

ANALISIS 1

¿Qué quiere decir 300 Mbps de canal en un Router? y características básicas.

300 Mbps se refiere a la velocidad del enlace interno de la WLAN, esto quiere decir que es la velocidad entre el Router del operador y la computadora o dispositivo inalámbrico; esta velocidad es diferente a la velocidad real del servicio de INTERNET que brinda el operador (Relación de 2 – UP a 1- DW). La velocidad de la INTERNET lo define principalmente el proveedor ISP (Proveedor de servicios de internet).

Velocidad de internet	¿Qué tan rápido es?
0–5 Mbps	Muy lento
5–40 Mbps	Lento a moderado
40–100 Mbps	Moderado a rápido
100–500 Mbps	Muy rápido

VELOCIDAD DE INTERNET	CONVERSIÓN A MB	TIEMPO PARA DESCARGAR UN ARCHIVO DE 100 MB
10 Mbps	1,25 MB/s	80 segundos
100 Mbps	12,5 MB/s	8 segundos
200 Mbps	25 MB/s	4 segundos
300 Mbps	37,5 MB/s	2,67 segundos

ANALISIS 2

Posible problema del AP rap2260g:

The screenshot shows a network management interface with a modal message box in the foreground. The message box contains the text: "Mensaje: Potencia insuficiente" (Message: Insufficient power) and an "OK" button. In the background, there is a table titled "Lista de alarmas" (Alarm List) with columns for Group, Origen de alarma (Alarm Source), Fecha de inicio (Start Date), Borrado a la(s) (Deleted at), Actualizado el (Updated on), and Acción (Action). The table contains one entry for "OFICINA301_SAL VAJE" with a device ID of "G1RP7P8002638" and a timestamp of "2024/04/03 12:59:21".

Características del AP:

What is the range of rap2260g?

It can operate concurrently at 2.4GHz and 5GHz, providing high-speed wireless access of 574Mbps at 2.4GHz, 1201Mbps at 5GHz and up to 1775Mbps per AP. Its coverage of over 20 meters makes it an ideal choice for many wireless scenarios, especially in offices, commercial industry, hotels, service scenarios, etc.

Compatible con el protocolo Wi-Fi 802.11a/b/g/n/ac/ax, RG-RAP2260(G) admite la tecnología de doble flujo MU-MIMO y ofrece antenas omnidireccionales integradas.

Wireless Protocol	802.11ax (Wi-Fi 6), 1775Mbps	Network Port	2 x 10/100/1000 Base-T
Antenna	Built-in Omni-directional	MIMO	2x2 @2.4 GHz, 2x2 @5 GHz
Max/Recommended Clients	512/100	Operating Temperature	0°C~40°C
Dimension	194mm × 194mm × 35mm	Weight	0.56kg (excluding mounting kits)
Power Supply	802.3at PoE, 12W/1.5A DC Adaptor	Power Consumption	<15.3W
Certifications	CE, ROHS	Warranty	3 Years

Protocol	802.11ax
Throughput	2977Mbps
Client Capacity	512
Recommended Client	110
2.5GE Support	<input checked="" type="checkbox"/>
Network Ports	1 x GE

Bandas de frecuencia activas del AP en el SSID llamado OS301:

SSID						
SSID	Banda de frecuencia	Método de cifrado	Oculto	Protocolo de autenticación	Funcionamiento	
OS301	2.4G 5G	WPA/WPA2-PSK	No	Autenticación deshabilitada	Edit Delete	

1 en total < 1 > 10 / página

Radiofrecuencia Guardar

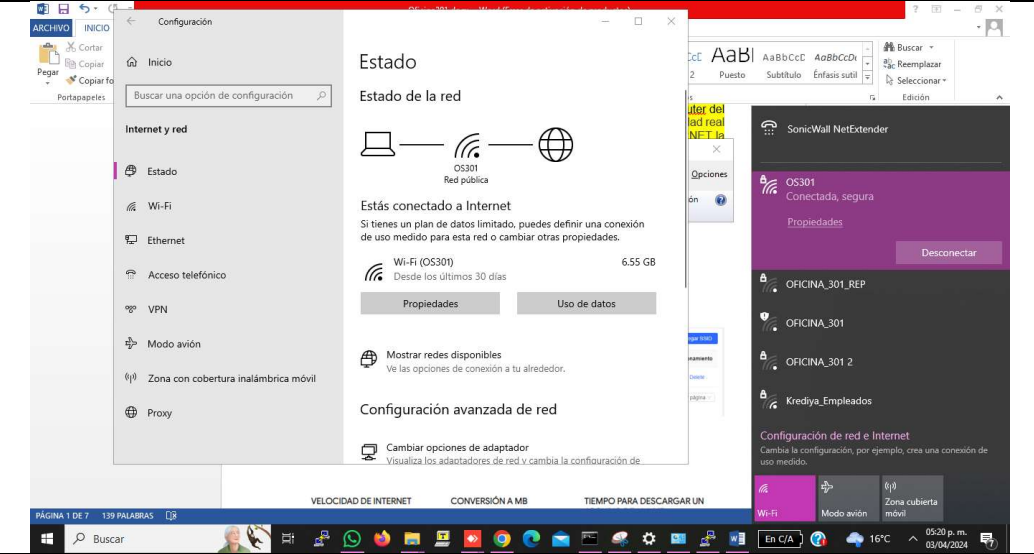
Pais o Región: Colombia(CO)

Radio: + Agregar radio

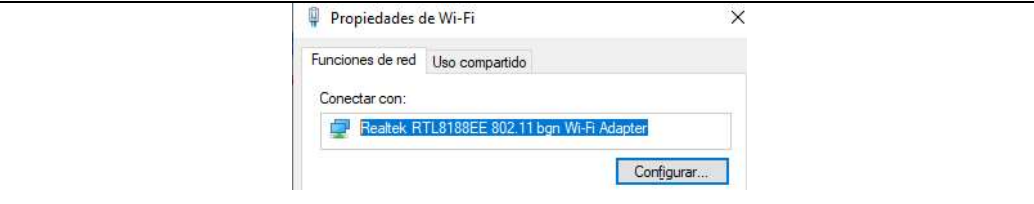
2.4GHz	5GHz
<p><input checked="" type="checkbox"/> Interruptor de Radio:</p> <p>Ancho de canal: Automático</p> <p><input checked="" type="checkbox"/> Limite de clientes:</p> <p><input checked="" type="checkbox"/> Habilitar DFS:</p> <p><input checked="" type="checkbox"/> Limite de desconexiones: Deshabilitado -65dBm Recomendado</p>	<p><input checked="" type="checkbox"/> Interruptor de Radio:</p> <p>Ancho de canal: Automático</p> <p><input checked="" type="checkbox"/> Limite de clientes:</p> <p><input checked="" type="checkbox"/> Habilitar DFS:</p> <p><input checked="" type="checkbox"/> Limite de desconexiones: Deshabilitado -65dBm Recomendado</p>

ANÁLISIS 3

Verificación de conexión de un PC al SSID OS301:



Tarjeta de red Wi-Fi del PC:



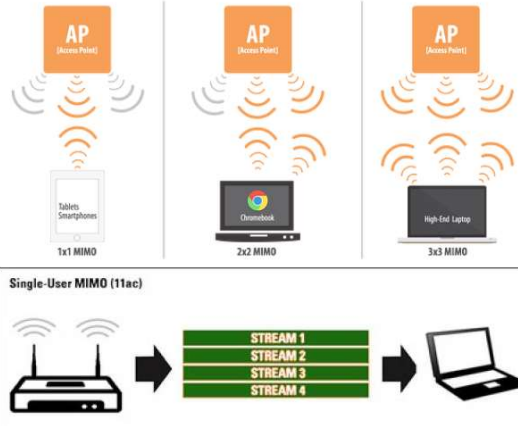
Detalles de la conexión WLAN del PC:



ANÁLISIS 4

Análisis del porque la velocidad del vínculo del PC, respecto al estándar Wi-Fi y la cantidad de Spatial Stream:

Conexión a 2.4 GHz / 20 MHz / Wi-Fi 4 – 802.11n / 1 SS = 72 Mbps



INCREASED DATA RATES

Wi-Fi 6 delivers significantly higher peak data rates than Wi-Fi 5 (802.11ac) in 5GHz and 802.11n in 2.4GHz. Note that support for 8SS was not widely adopted with Wi-Fi 5, but is expected to be more common with Wi-Fi 6.

CHANNEL BANDWIDTH	1 SS	2 SS	3 SS	4 SS	8 SS
20 MHz 802.11n (2.4 GHz)	72 Mbps	144 Mbps	217 Mbps	289 Mbps	N/A
20 MHz 802.11ac (5 GHz)	87 Mbps	173 Mbps	289 Mbps	347 Mbps	693 Mbps
20 MHz 802.11ax (2.4/5 GHz)	143 Mbps	287 Mbps	430 Mbps	574 Mbps	1147 Mbps
40 MHz 802.11n (2.4 GHz)	150 Mbps	300 Mbps	450 Mbps	600 Mbps	N/A
40 MHz 802.11ac (5 GHz)	200 Mbps	400 Mbps	600 Mbps	800 Mbps	1600 Mbps
40 MHz 802.11ax (2.4/5 GHz)	287 Mbps	574 Mbps	860 Mbps	1147 Mbps	2294 Mbps
80 MHz 802.11ac (5 GHz)	433 Mbps	867 Mbps	1300 Mbps	1733 Mbps	2167 Mbps
80 MHz 802.11ax (5 GHz)	600 Mbps	1201 Mbps	1801 Mbps	2402 Mbps	4804 Mbps
160 MHz 802.11ac (5 GHz)	867 Mbps	1733 Mbps	2340 Mbps	3467 Mbps	6933 Mbps
160 MHz 802.11ax (5 GHz)	1201 Mbps	2402 Mbps	3603 Mbps	4804 Mbps	9608 Mbps

* Data rate may vary depending on client availability.

Conexión a 5 GHz / 160 MHz / Wi-Fi 5 – 802.11 a/n/ac / 1 SS / -55 dBm = 866 Mbps

The screenshot shows the Ruijie Cloud management console. The main area displays details for a client named 'iPhone'. Key information includes:

- SSID: OS301
- RSSID: -55dBm
- IP: 192.168.0.13
- MAC: 16d3.88c7.d466
- Rate: 866Mbps
- Modelo de terminal: iPhone
- Sistema operativo y versión: ios
- Vendor: Apple
- Protocolo 802.11: K/V
- Velocidad máxima: 866Mbps
- Banda(s) admitida(s): 2.4G/5G
- Número de flujos de datos: Two spatial streams
- Protocolo de Wi-Fi: 11a/n/ac

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WLAN Standard	Band	VHT IE	HT IE	MCS	Available Bandwidth	Channel Type	Datarates
IEEE 802.11 b	2,4	-	-	-	20	CCK *1	1, 2, 5, 5 or 11
IEEE 802.11 g	2,4	-	-	-	20	OFDM *1	6, 12, 18, 24, 36, 48 or 54
IEEE 802.11 n	2,4	-	x	x	20 / 40	OFDM	
	5	-	x	x	20 / 40	OFDM	
IEEE 802.11 a*2	5	-	-	-	20	OFDM	
IEEE 802.11 ac	5	x	-	x	20 / 40 / 80 / 160	OFDM	
IEEE 802.11 ad*3	60			x	2GHz	*3	

www.CRnetPACKETS.com

*1 = In an IEEE 802.11b/g mixed environment CCK-OFDM channel is used

*2 = The IEEE 802.11h specification extends the IEEE 802.11a specification only with the techniques of DFS and TPC to be non reactive with Weather radars

*3 = The 802.11ad Directional multi-gigabit (DMG) PHY supports three distinct modulation methods:

1. Spread-spectrum, the Control PHY (MCS 0)
2. Single carrier, the Single Carrier PHY (MCS 1 to MCS 12) and the Low-Power Single Carrier PHY (MCS 25 to MCS 31)
3. OFDM, the OFDM PHY (MCS 13 to MCS 24)

Conexión a 5 GHz / 80 MHz / Wi-Fi 5 – 802.11 a/n/ac / 1 SS / -63 dBm = 433 Mbps

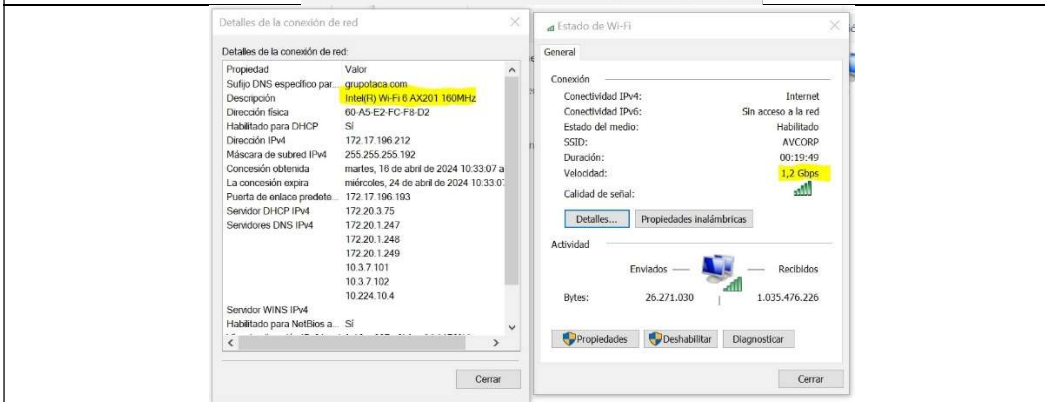
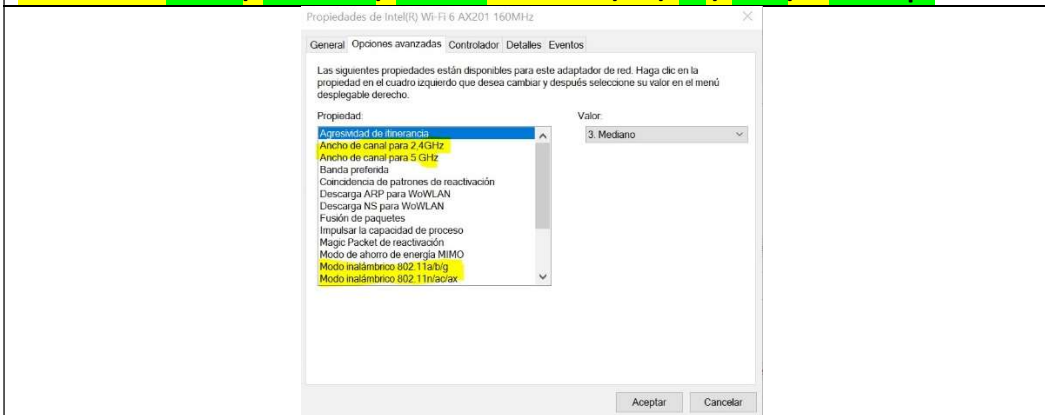
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Conexión a 5 GHz / 160 MHz / Wi-Fi 6 – 802.11 n/ac / ax / 1 SS / = 1.2 Gbps



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Analisis 5

Análisis del porque de las velocidad de DW / UP

DWlink: Aproximado al 50% del total máximo de transmisión del UPlink.

UPlink: Aproximado al 100% del total máximo de transmisión menos el 30% aproximado por perdidas de espacio libre, Diente de Sierra (Sawtooth Pattern), Shadowing, absorción y dispersión del espectro radio eléctrico transmitido (Fotones).

1. Perdidas de espacio libre (Free Space Loss):

Free space loss refers to the loss of signal strength as a radio wave travels through free space. It is influenced by the frequency of the signal and the distance it travels.

The formula to calculate free space loss (in decibels) is:

$$\begin{aligned} \text{FSPL(dB)} &= 10 \log_{10} \left(\left(\frac{4\pi df}{c} \right)^2 \right) \\ &= 20 \log_{10} \left(\frac{4\pi df}{c} \right) \\ &= 20 \log_{10}(d) + 20 \log_{10}(f) + 20 \log_{10} \left(\frac{4\pi}{c} \right) \\ &= 20 \log_{10}(d) + 20 \log_{10}(f) - 147.55, \end{aligned}$$

where:

(**d**) is the distance between the transmitter and receiver in kilometers.

(**f**) is the frequency of the signal in megahertz.

2. Diente de Sierra (Sawtooth Pattern):

In signal processing and image processing, a sawtooth pattern refers to a waveform that rises and falls in a jagged manner, resembling the teeth of a saw.

This pattern can be observed in various phenomena, including the modulation of signals, digital-to-analog conversion, and certain types of interference or noise.

3. Shadowing:

Shadowing, also known as signal attenuation or signal blockage, occurs when a signal is obstructed by physical objects such as buildings, mountains, or trees.

The obstruction causes the signal to weaken or even be completely blocked, leading to reduced signal strength or loss of signal.

Shadowing is a common issue in wireless communication systems and can be mitigated using techniques like antenna diversity, signal repeaters, and site planning.

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DOWNLOAD Mbps: 36.42 UPLOAD Mbps: 51.42

Ping ms: 6 80 392

GO

Connections: Multi

EdgeUno
Bogotá
Change Server

ETB
186.31.118.160

HOW DOES THE CUSTOMER SERVICE OF ETB COMPARE WITH YOUR EXPECTATIONS?

1 2 3 4 5

Much worse As expected Much better

Aplicaciones móviles para Speedtest

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