor	C2	0.211575	1	0.238689
90B301047060	Capacitor	C11	0.211575	1	0.238689

Dual Band AC1300 Wave2 Outdoor Long Range Wireless Access Point

The edge 802.11ac built-in high performance Access Point with MU-MIMO technology for high-density use on multiple applications.

EnGenius Wireless Long Access Point solution is designed for deploying on the versatile indoor and outdoor application. To meet today's requirement on varied net-working environment, EnGenius would like to provide the solution as flexible, robust and effective as the organization they desire.

The state-of-the-art 802.11ac and MU-MIMO technology brings revolutionary connecting speed and bandwidth for diversity of multimedia applications. ENH1350EXT equips with two powerful RF interfaces that support up to 867 Mbps in 5GHz frequency band and 400 Mbps in 2.4GHz frequency band (with 2ss/VHT40 clients). With robust IP67 certified casing, these access points is designed to withstand harsh environment conditions including serve and prolonged exposure to sunlight, extreme cold, frost, snow, rainfall, hail and humidity.



Features

- > Dual radio 2x2 802.11 ac/a/b/g/n Access Point with multi-user MIMO (MU-MIMO)
- > Support up to 867 Mbps in 5GHz frequency band and 400 Mbps in 2.4GHz frequency band (with 2ss/VHT40 clients).
- > Support 802.11ac Wave 2.0 technology to enhance overall bandwidth and speed to wireless client devices.
- > 360° omni-directional antennas to achieve comprehensive coverage for networking client devices under a pervasive environment.
- > External antennas interface for connecting with high directional antennas to deliver signal to long-range distance.
- > Compliance with Proprietary 48V PoE Input for flexible installation over 100 meters (328 feet).
- > Robust housing with IP67 enclosure rated to deploy at extremely weather .
- > Deliver High resolution content or multiple IP surveillance over wireless transmission
- > Choose an operating mode to meet your management and deployment requirement. (AP mode/CB mode/WDS modes/Mesh mode will develop in phase 2, Nov. 2018)

Wireless Management solution is ideal for deployment in these venues:

- | | | |
|------------------------|--------------------|-----------------------|
| > Airport Terminals | > Rail Stations | > Resort Properties |
| > Warehouse Operations | > Petroleum fields | > Parks & Campgrounds |
| > College Campuses | > Seaport | > Stadiums & Arena |
| > Corporate Campuses | > Shopping Malls | > Public Lightings |

Enterprise Robust Solution

ENH1350EXT is easily to install anywhere and its internal electronics have been mounted in an **IP67-rated** enclosure, one of the better waterproof and dustproof rating available, designed to withstand harsh environment conditions including serve and prolonged exposure to sunlight, extreme cold, frost, snow, rainfall, hail and humidity .

Scalable and Flexible deployment for Outdoor Installation

With included mounting accessories, ENH1350EXT provides reliable kits to fix this device on anywhere for delivering wireless signal under outdoor environment. To save the maintenance cost and labors fee on deploying Access Points, ENH1350EXT built with power over Ethernet (PoE) functions for receiving power source from the included PoE adapter. With scalable extension over PoE mechanism, Access Points can receive power and signal source easily from **100 meters or 328 feet distance**.

Meanwhile, EnGenius ENH1350EXT also built in external SMA interfaces for users to connect with other high-gain directional antennas for delivering the wireless signal to long-range distance.

Provide Consistent Performance

Designed by EnGenius could provide the powerful RF interface to assure the reliability of signal strength and sensitivity in a pervasive environment. These optimist interfaces will provide the evenly coverage to assist users to reduce dead spots in their WLAN and boost received signal quality to deliver the best **1.2Gbps** air performance to wireless client devices.

Carry multimedia content over MU-MIMO Transmit Beam-forming technology.

Be a prior AC1300 solution, ENH1350EXT are not only built in powerful RF interfaces, but it also features advanced **Multi-Users Multiple input Multiple output (MU-MIMO)** and **Transmit beamforming (TxBF)** technologies.

The significant improvement on 802.11ac wave 2.0 is MU-MIMO technology, which enhances a dramatic break-through in the performance and flexible transmission to wireless client devices. MU-MIMO allows multiple spatial streams to be allocated to different clients simultaneously, increasing totally throughput, reduce latency, capacity of the WLAN system and increase spectral efficiency.

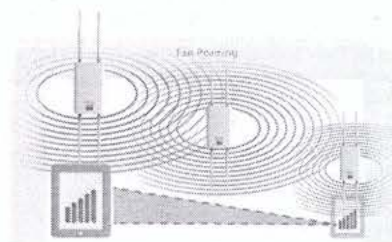
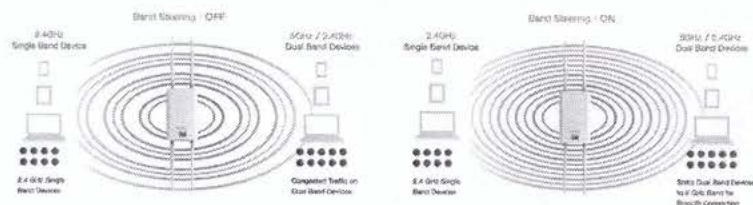
Beamforming is a standard in 802.11ac wave 2.0 which allows Access Points to focus energy of multiple antennas to transmit to a particular client device in that direction of that client. The innovative technology significantly enhances the higher signal-to-noise ratio and greater throughput of that client .

With MU-MIMO and Beamforming technology, ENH1350EXT outdoor long-range Access Point could bring more traffic to wireless client devices simultaneous over the longer distance and save time for serving other wireless client devices.



Exquisite RF Management to Achieve Optimal Wireless Performance

To assist client devices to get the optimal performance under a pervasive environment, **Band Steering** automatically steers dual-band capable client devices to the appropriate channel, while prefer 5GHz or band balancing works to maintain a balanced number of clients per Access Point. Configuring multiple Access Points to serve your own devices (BYOD) in enterprise class wireless LAN environment can enable **Fast Roaming** to reduce roaming delay time and to secure seamless connection on VOIP service when mobile devices move between Access Points.



Securable Portals for different purpose

Administrators can also use **Virtual LAN (VLAN)** with **Guest Network** to isolate each client for avoiding an unnecessary touch, leaking sensitive data, and enhancing Internet security and reliability for internal network.

With **VLAN per SSID**, the Integrate VLAN ID with a WLAN service set identifier (SSID) interface will deliver packets to the defined path. The built-in QoS mechanism could allow the specific VLAN SSID to get more bandwidth and deliver video streaming content to the destination first.

EnGenius advanced **Cross-band VLAN pass-through** provides a powerful interface to deliver VLAN-tag packets between 2.4GHz frequency band and 5GHz frequency band without removing VLAN-tag. The integrated **Management VLAN and Cross-band VLAN pass-through** function on dual-band Access Points forces a command from a 2.4GHz capable client device and then deliver this command via 5GHz frequency to the other 5GHz capable Access Point throughout WDS BR mode. The ideal combination dramatically enhances the security on operating devices from remotely-side, reduces the maintenance cost, and labor fee significantly.

Restrain Wireless Traffic under a Pervasive Environment

To effective manage the usage of each client devices at a LAN topology, **Traffic Shaping** controls the bottle of bandwidth to offer the limited bandwidth for an individual **SSID** or **each client** per Access Point. This constraint offers the constant bandwidth to perform specific applications like VOIP and video streaming fluently and smoothly without air congestion on each client devices.

Comprehensive Network Protection

With ENH Access Points, your network is protected from attacks at multiple level through advanced wireless encryption standards such as Wi-Fi Protected Access (WPA2) which uses authentication database and IEEE 802.1X with Radius server. EnGenius also offers the advanced encryption standard to encrypt traffic between Access Points and client devices. To isolate the internal client devices and guest devices, client isolation can avoid each client device to see each other under the same WLAN. Once threats or events are detected, built-in **E-mail Alerts** systems will automatically deliver an e-mail notification for administrators to trigger immediate actions on these networks threats.

Technical Specifications Wireless outdoor long-range Access Point

Wireless Radio Specification

Access Point Type:

Outdoor, IP67, dual radios concurrent, 5GHz 802.11 ac 2x2 MIMO is backwards compatible with 802.11 a/n mode, 2.4GHz 802.11 n 2x2 MIMO is backwards compatible with 802.11 b/g.

SU-MIMO:

Two(2) spatial stream Single User (SU) MIMO for up to 400 Mbps wireless data rate with VHT40 bandwidth to a 2x2 wireless device under the 2.4GHz radio. Two(2) spatial stream Single User (SU) MIMO for up to 867 Mbps wireless data rate with VHT80 to a 2x2 wireless device under the 5GHz radio.

MU-MIMO

Two(2) spatial stream Multi User (MU) MIMO for up to 867 Mbps wireless data rate with VHT80 bandwidth to two(2) MU-MIMO capable client devices simultaneously under the 5GHz radio.

Frequency Radio

2.4GHz: 2400MHz~2835MHz

5GHz: 5150MHz~5250MHz, 5250MHz~5350MHz, 5470~5725MHz,

5725MHz~5850MHz

Support radios and channels will be varied on the configured regulatory domain.

Supported Radio Technology

802.11b: Direct-sequence spread-spectrum (DSSS)

802.11ac/a/g/n: Orthogonal frequency-division multiplexing (OFDM)

802.11n/ac: 2x2 MIMO with 2 streams

802.11ac supports very high throughput (VHT) — VHT 20/40/80 MHz

802.11n supports high throughput (HT) — HT 20/40 MHz

802.11n supports very high throughput under the 2.4GHz radio —VHT40 MHz (256-QAM)

802.11n/ac packet aggregation: AMPDU, ASPDU

Supported Modulation Type

802.11b: BPSK, QPSK, CCK

802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM

802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

Transmit Power (Maximum Value)

2.4GHz: 23dBm

5GHz: 23dBm

Maximum power is limited by regulatory domain

Tx Beamforming (TxBF)

Increasing signal reliability and transmitting distance.

Supported data rates (Mbps)

802.11b: 1, 2, 5.5, 11

802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54

802.11n: 6.5 to 300 (MCS0 to MCS15)

802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS=1 to 2)

Power

Maximum Power Consumption

Maximum 12.6W

Power Source

802.3af/at Compliance Source

Proprietary 48V-54V

Active Ethernet (Power Over Ethernet, PoE)

Antenna

SMA Type interfaces

2.4GHz: Two(2) detachable 5.0dBi SMA antennas

5GHz: Two(2) detachable 5.0dBi SMA antennas

Optional Solutions

Alternative solution to compatible with SA2216 and SA5219 sector Antennas.

Interfaces

Networking Interface

One (1) 10/100/1000 BASE-T RJ-45 Ethernet Ports

Link Aggregation achieves 2Gbps Throughput

LED Indicators

Display system and wireless transmission status

Reset Button on PoE Adapter

Convert Access Point to the Factory default or the Users Default through the reset button of the accompanied EPAS006GR

Mounting

Pole Mounting

Assemble a mounting bracket to fix this Access Point on a pole.

Wall Mounting

Mount this Access Point on a flat wall

Mechanical & Environment

Dimensions (Device only)

173.60x111.20x30.29mm(6.83" x 4.38" x 1.19")

Weight

829.5 g

Operating

Temperature: -20°C~60°C (-4°F~140°F)

Humidity: 0% ~ 90% typical

Storage

Temperature: -40°C~80°C (-40°F~176°F)

Humidity: 0% ~ 90% typical

Environment Protection Level

IP67

Surge Protection

1KV

ESD Protection

Contact: 4KV

Air: 8KV

Compliance Regulatory

FCC

Subpart15 B

Subpart C 15.247

Subpart E 15.407

CE

EN 300 328

EN 301 893

EN 301 489

EN 50385

EN 55032

EN 55024

EN 61000

CB

IEC 60950-1

IEC 60950-22

Technical Specifications Wireless outdoor long-range Access Point

Operating Mode

Access Point Mode (AP Mode)

Be an Access Point behaves like a central connection for station or clients that support IEEE 802.11 ac/a/b/g/n network.

Client Bridge Mode (CB Mode)

The Access Point essentially acts as a wireless adapter that connects to an access point to allow a system of wireless access to the network in the client bridge mode.

Mesh Modes

Mesh modes establish wireless connection to avoid interconnection on air. The architecture will be flexible for users to keep connection to Gateway side always.

WDS Modes (WDS AP, WDS BR, WDS Station)

WDS modes uses WDS technology to establish the wireless connection via filling MAC address in both Access Points to enlarge the wireless area.

Exquisite RF Management

ACK timeout (Distance Control)

Set the ACK timeout to assure the proper distance to deliver wireless signal properly

Site Survey

Scan signal level of an environment to provide parameters for performing Auto Transmit power and auto channel.

Auto Transmit Power

Automatically adjust power level

Auto Channel

Automatically assign a clearly channel to perform RF transmission under a pervasive environment.

Fast Roaming (802.11k)

Collect the parameters of neighborhood Access Points to find the optimal AP.

Fast Roaming (802.11v)

Cognize the signal strength of client devices under each to steer these client devices to one of Access Points if signal level is less than the default value of AP systems.

* This function will be available in September 2019.

Band Steering

Steer client devices to a proper frequency band for getting more bandwidth and speed under an Access Point.

RSSI Threshold

Kick client devices that the signal (RSSI) is above the set value from the AP for reducing the interference and optimize the connecting quality.

Optimize Performance

Quality of Service

Compliance with IEEE 802.11e standard
Prioritizes voice over data for both tagged and untagged traffic
Transmit video, voice and data at the same SSID

Power Save Mode

Support U-APSD

Pre-Authentication

Compliance with 802.11i & 11x

PMK Caching

Compliance with 802.11i
If wireless client devices has authenticated to an access point, it does not perform a full authentication exchange when client devices roaming between access points.

Fast Roaming (802.11r)

Use a Fast Transition key to handover between Access Points

Multicast to Unicast Conversion

Using the IGMP protocol, an access Point delivers high definition content to a large number of clients simultaneously.

Concurrent Users

100 client devices to connect to the Access Point simultaneously.

Easy to Management

Multiple SSIDs

BSSID support
Support 8 SSIDs on both 2.4GHz and 5GHz bands.

Guest Network

Isolate each client for avoiding an unnecessary touch, leaking sensitive data, and enhancing Internet security and reliability.

VLAN Tag

Independent VLAN setting can be enable or disable. Any packet that enters the Device without a VLAN tag will have a VLAN tag inserted with a PVID (Ethernet Port VID).

VLAN Pass-through

Broadcast VLAN-tag packets to find the destination and deliver packets over the defined path. The functions allows network topology scalable and flexible.

VLAN Per SSID

Integrate VLAN ID with a SSID interface to forward packets over the defined path. The functions isolate client devices to get more security.

Management VLAN

Feature is enabled with specified VLAN ID, the device will only allow management access with the same specified VLAN ID from remotely location by using protocols such as telnet, SSH, snmp, syslog etc.

Traffic Shaping

Controls the bottle of bandwidth to offer the limited bandwidth for an individual SSID or each client per Access Point.

MAC Address Filtering

Filter up to 32 sets MAC addresses per SSID

E-Mail Alert

Provides a network monitoring tool for administrators to stay informed the configuration change.

Save Configuration as Users Default

Save the customized configuration as default value for different customer demands.

Wi-Fi Scheduler

Perform a regular reboot on access point at assigned schedule
Perform it to enable or disable 2.4GHz or 5GHz interface from a period time.

SNMP & MIB & CLI

v1/v2c/v3 support
MIB I/II, Private MIB
CLI Supported

RADIUS Accounting

Help operators to offload 3G to Wi-Fi seamlessly

Wireless Clients list

Provide the list to display real status of wireless client devices on this Access Point.

Hotspot 2.0

This function will allow client devices to discover wireless Access Point under an environment and to automatically exchange data for getting authorization on accessing Internet when roaming between Access Points.

* This function will be available in July, 2019.

Comprehensive Protection

Wireless Encryption Standard

WPA2-PSK(Personal), WPA2-EAP(Enterprise)

Hide SSID in beacons

Client Isolation

Block/Isolate the communication between the associated clients under the same WLAN.

HTTPS

A secure communication protocol can be enabled to allow secure management web access over a computer network.

SSH Tunnel

A secure communication protocol can be enabled to allow secure remote shell access or command execution.

RF Performance Specification Wireless outdoor long-range Access Point

Channel	Data Rate	Transmit Power (Aggregated, dBm)	Receive Sensitivity (Aggregated, dBm)
802.11b 2.4 GHz	1 Mbps	23.0	-92.0
	2 Mbps	23.0	-88.0
	5.5 Mbps	23.0	-87.0
	11 Mbps	23.0	-84.0
802.11g 2.4 GHz	6 Mbps	23.0	-89.0
	54 Mbps	21.0	-72.0
802.11a 5 GHz	6 Mbps	23.0	-89.0
	54 Mbps	21.0	-71.0
802.11n HT20 2.4 GHz	MCS 0 / 8	23.0	-87.0
	MCS 7 / 15	20.0	-67.0
802.11n HT40 2.4 GHz	MCS 0 / 8	23.0	-84.0
	MCS 7 / 15	20.0	-66.0
802.11n HT20 5GHz	MCS 0 / 8	23.0	-89.0
	MCS 7 / 15	20.0	-68.0
802.11n HT40 5GHz	MCS 0 / 8	23.0	-86.0
	MCS 7 / 15	20.0	-66.0
802.11ac VHT20 5GHz	MCS0	23.0	-89.0
	MCS8	19.0	-63.0
802.11ac VHT40 5GHz	MCS0	23.0	-85.0
	MCS9	18.0	-60.0
802.11ac VHT80 5GHz	MCS0	23.0	-83.0
	MCS9	18.0	-56.0

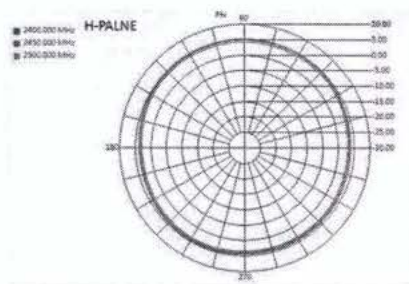
*Maximum RF performance of the hardware provided. Maximum transmit power is limited by local regulatory.

*The supported frequency bands are restricted by local regulatory requirements.

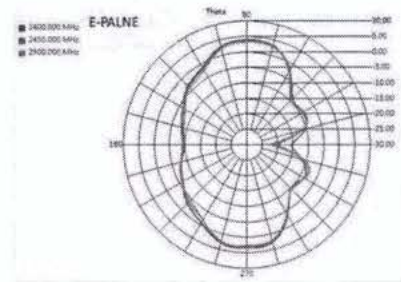
*Transmit power is configured in 1.0dBm increments.

Antennas Patterns Wireless outdoor long-range Access Point

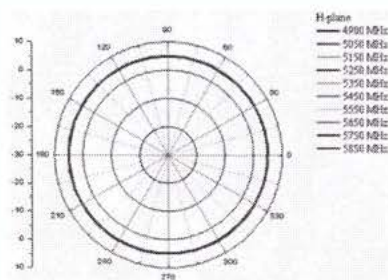
2.4GHz H-Plane



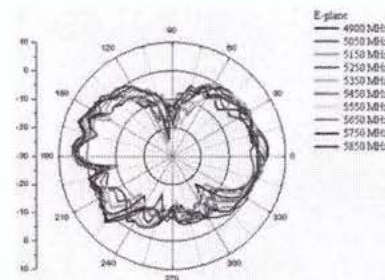
2.4GHz E-Plane



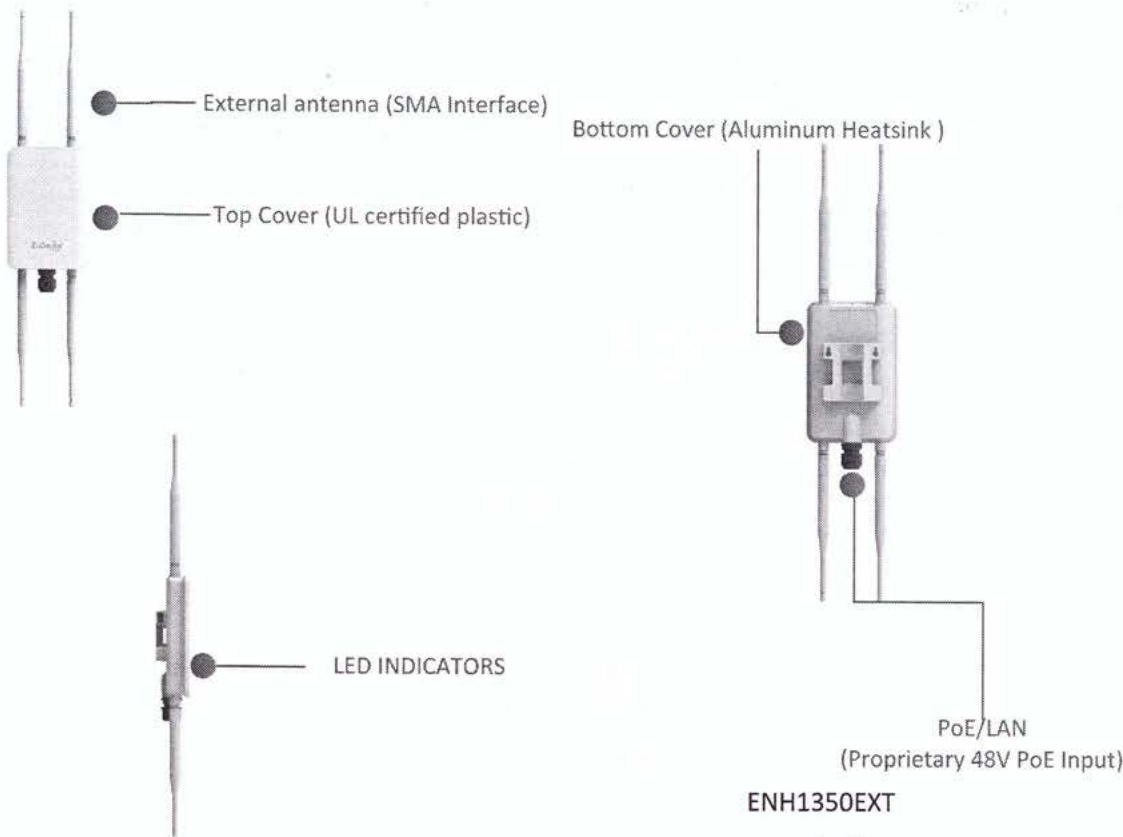
5GHz H-Plane



5GHz E-Plane



Physical Interfaces



Standards	802.11 ac/a/b/g/n
Frequency	2.4GHz+5GHz
Data Rates	400Mbps + 867Mbps
Antennas	2.4GHz: 5.0dBi; 5GHz: 5.0dBi
Physical Interface	1 x Gigabit LAN 4 x SMA Connector Interfaces
Radio Chains/Streams	2x2: 2

HQ , Taiwan
www.engeniusnetworks.com

Costa Mesa, California, USA | (+1) 714 432 8668
www.engeniustech.com

Dubai, UAE | (+971) 4 357 5599
www.engenius-me.com

Singapore | (+65) 6227 1088
www.engeniustech.com.sg

Miami, USA | (+1) 305 887 7378
pg.engeniustech.com es.engeniustech.com

Eindhoven, Netherlands | (+31) 40 8200 888
www.engeniusnetworks.eu

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