XetaNET

Versión 3.1.1.6506.31361

Versión 1

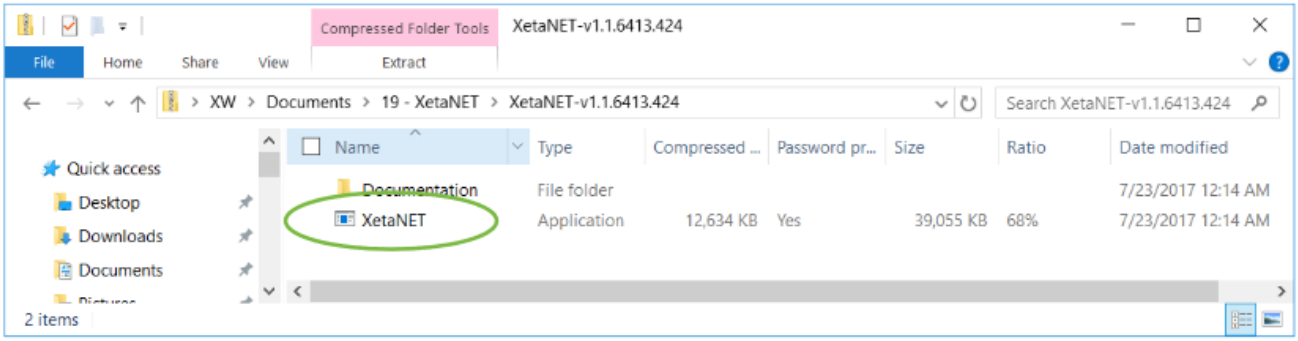
www.ampere.lat
solicitudes@ampere.lat

Guía rápida de inicio (INSTALLATION, DISCOVERY, STATISTICS & SUPPORT)

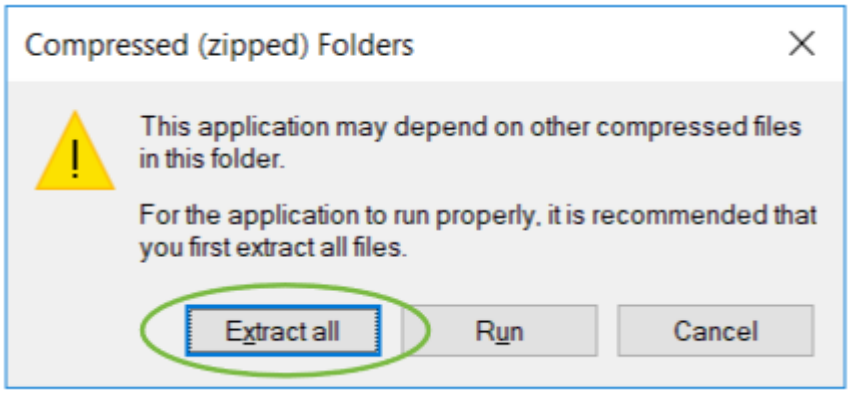
El software es capaz de funcionar sin la necesidad de ser instalado en el Sistema Operativo; este comienza desde el archivo ejecutable adjunto.

INSTALACIÓN

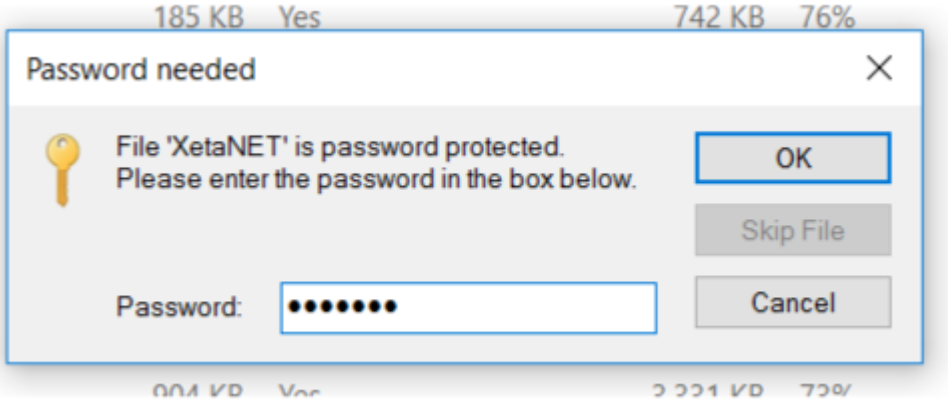
1.- Copiar la carpeta “XetaNET<ver>.zip” en un folder en tu escritorio o en el directorio donde prefieras.
2.- Abrir la carpeta en Zip y dar doble click sobre el archivo de la Aplicación XetNET:



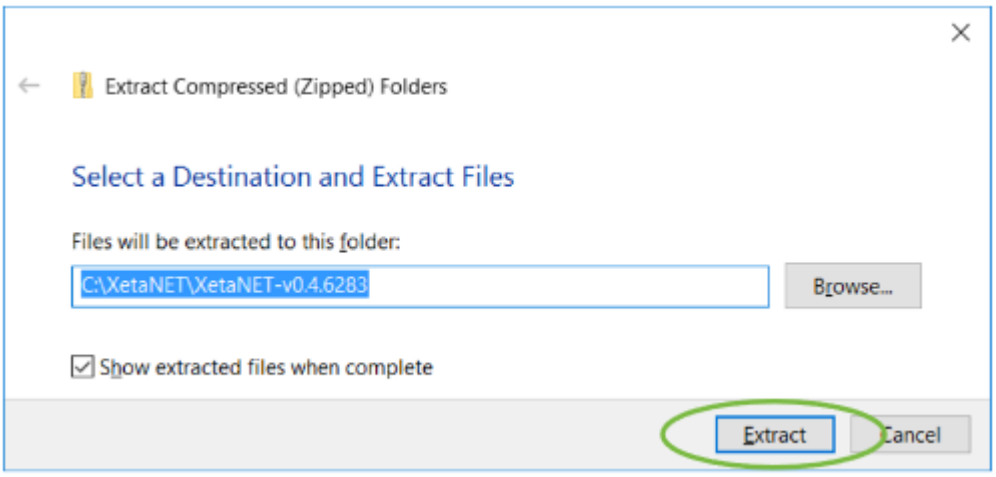
3.- Dar click en “Extract all” para comenzar el proceso de descompresión:



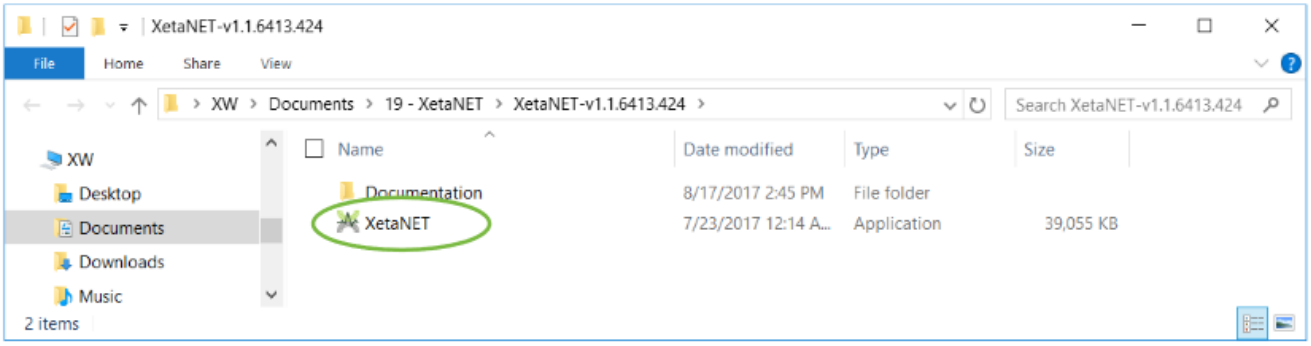
4.- Teclear el password “XetaNET”



5.- Seleccionar la carpeta de destino:

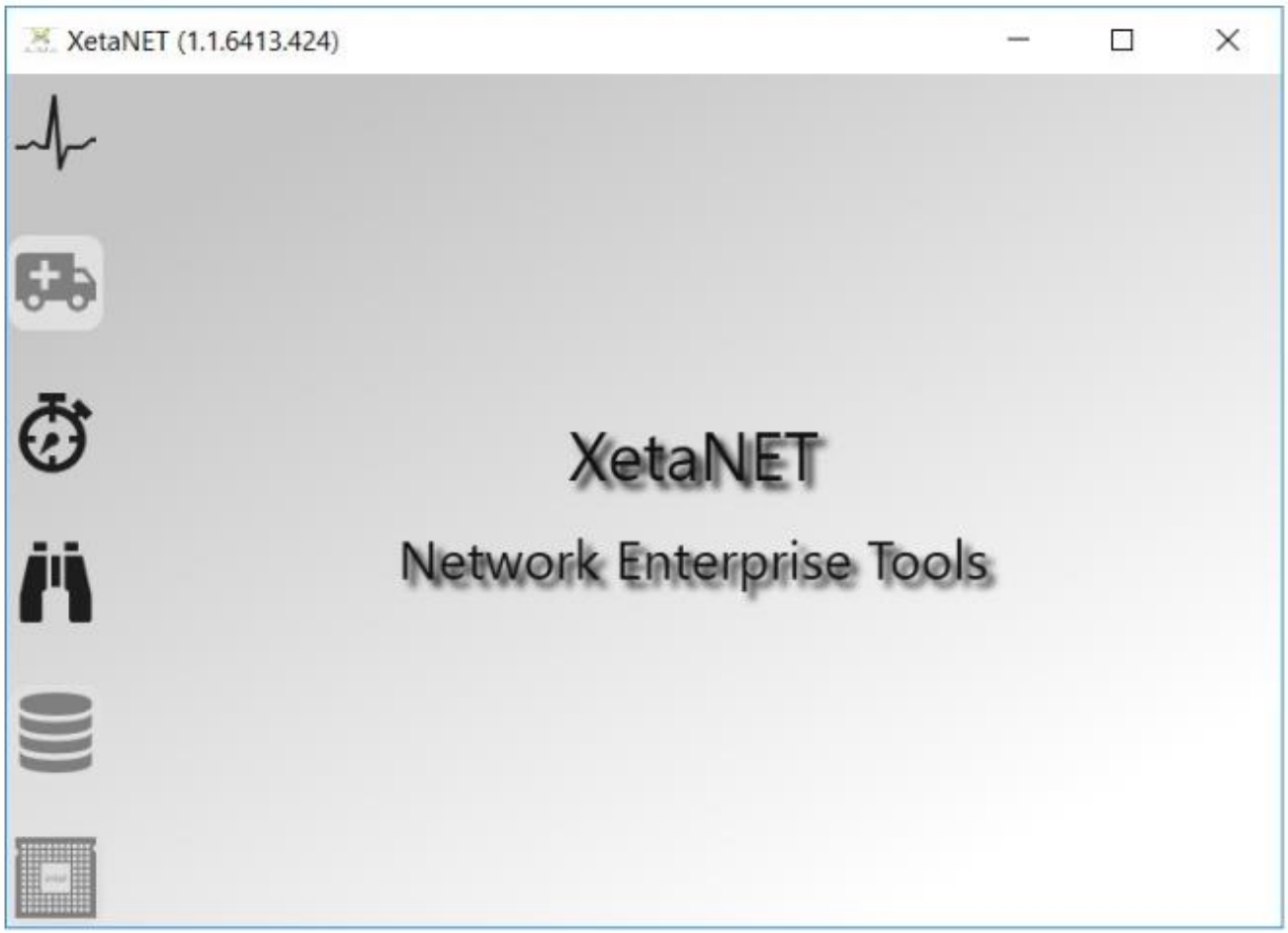


NOTA: El software se ejecuta directamente, por lo que no necesita ser instalado en la carpeta **"Program files"** o **"Archivos de programa".**
La carpeta de destino debe abrir y mostrar el archivo ejecutable de la aplicación **XetaNET** y la documentación del software.



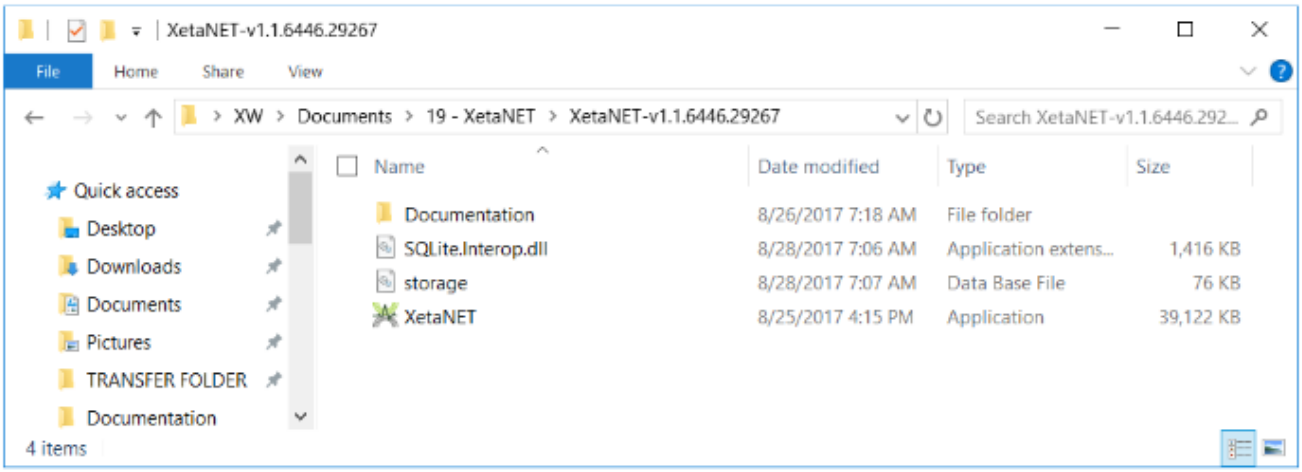
Si la aplicación es bloqueada por el Firewall de Windows, dar click en **"Allow Access"**

PARA ABRIR LA INTERFAZ



La carpeta **XetaNET** ahora contiene 2 archivos extra:

- **SQLite. Interop.dll**
- **Storage.db** (este archivo será requerido en caso de necesitar soporte técnico con XW)



COMPATIBILIDAD CON LAS VERSIONES DE FIRMWARE

XetaNET se ha desarrollado junto con la versión 2.13 / 1.43 uTasker / RF.
Existe compatibilidad general con las versiones anteriores, sin embargo, las características deben estar presentes en el código OS / RF para una compatibilidad de funciones completa con XetaNET.

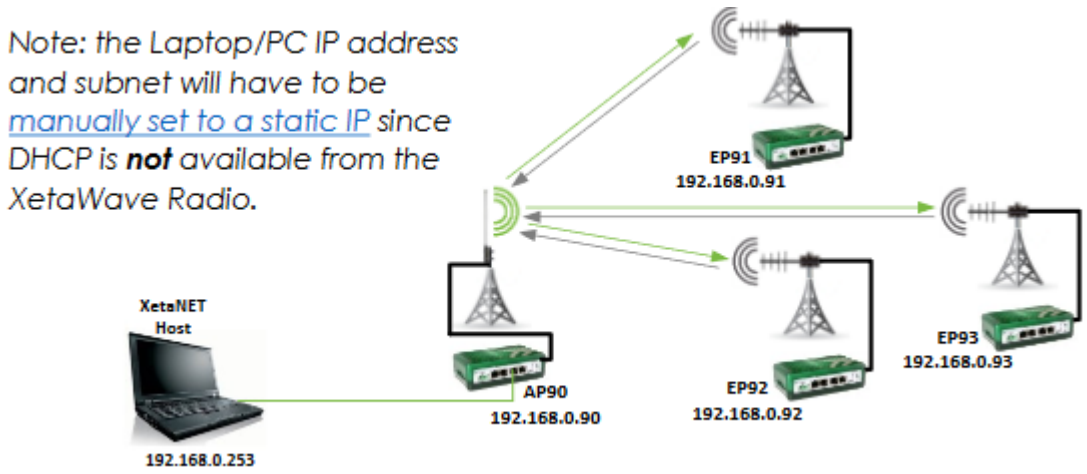
NOTA: TODAS las versiones anteriores a 2.12.14411 son conocidas por tener un error por el cual el módulo de RF puede desconectarse durante 60-120 segundos en el descubrimiento inicial del dispositivo.
Por lo tanto, se recomienda actualizar la red con el código 2.13 / 1.43 incluido para aprovechar al máximo XetaNET.

CONECTANDO EL XETANET A TU RED

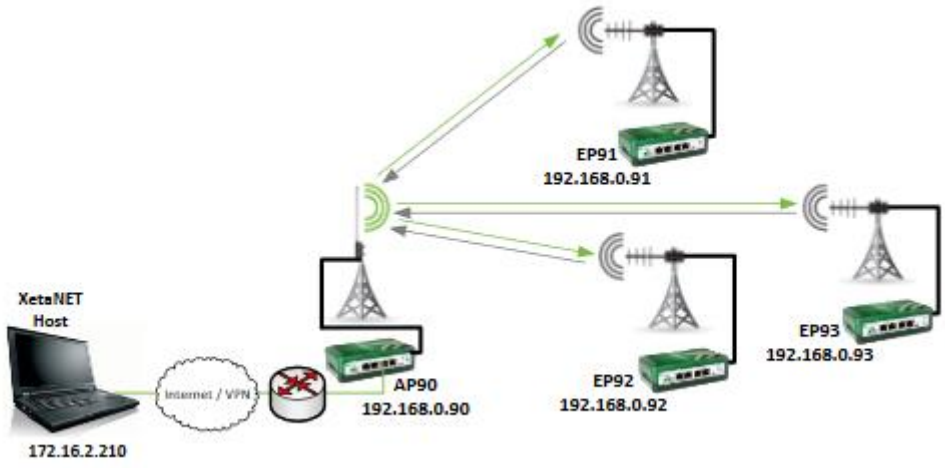
Existen 2 métodos para conectar el XetaNET a la red de radios:

- **LAN**; la laptop que aloja XetaNET está conectado directamente al punto de acceso principal o cualquier otro radio en la red.

El host tiene una dirección IP en el mismo rango / subred que las radios para garantizar la conectividad.
Ejemplo de dirección IP a continuación ...



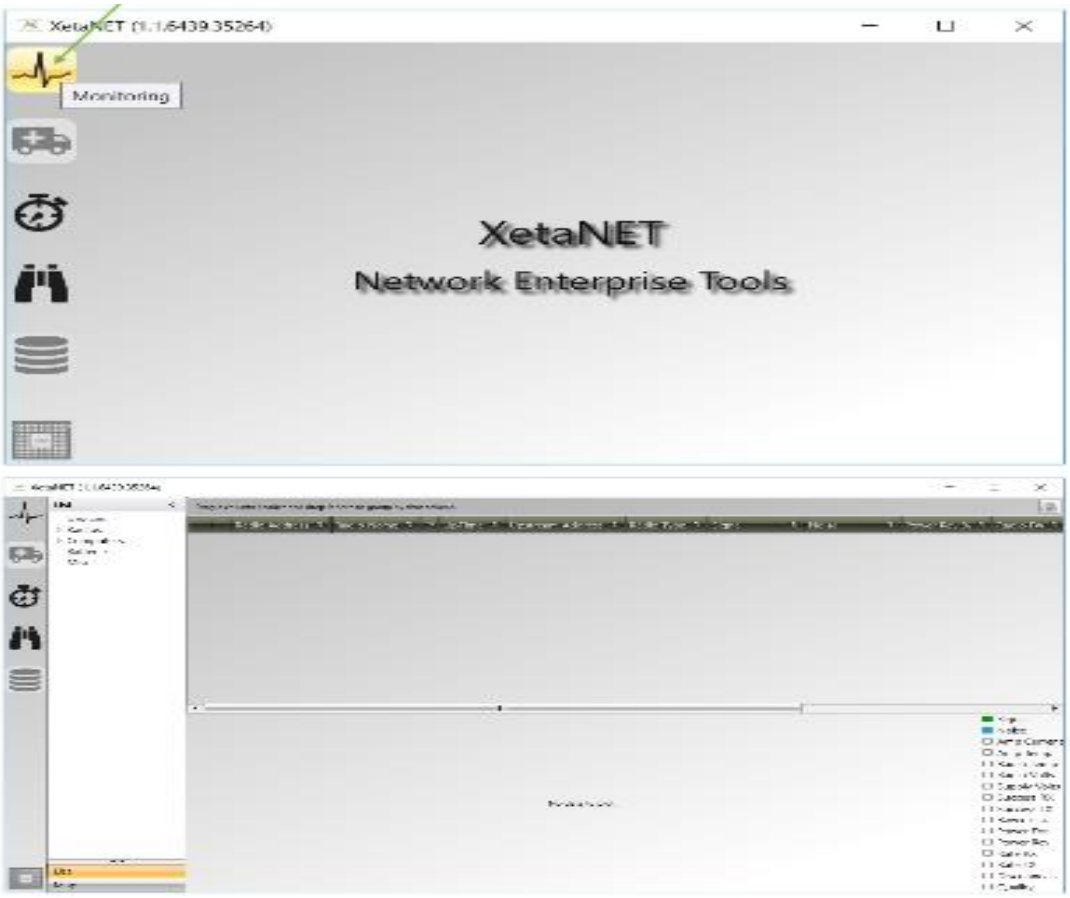
- **WAN**; Cuando la laptop o PC que contiene la aplicación de XetaNET se encuentra fuera de la red de radio y depende del acceso a través de Internet, generalmente a través de VPN. Siempre que use radios Xetawave en una red que se encuentra detrás de un router…



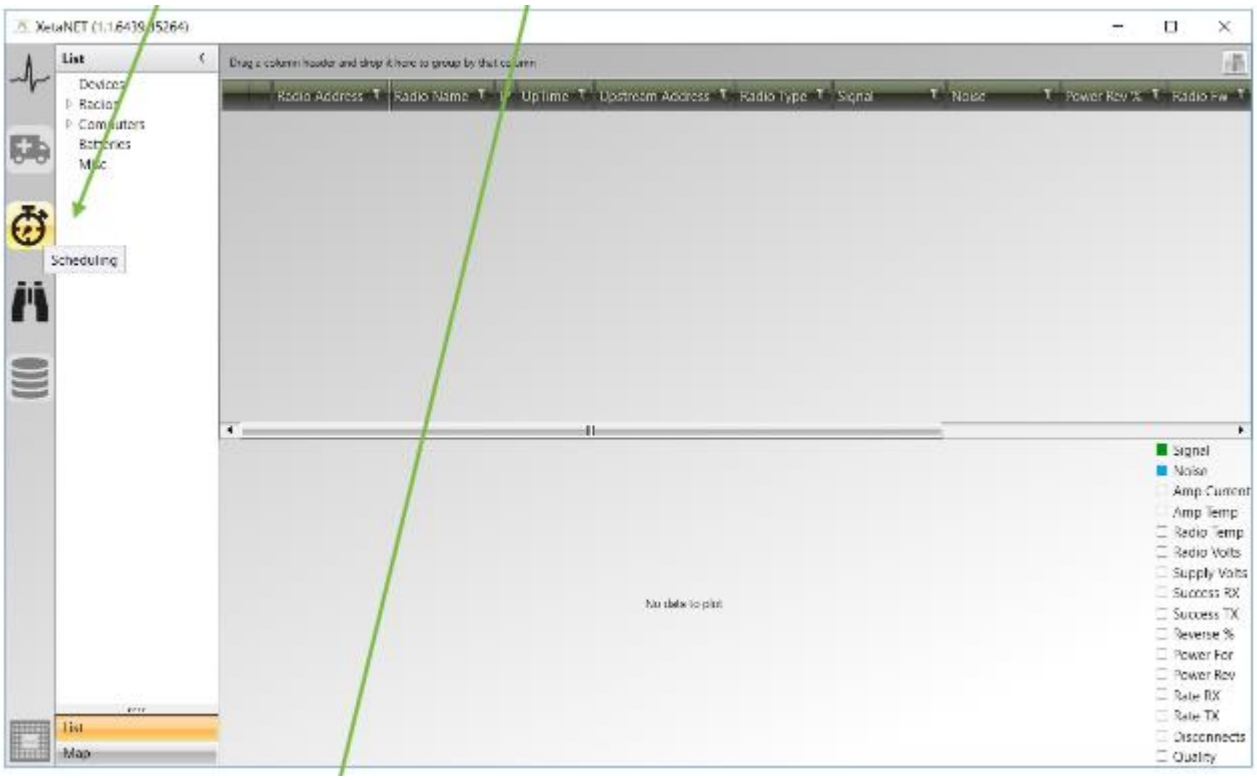
NOTA: Es de vital importancia establecer la puerta de enlace predeterminada en TODAS los radios a la del puerto del router donde está conectado el punto de acceso principal, de lo contrario, no responderán los radios más allá del router.

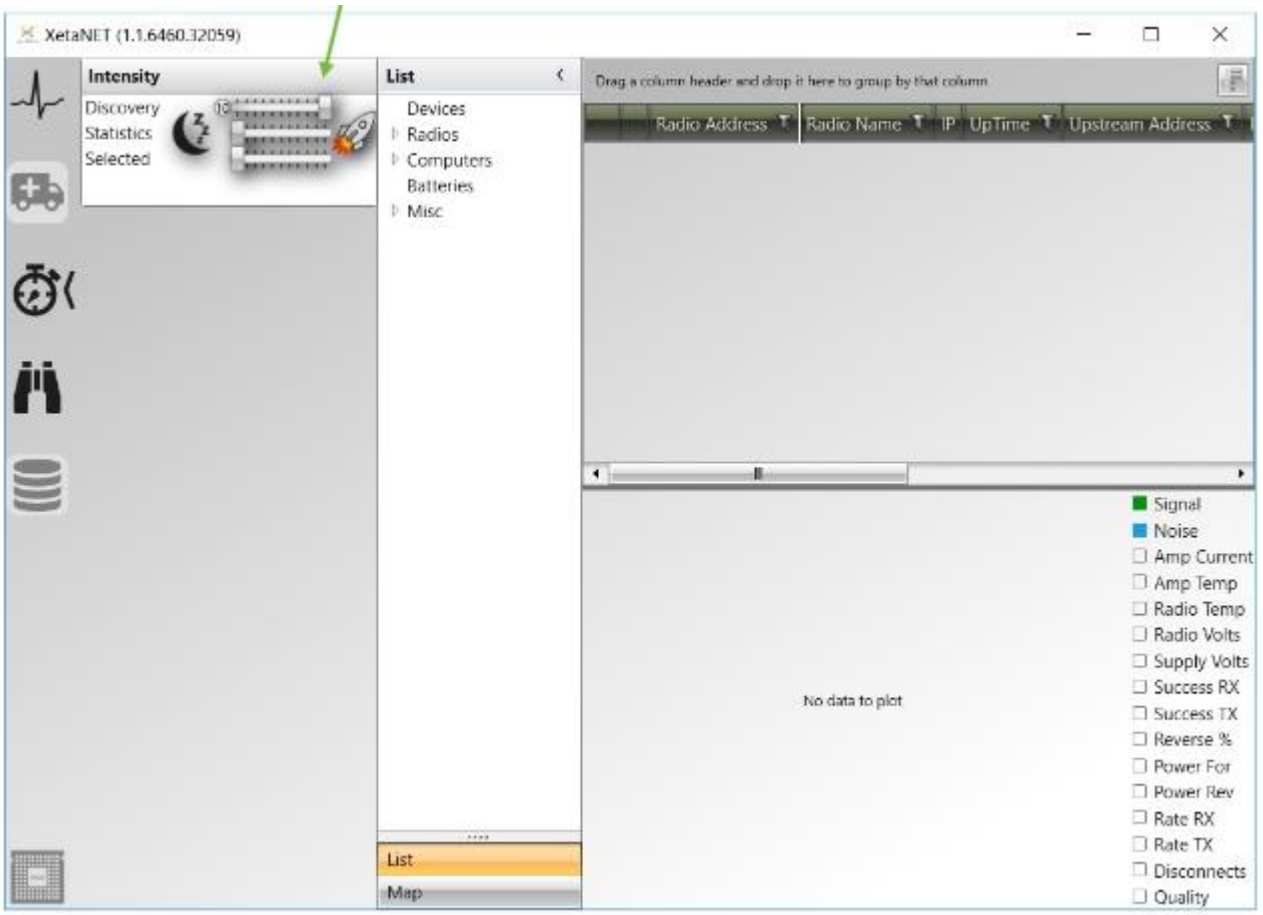
APLICACIÓN & AMBIENTE DE CONFIGURACIÓN

1.- Dar click en el icono de **“Monitoring”:**



2.- Dar click en **“Scheduling”** y la barra de **“Discovery”.**





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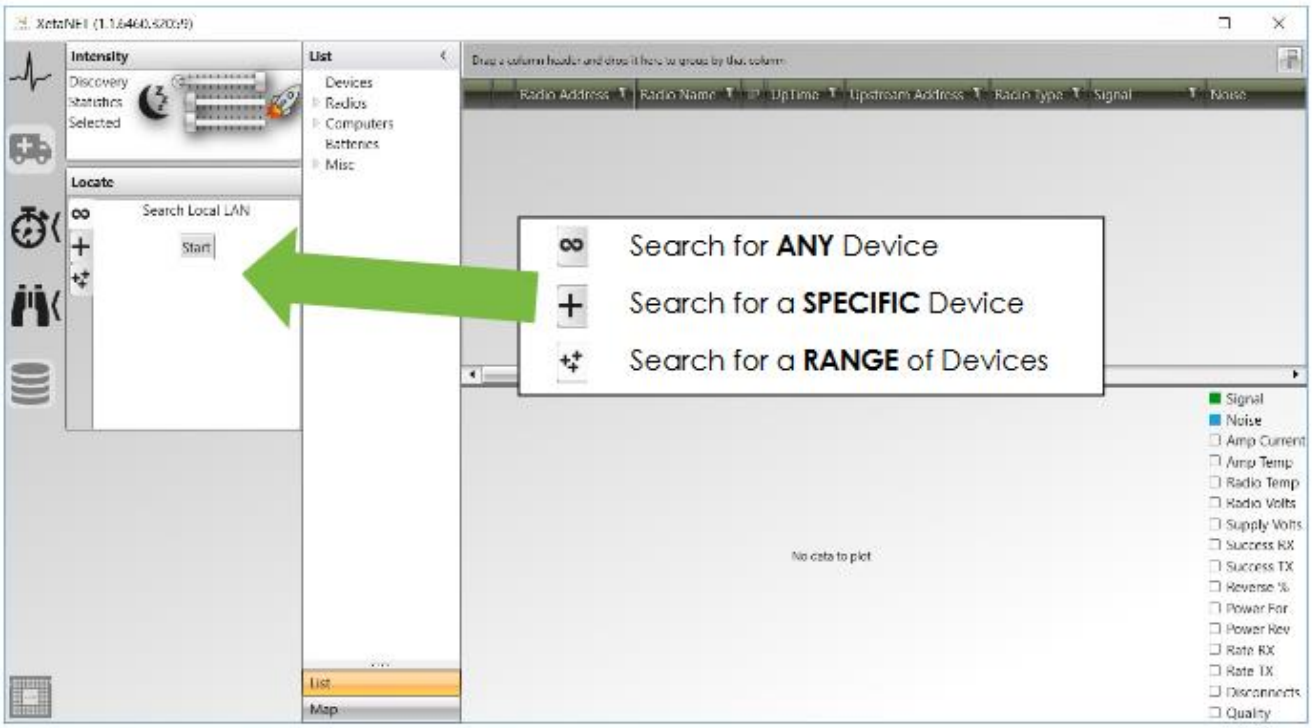
La función **"Discovery"** provee de 3 opciones para localizar los radios dentro de una red:



BUSCAR CUALQUIER DISPOSITIVO

1.- Dar click en **"Search"** para usar el protocolo Multicast Xetawave para localizar los radios:

- UDP used to locate Radios on the Network.
- 44 - 154 Byte messages

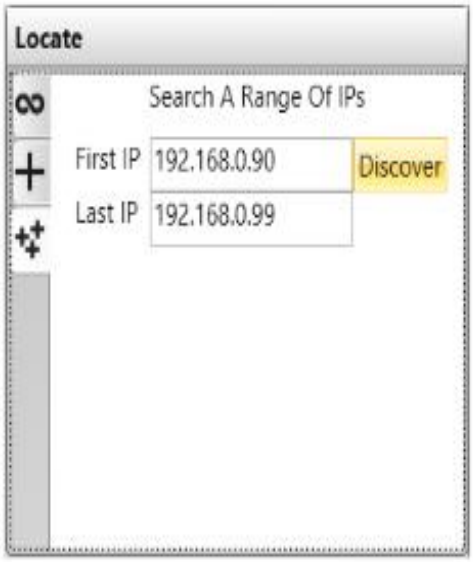
20	192.168.0.253	239.58.57.45	UDP	44
21	192.168.0.90	239.58.57.45	UDP	154
22	192.168.0.253	192.168.0.90	UDP	47
23	192.168.0.253	192.168.0.90	UDP	47
24	192.168.0.90	192.168.0.253	UDP	154
25	192.168.0.90	192.168.0.253	UDP	154

- XetaNET learns of other Radios from discovered Radios ARP tables.

NOTA: Esta es una herramienta de descubrimiento LAN solamente, a menos que el proxying IGMP esté habilitado en la configuración Router / VPN.

BUSCAR UN DISPOSITIVO ESPECÍFICO

1.- Teclear la dirección IP del radio y dar click en **"Search"**



- **ICMP, UDP, TCP, HTTP** used to monitor and poll Radios for information.
- 54 - 1448 Byte messages.
- XetaNET learns of other Radios from discovered Radios ARP tables.
- The **Discovery** intensity slider affects this operation. With the slider to the right, XetaNET will more quickly discover neighbors to the Radio IP address range entered in the search.

No.	Source	Destination	Protocol	Length	Info
862	192.168.0.92	192.168.0.253	TCP	1140	[TCP segment of a reassembled PDU]
863	192.168.0.253	192.168.0.92	TCP	54	55583 > http [ACK] Seq=72 Ack=14630 Win=63154 Len=0
864	192.168.0.92	192.168.0.253	HTTP	595	Continuation or non-HTTP traffic
865	192.168.0.95	192.168.0.253	ICMP	72	Echo (ping) reply id=0x0002, seq=12955/39730, ttl=128
866	192.168.0.253	192.168.0.92	TCP	54	55583 > http [ACK] Seq=72 Ack=15171 Win=64240 Len=0
867	192.168.0.92	192.168.0.253	HTTP	1251	HTTP/1.0 200 OK
868	192.168.0.92	192.168.0.253	TCP	60	http > 55583 [FIN, ACK] Seq=15171 Ack=72 Win=1482 Len=0
869	192.168.0.253	192.168.0.92	TCP	54	55583 > http [ACK] Seq=72 Ack=15172 Win=64240 Len=0
870	192.168.0.253	192.168.0.92	TCP	54	55583 > http [FIN, ACK] Seq=72 Ack=15172 Win=64240 Len=0
871	192.168.0.92	192.168.0.253	TCP	60	http > 55583 [ACK] Seq=15172 Ack=73 Win=1482 Len=0
872	Xetawave_01:23	Broadcast	ARP	60	Who has 192.168.0.250? Tell 192.168.0.90
873	192.168.0.253	192.168.0.92	TCP	54	55588 > http [ACK] Seq=93 Ack=1198 Win=63043 Len=0
874	192.168.0.92	192.168.0.253	TCP	60	http > 55588 [FIN, ACK] Seq=1198 Ack=93 Win=1482 Len=0
875	192.168.0.253	192.168.0.92	TCP	54	55588 > http [ACK] Seq=93 Ack=1199 Win=63043 Len=0
876	192.168.0.253	192.168.0.92	TCP	54	55588 > http [FIN, ACK] Seq=93 Ack=1199 Win=63043 Len=0
877	192.168.0.92	192.168.0.253	TCP	60	http > 55588 [ACK] Seq=1199 Ack=94 Win=1482 Len=0
878	192.168.0.253	192.168.0.92	TCP	66	55589 > http [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
879	192.168.0.92	192.168.0.253	TCP	60	http > 55589 [SYN, ACK] Seq=0 Ack=1 Win=1482 Len=0 MSS=1482
880	192.168.0.253	192.168.0.92	TCP	54	55589 > http [ACK] Seq=1 Ack=1 Win=64240 Len=0
881	192.168.0.253	192.168.0.92	HTTP	146	GET /settings.htm?ad=9002&ar=1&af=2 HTTP/1.1
882	192.168.0.92	192.168.0.253	HTTP	1250	HTTP/1.0 200 OK
883	192.168.0.253	192.168.0.92	TCP	54	55589 > http [ACK] Seq=93 Ack=1197 Win=63044 Len=0
884	192.168.0.253	192.168.0.96	ICMP	72	Echo (ping) request id=0x0002, seq=12957/40242, ttl=127
885	192.168.0.92	192.168.0.253	TCP	60	http > 55589 [FIN, ACK] Seq=1197 Ack=93 Win=1482 Len=0
886	192.168.0.253	192.168.0.92	TCP	54	55589 > http [ACK] Seq=93 Ack=1198 Win=63044 Len=0
887	192.168.0.253	192.168.0.92	TCP	54	55589 > http [FIN, ACK] Seq=93 Ack=1198 Win=63044 Len=0
888	192.168.0.253	192.168.0.92	TCP	66	55590 > http [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
889	192.168.0.92	192.168.0.253	TCP	60	http > 55589 [ACK] Seq=1198 Ack=94 Win=1482 Len=0
890	192.168.0.92	192.168.0.253	TCP	60	http > 55590 [SYN, ACK] Seq=0 Ack=1 Win=1482 Len=0 MSS=1482
891	192.168.0.253	192.168.0.92	TCP	54	55590 > http [ACK] Seq=1 Ack=1 Win=64240 Len=0
892	192.168.0.253	192.168.0.92	HTTP	146	GET /settings.htm?ad=9002&ar=2&af=2 HTTP/1.1
893	192.168.0.96	192.168.0.253	ICMP	72	Echo (ping) reply id=0x0002, seq=12957/40242, ttl=128
894	192.168.0.92	192.168.0.253	HTTP	1250	HTTP/1.0 200 OK
895	192.168.0.253	192.168.0.92	TCP	54	55590 > http [ACK] Seq=93 Ack=1197 Win=63044 Len=0
896	192.168.0.92	192.168.0.253	TCP	60	http > 55590 [FIN, ACK] Seq=1197 Ack=93 Win=1482 Len=0
897	192.168.0.253	192.168.0.92	TCP	54	55590 > http [ACK] Seq=93 Ack=1198 Win=63044 Len=0

BUSCAR UN RANGO DE RADIOS

- Teclear el rango deseado de direcciones IP y dar click en **"Discover".**

- **ICMP, UDP, TCP, HTTP** used to monitor and poll Radios for information.
- 54 - 1448 Byte messages.
- XetaNET learns of other Radios from discovered Radios ARP tables.
- The **Discovery** intensity slider affects this operation. With the slider to the right, XetaNET will more quickly discover neighbors to the Radio IP address range entered in the search.

No.	Source	Destination	Protocol	Length	Info
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863	192.168.0.253	192.168.0.92	TCP	54	55583 > http [ACK] Seq=72 Ack=14630 Win=63154 Len=0
864	192.168.0.92	192.168.0.253	HTTP	595	Continuation or non-HTTP traffic
865	192.168.0.95	192.168.0.253	ICMP	72	Echo (ping) reply id=0x0002, seq=12955/39730, ttl=128
866	192.168.0.253	192.168.0.92	TCP	54	55583 > http [ACK] Seq=72 Ack=15171 Win=64240 Len=0
867	192.168.0.92	192.168.0.253	HTTP	1251	HTTP/1.0 200 OK
868	192.168.0.92	192.168.0.253	TCP	60	http > 55583 [FIN, ACK] Seq=15171 Ack=72 Win=1482 Len=0
869	192.168.0.253	192.168.0.92	TCP	54	55583 > http [ACK] Seq=72 Ack=15172 Win=64240 Len=0
870	192.168.0.253	192.168.0.92	TCP	54	55583 > http [FIN, ACK] Seq=72 Ack=15172 Win=64240 Len=0
871	192.168.0.92	192.168.0.253	TCP	60	http > 55583 [ACK] Seq=15172 Ack=73 Win=1482 Len=0
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874	192.168.0.92	192.168.0.253	TCP	60	http > 55588 [FIN, ACK] Seq=1198 Ack=93 Win=1482 Len=0
875	192.168.0.253	192.168.0.92	TCP	54	55588 > http [ACK] Seq=93 Ack=1199 Win=63043 Len=0
876	192.168.0.253	192.168.0.92	TCP	54	55588 > http [FIN, ACK] Seq=93 Ack=1199 Win=63043 Len=0
877	192.168.0.92	192.168.0.253	TCP	60	http > 55588 [ACK] Seq=1199 Ack=94 Win=1482 Len=0
878	192.168.0.253	192.168.0.92	TCP	66	55589 > http [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
879	192.168.0.92	192.168.0.253	TCP	60	http > 55589 [SYN, ACK] Seq=0 Ack=1 Win=1482 Len=0 MSS=1482
880	192.168.0.253	192.168.0.92	TCP	54	55589 > http [ACK] Seq=1 Ack=1 Win=64240 Len=0
881	192.168.0.253	192.168.0.92	HTTP	146	GET /settings.htm?ad=9002&ar=1&af=2 HTTP/1.1
882	192.168.0.92	192.168.0.253	HTTP	1250	HTTP/1.0 200 OK
883	192.168.0.253	192.168.0.92	TCP	54	55589 > http [ACK] Seq=93 Ack=1197 Win=63044 Len=0
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885	192.168.0.92	192.168.0.253	TCP	60	http > 55589 [FIN, ACK] Seq=1197 Ack=93 Win=1482 Len=0
886	192.168.0.253	192.168.0.92	TCP	54	55589 > http [ACK] Seq=93 Ack=1198 Win=63044 Len=0
887	192.168.0.253	192.168.0.92	TCP	54	55589 > http [FIN, ACK] Seq=93 Ack=1198 Win=63044 Len=0
888	192.168.0.253	192.168.0.92	TCP	66	55590 > http [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
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890	192.168.0.92	192.168.0.253	TCP	60	http > 55590 [SYN, ACK] Seq=0 Ack=1 Win=1482 Len=0 MSS=1482
891	192.168.0.253	192.168.0.92	TCP	54	55590 > http [ACK] Seq=1 Ack=1 Win=64240 Len=0
892	192.168.0.253	192.168.0.92	HTTP	146	GET /settings.htm?ad=9002&ar=2&af=2 HTTP/1.1

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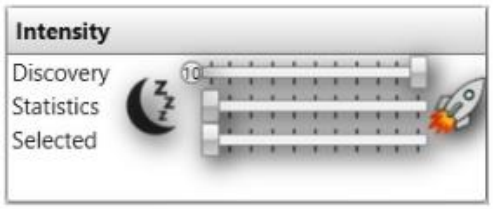
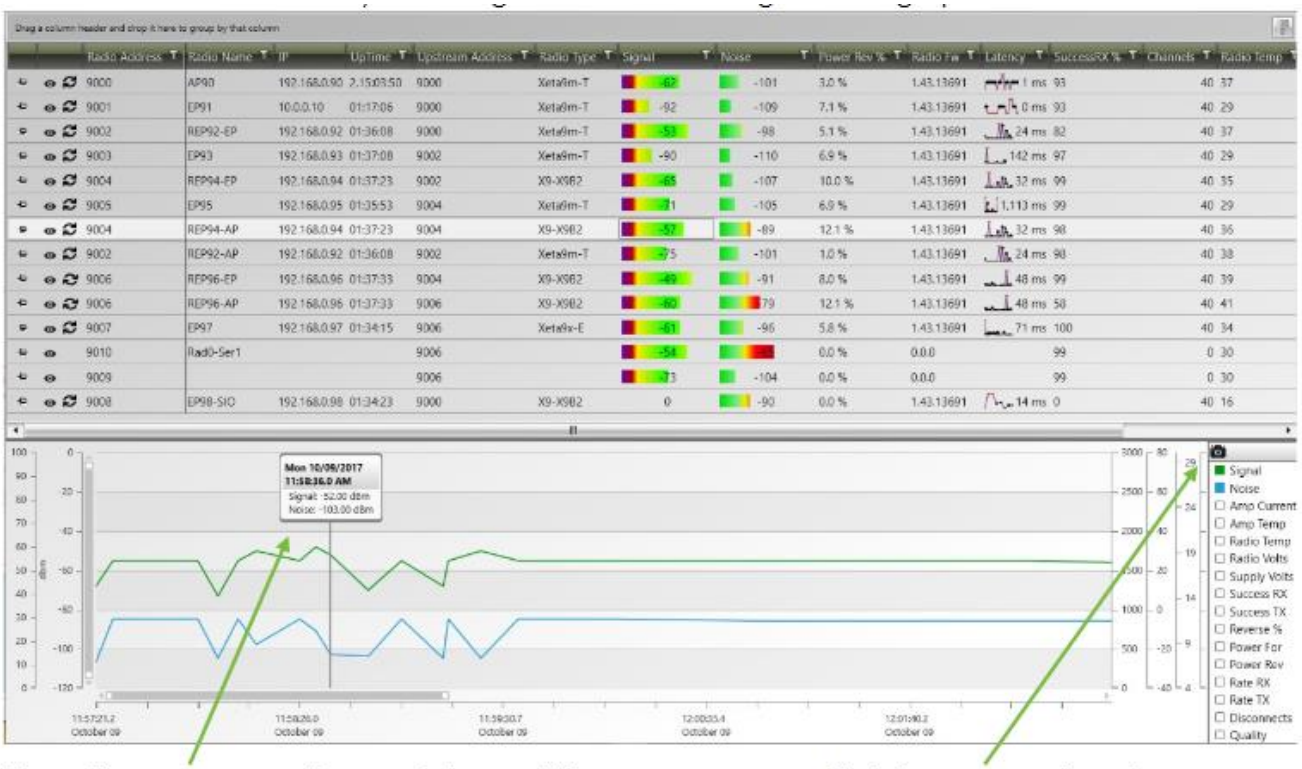
ESTADÍSTICAS

Una vez que **XetaNET** haya descubierto las radios en la red, mueva el control deslizante de intensidad de la estadística hacia la derecha para comenzar a monitorear los radios y obtener información:



- All Radios on the network that can establish a link can provide Statistics.
- Statistics will start to populate.
- Some Radios will take longer than others.
- May take longer to populate on marginal links.

Al seleccionar un radio en la lista, se genera un gráfico histórico basado en el tiempo. Los usuarios pueden elegir las estadísticas deseadas para el gráfico marcando las casillas a la derecha del gráfico:



Move the **mouse** over the graph to read the statistics recorded at that particular time.

Click the **camera** icon to save a **.png** of of the graph.

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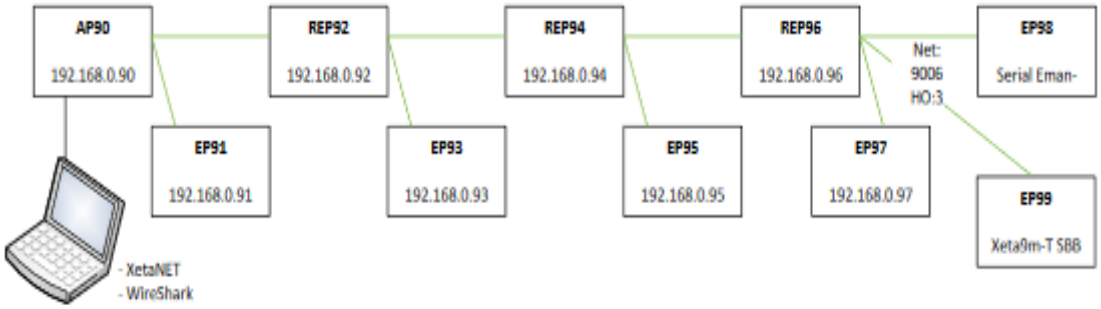
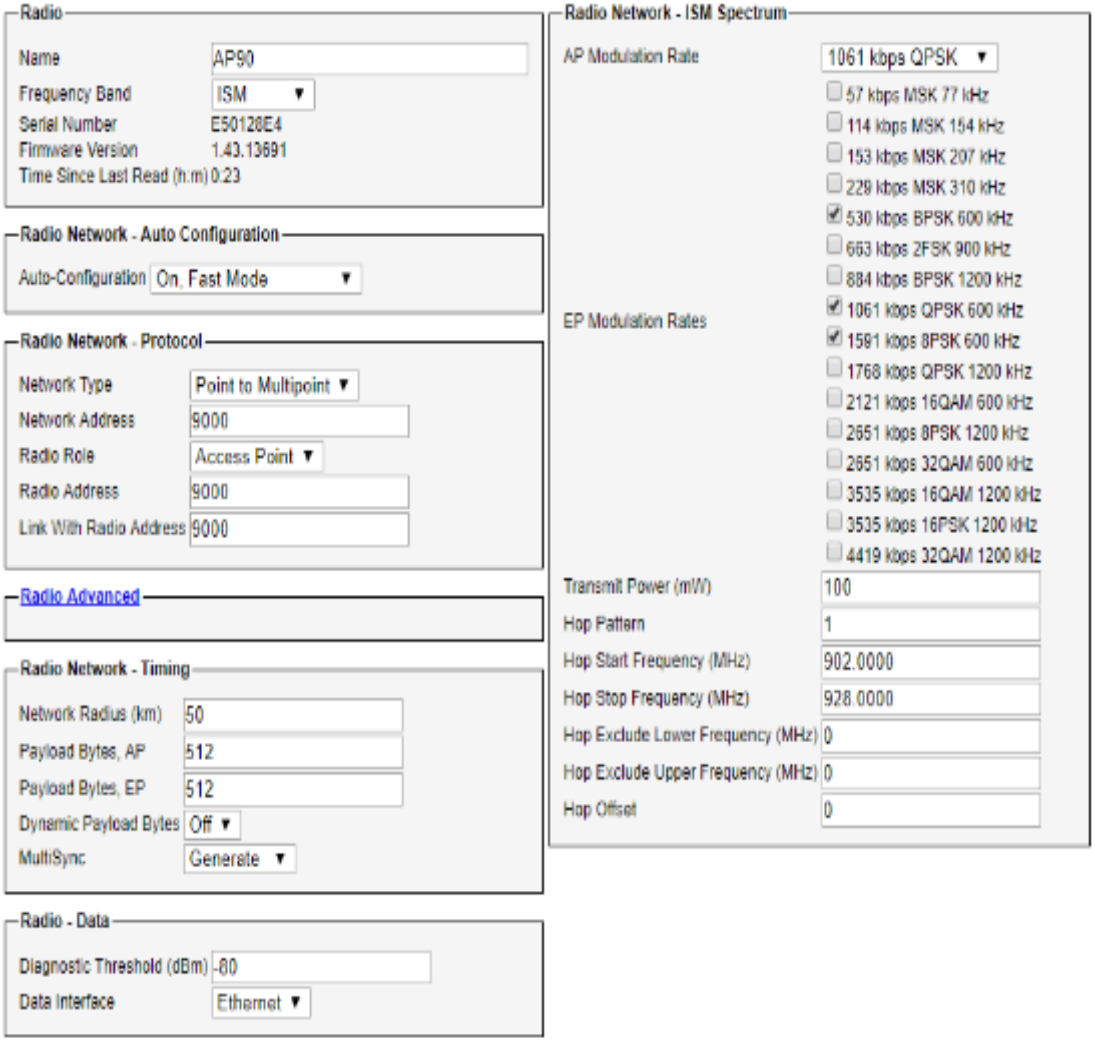
USO DE LA BARRAS DE DESLIZAMIENTO Y EL ANCHO DE BANDA.

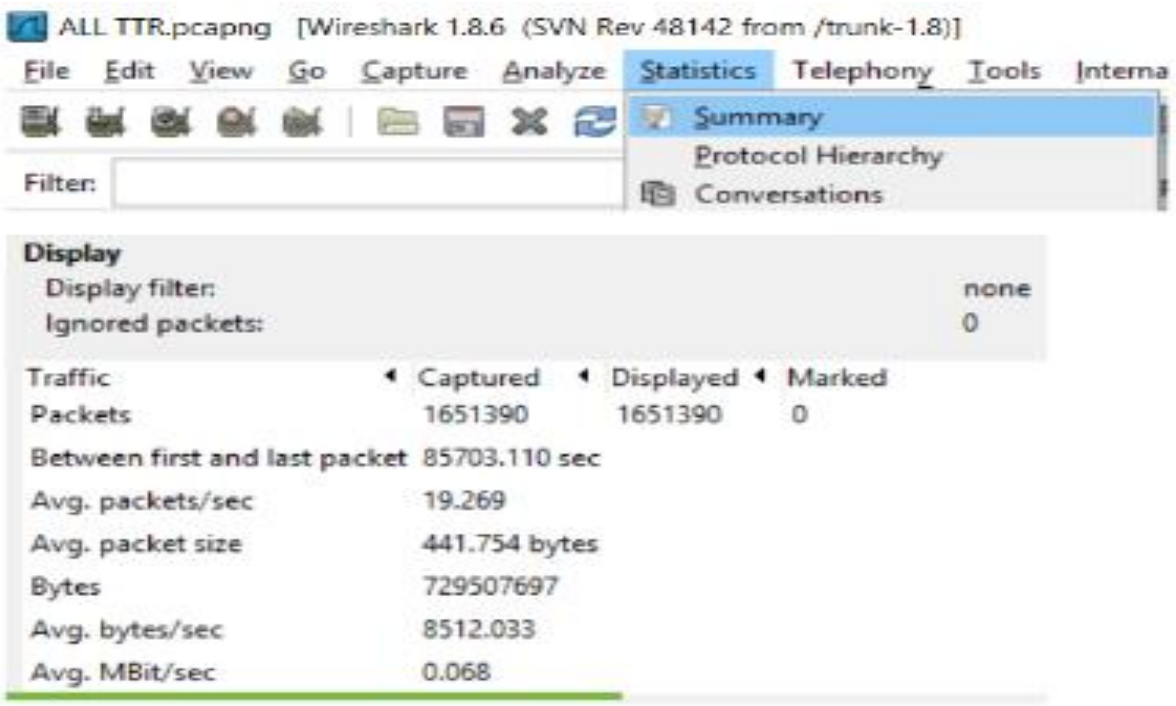
Los controles deslizantes de **"Intensity"** manipulan cómo **XetaNET** interactúa con la red y, por lo tanto, cuánto ancho de banda de Ethernet ocupan estas interacciones.
El siguiente sistema se configuró utilizando una configuración DTS600PSK y MMS que proporciona un rendimiento TCP descendente de 186 kbps y un rendimiento TCP ascendente de 328 kbps medido con **Fbench:**



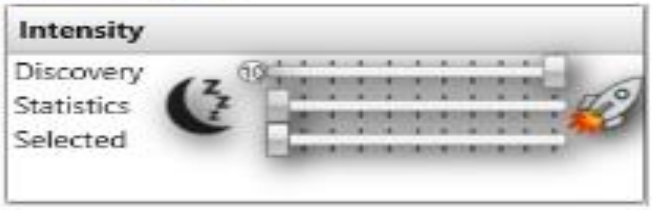


Con el fin de proporcionar una indicación de la posición del control deslizante frente al uso de ancho de banda, los siguientes resultados se midieron utilizando **Wireshark** con los controles deslizantes en su posición más intensa ->.

Wireshark es gratuito y se puede usar para verificar el ancho de banda al monitorear el tráfico en el adaptador Ethernet de la computadora portátil que está conectado al AP principal (AP90 en el caso del sistema de prueba anterior).
Haga clic en **"Statistics / Summary"** para ver los kbps promedio:



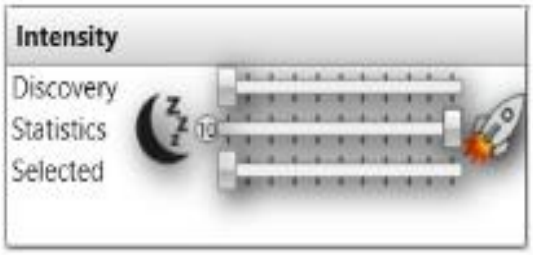
Discovery →



- 1 kbps average usage

Traffic	Captured	Displayed	Marked
Packets	27656	27656	0
Between first and last packet	13821.128 sec		
Avg. packets/sec	2.001		
Avg. packet size	90.039 bytes		
Bytes	2490125		
Avg. bytes/sec	180.168		
Avg. MBit/sec	0.001		

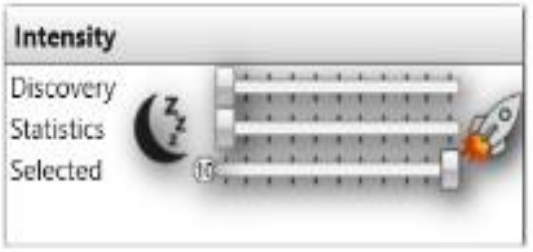
Statistics →



- 48 kbps average usage

Traffic	Captured	Displayed	Marked
Packets	60107	60107	0
Between first and last packet	4327.600 sec		
Avg. packets/sec	13.889		
Avg. packet size	429.826 bytes		
Bytes	25835566		
Avg. bytes/sec	5969.952		
Avg. MBit/sec	0.048		

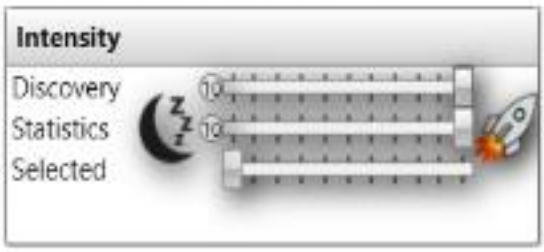
Selected →



- Single Radio selected
- 38 kbps average usage

Traffic	Captured	Displayed	Marked
Packets	45477	45477	0
Between first and last packet	4347.608 sec		
Avg. packets/sec	10.460		
Avg. packet size	458.277 bytes		
Bytes	20841069		
Avg. bytes/sec	4793.687		
Avg. MBit/sec	0.038		

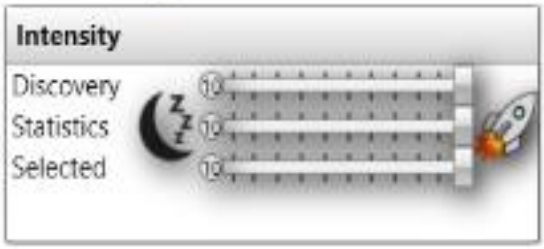
Discovery & Statistics →



- 37 kbps average usage

Traffic	Captured	Displayed	Marked
Packets	117637	117637	0
Between first and last packet	10002.624 sec		
Avg. packets/sec	11.761		
Avg. packet size	397.275 bytes		
Bytes	46734275		
Avg. bytes/sec	4672.202		
Avg. MBit/sec	0.037		

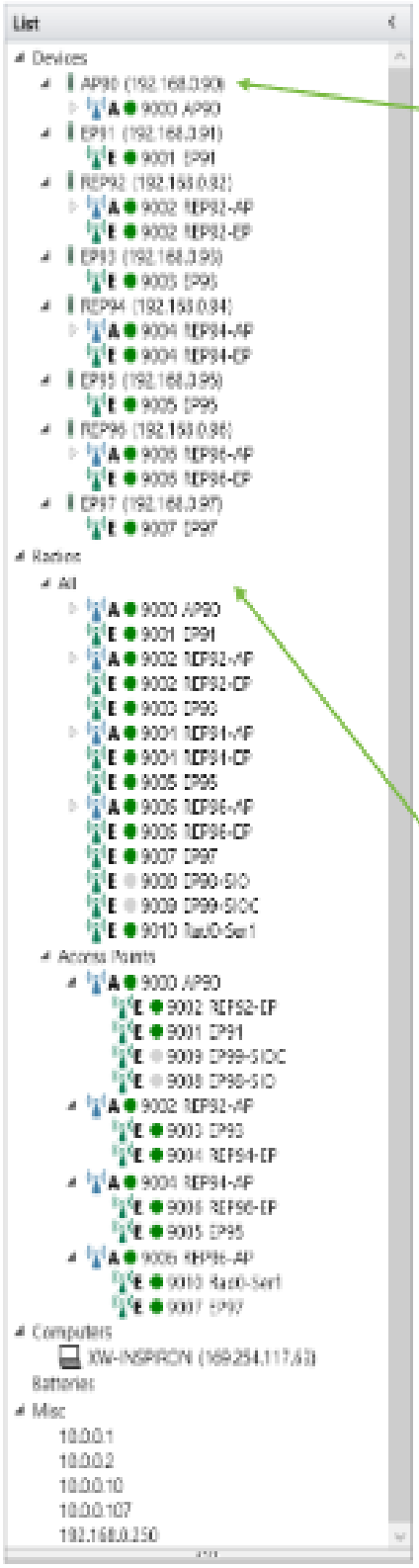
Discovery, Statistics & Selected →



- 68 kbps average usage

Traffic	Captured	Displayed	Marked
Packets	1651390	1651390	0
Between first and last packet	85703.110 sec		
Avg. packets/sec	19.269		
Avg. packet size	441.754 bytes		
Bytes	729507697		
Avg. bytes/sec	8512.033		
Avg. MBit/sec	0.068		

List View



The **List** view contains several trees that display devices as follows....

Devices presents all found devices in a tree based on IP Address and the "Device Name" on the main page of the device GUI...

Radio Modules are listed under each device.

Radio colors relate to a signal rating based on a Normalized Difference, where ND = (Signal + 80 * 0.8) – (Noise + 80 * 0.8)

- Blue : 5 >40%
- Green : 4 <=40%
- Yellow : 3 <=15%
- Orange : 2 <=12%
- Red : 1 <=0%
- Grey : 0 Missing or not polled yet

Radios breaks the Radio Modules down into two trees...

All – Lists ALL Radio Modules by Radio Address and "Radio Name" from Wireless Transmission Settings...

Note: Radios are sorted numerically by Radio Address.

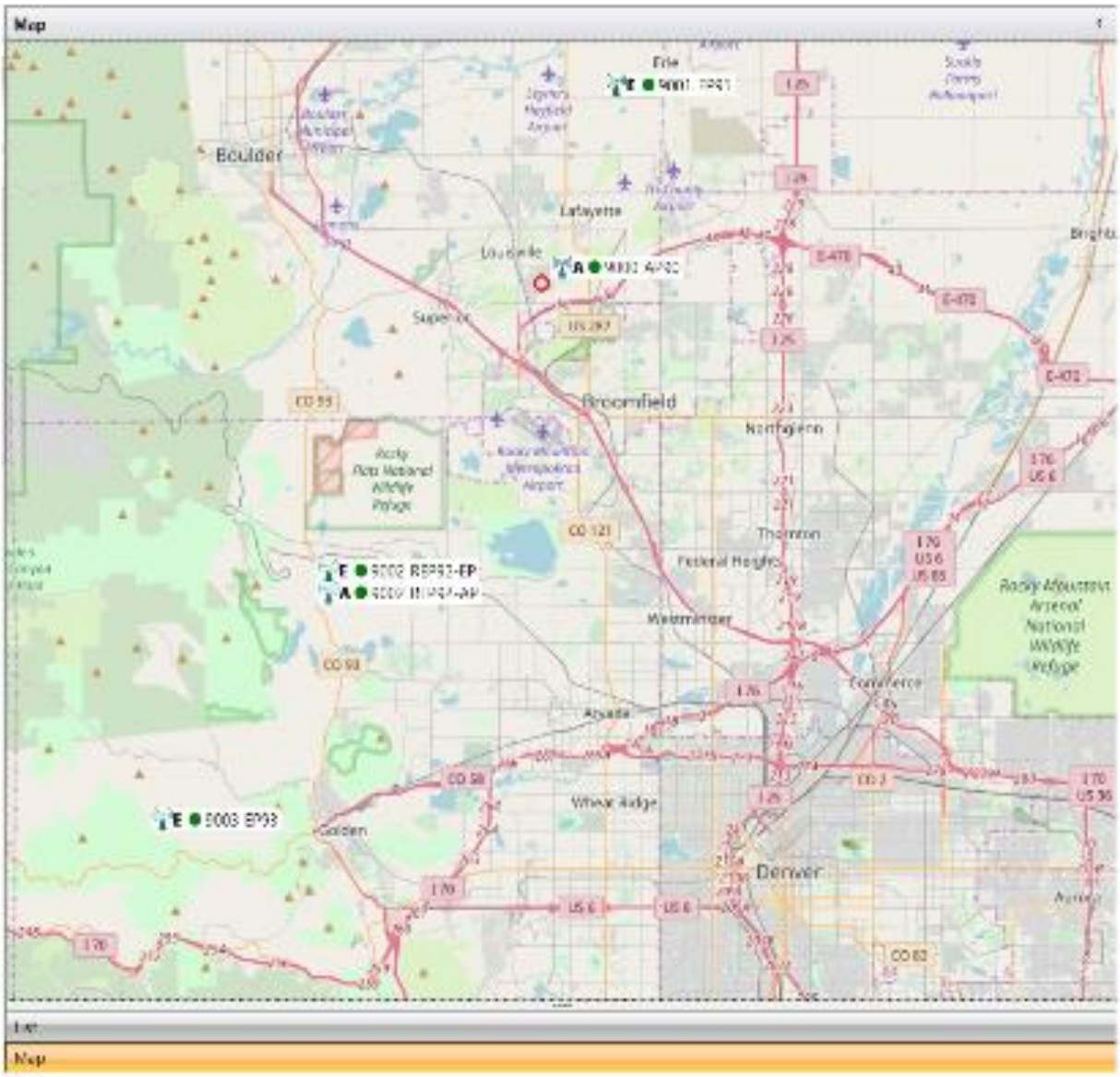
Access Points – Lists all Radio Modules with AP-EP association. EP's are listed under their respective AP. While not a true definition of network topology just yet, it does provide insight into Radio associations.

Computers lists any PC's on the network.

Batteries is for future monitoring of XetaPAK batteries.

Map View

Entering the coordinates of the Radio's location into the **SNMP** page of the GUI allows XetaNET to plot the Radios on a map.



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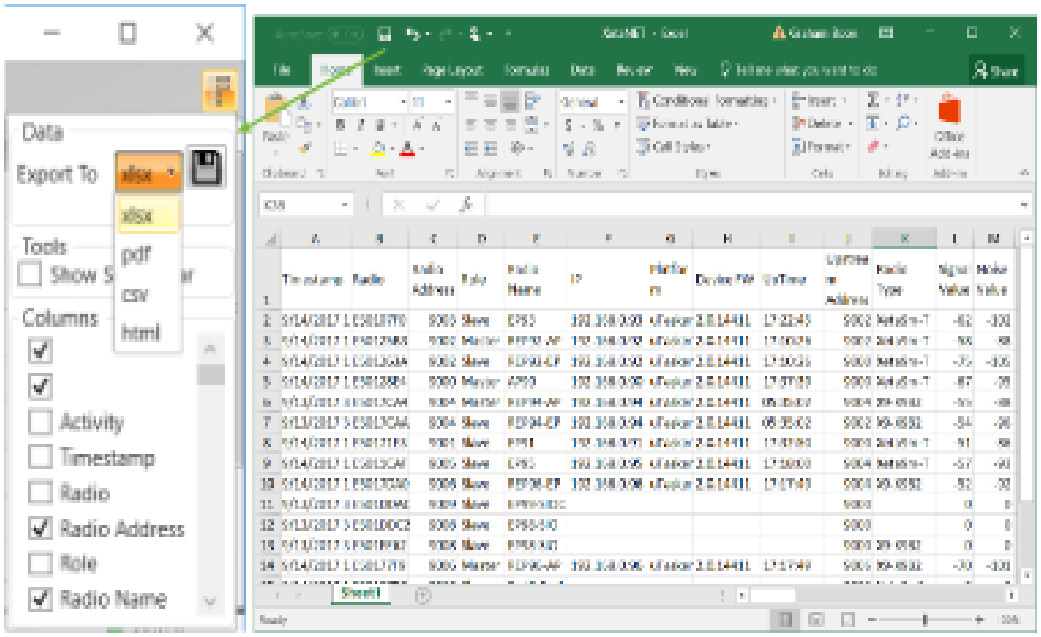
Technical Support

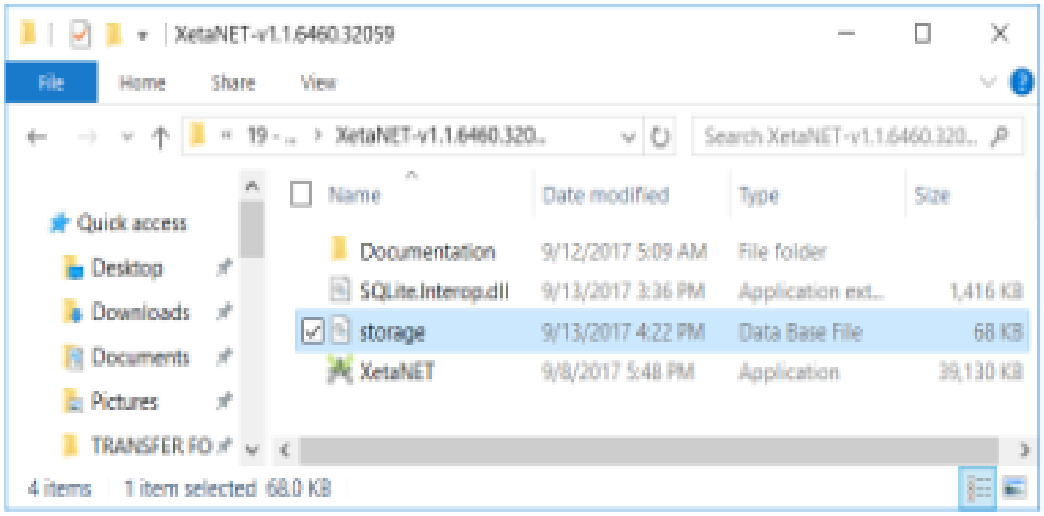
If you require technical support there are a few things that XetaNET can provide to assist...

- Use the **Advanced** button in the top right of the screen to export all data to Excel (.xlxs)



Note: you do not need to select any of the metrics in the Columns list; the check boxes are only there to select which columns are displayed on screen; ALL data will be exported.

- Navigate to the XetaNET folder and locate the **storage.db** file.



Email these files to support@xetawave.com when requested by XetaWave Customer Support.