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DIGISOL Wi-Fi6 11ax 1800Mbps Ceiling Wireless AP

DG-WM820AX

Key Features:-

- Upto 1800Mbps aggregate speed
- Support WiFi 6 802.11ax Standard
- 2 x Gigabit LAN Port
- Multimode AP / Repeater / Gateway
- Target Wake Up time (TWT)
- Support FIT / FAT Mode
- MU-MIMO and OFDMA



Short Specifications:-

DG-WM820AX is an 11axWi-Fi standard MTK Chipset high power industrial Ceiling Wireless Access Point support MU-MIMO, Wave2.0, OFDMA and Seamless Roaming. Combined 1800Mbps Wi-Fi speed over 2 radios: 2.4GHz (600Mbps 11ax 2*2) + 5GHz (1200Mbps 2*2), equipped Gigabit WAN & LAN ports, support MU-MIMO and DL/UL-OFDMA modulation, faster Ethernet data rate and more users, then multiple users can upload or download multiple packets at same time, narrower subcarrier spacing and longer symbol time, improved the stability and data processing efficiency, publicly to be used in high density access environment such as university campus, concert venue, gymnasium, etc.

Main Features:

Wireless data rate up to 1.8Gbps. 802.11ax support 1024QAM, long OFDM symbol, 80M bandwidth and 11ax 2x2 MIMO technology, the wireless data rate up to 1.8Gbps, meet with demand of high-speed applications such as VR/AR, 4K or 8K stream media.

802.11ax:

1024-QAM, Long OFDM Symbol, Max 160MHz bandwidth

802.11ac:

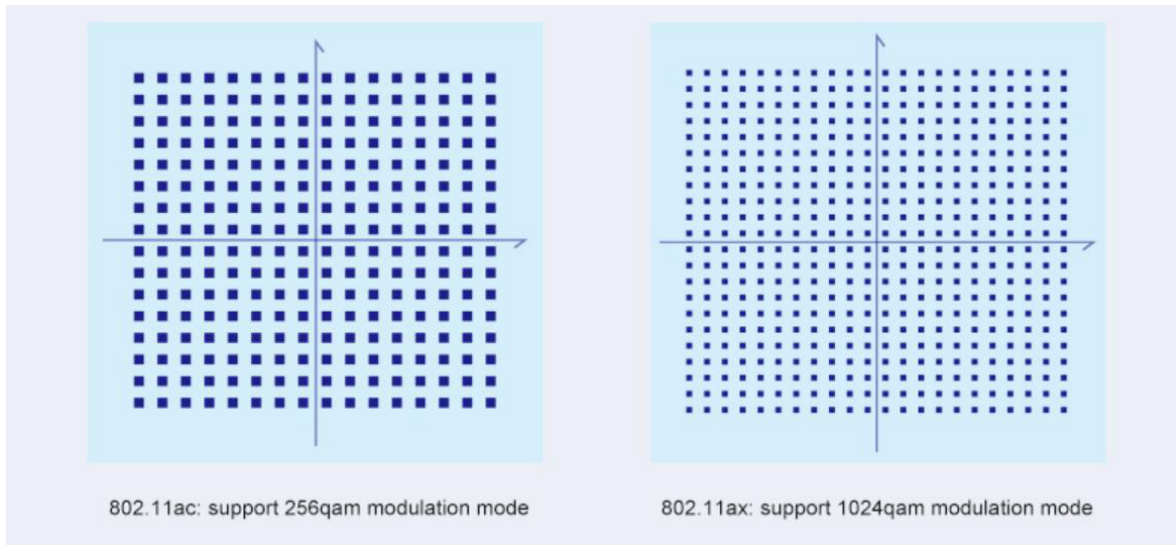
256-QAM



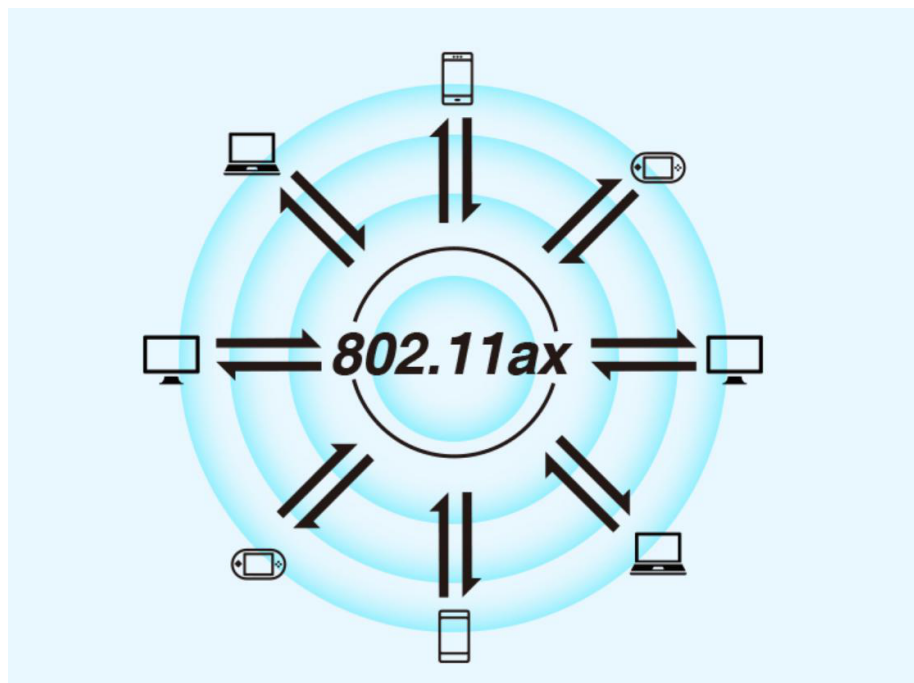
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1024-QAM Modulation Mode. 802.11ax adopt 1024-QAM modulation, which is more efficient than 802.11ac modulation, the throughput of single spatial traffic is increased by 25%.



DL/UL MU-MIMO. 802.11ax support both downlink MU-MIMO and uplink MU-MIMO. It can communicate with multiple end users at the same time, greatly improving the user's uplink transmission rate and the system's uplink and downlink capacity, improving the efficiency of multi-user concurrent scenarios, reducing the terminal application latency.

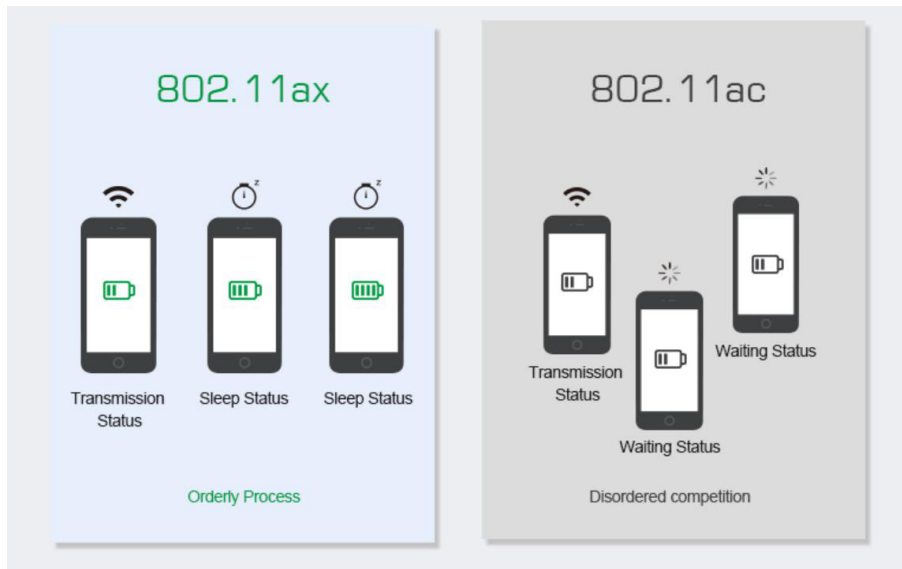




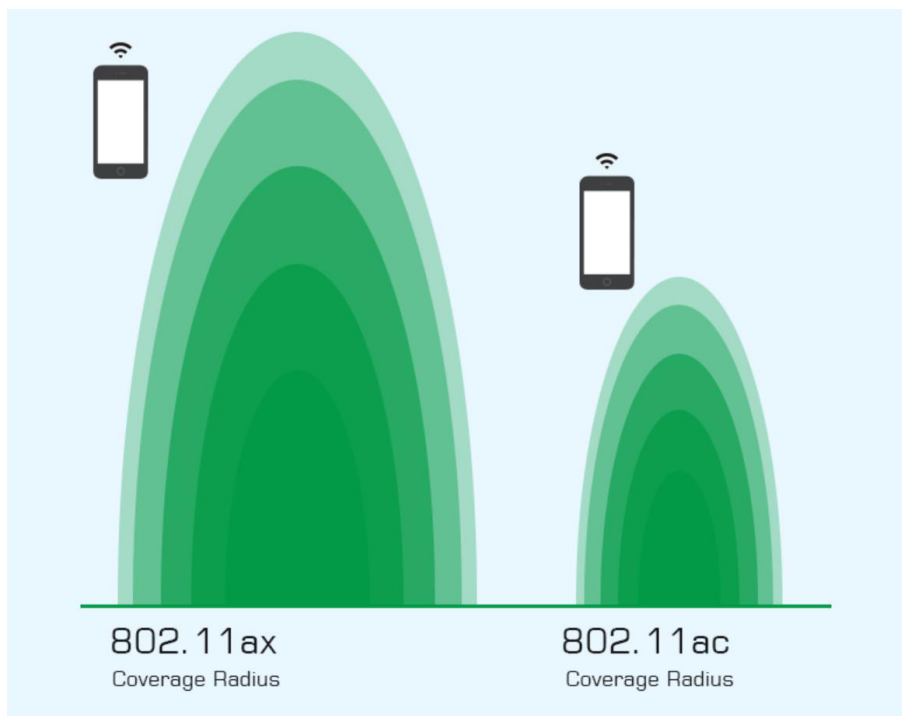
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TWT (Target Wake-up Time). 802.11ax support TWT, allowing devices to negotiate when need to wake up, send and receive data. In additional, wireless AP can group the device into different TWT cycles, increase sleep time, reduce the device competing after wake-up, and save the device power.



Coverage Improvement. 802.11ax support long OFDM symbol transmission mechanism and 2MHz narrowband transmission, effectively reduced the packet loss rate and noise interference, improve the receive sensitivity and increase the Wi-Fi coverage.

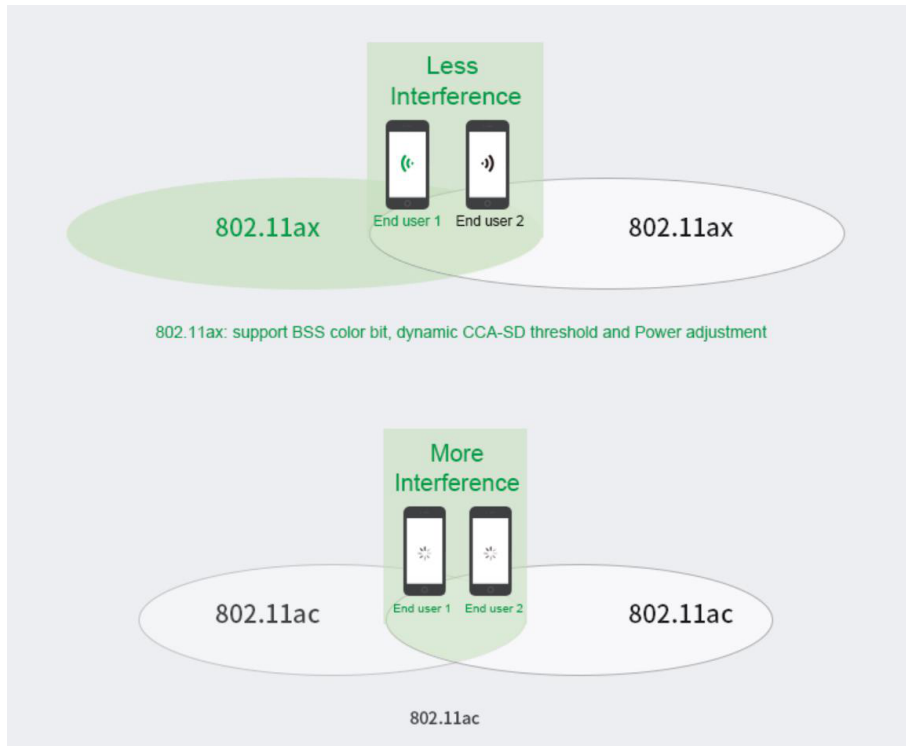




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Improvement of Anti-Interference Ability. 802.11ax support BSS color bit and dynamic CCA-SD (Clear Channel Assessment Signal Detection) threshold and power adjustment, effectively alleviates the channel interference in multi-users scenarios, improve the utilization of spectrum resources.



Technical Specifications:-

HARDWARE SPECIFICATIONS	
Chipset	MT7621DAT+MT7905N+MT7975DN
Standard	802.11ax/ac/b/g/n
Flash	SPI NOR 8MB
Memory	128MB
2.4G Frequency	2.4GHz - 2.484GHz
2.4G Wi-Fi standard	802.11b/g/n/ac/ax
5.8G Frequency	5150~5850MHz
5.8G Wi-Fi Standard	802.11 a/n/ac/ax
Interface	1 * 10/100 /1000 RJ45 WAN Port
	1 * 10/100 /1000 RJ45 LAN Port
	1 * Reset button, press 10 seconds to revert to default setting
	USB3.0 and Bluetooth are optional if need.
Antenna	Build in 4dBi MIMO Antenna
Data Rate	1800Mbps
End Users	120+
RF Power	≤ 18dBm
DC	12V----1.5A
PoE	48V (IEEE 802.3af/at)
LED light	Sys and WiFi, WAN, LAN
Power Consumption	≤ 15W
Size	168mm x 168mm x 32mm



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Technical Specifications:-

FIRMWARE SPECIFICATIONS	
Working Mode	Gateway, AP
Wireless Functions	Multiple SSID functions: 2.4GHz: 4; 5.8GHz: 4
	Support SSID hidden
	Support seamless roaming, 802.11kvr standard
	Support 5G Prior for a faster Ethernet
	Wireless Security: Open, WPA, WPA2PSK_TKIPAES, WAP2_EAP, WPA3, 802.1x
	Support MAC filter
	Support Wi-Fi time on/off to save energy
	Support client isolation to improve the wireless stability
	Support RF power adjustable, adjust the RF power based on environment
	Support user quantity limited, Max 64 users to access each band
Networking Function	VLAN settings
	Cloud access support in gateway mode
Device Management	Back-up the configuration
	Restore the configuration
	Reset to factory default
	Reboot the device: including time reboot or reboot immediately
	Admin management password modify
	Firmware upgrade
	System log
	Support firmware GUI web management, AC controller management,
	remote management and cloud management
Protocols	IPv4

ANTENNA SPECIFICATIONS	
Frequency Range	2.4GHz, 2.5GHz
Impedance	50 Ohms nominal
Gain	4dBi
Radiation	Omni
Polarization	Vertical



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ANTENNA SPECIFICATIONS

Return Loss/VSWR



Frequency Range	5.15GHz, 5.85GHz
Impedance	50 Ohms nominal
Gain	4dBi
Radiation	Omni
Polarization	Vertical

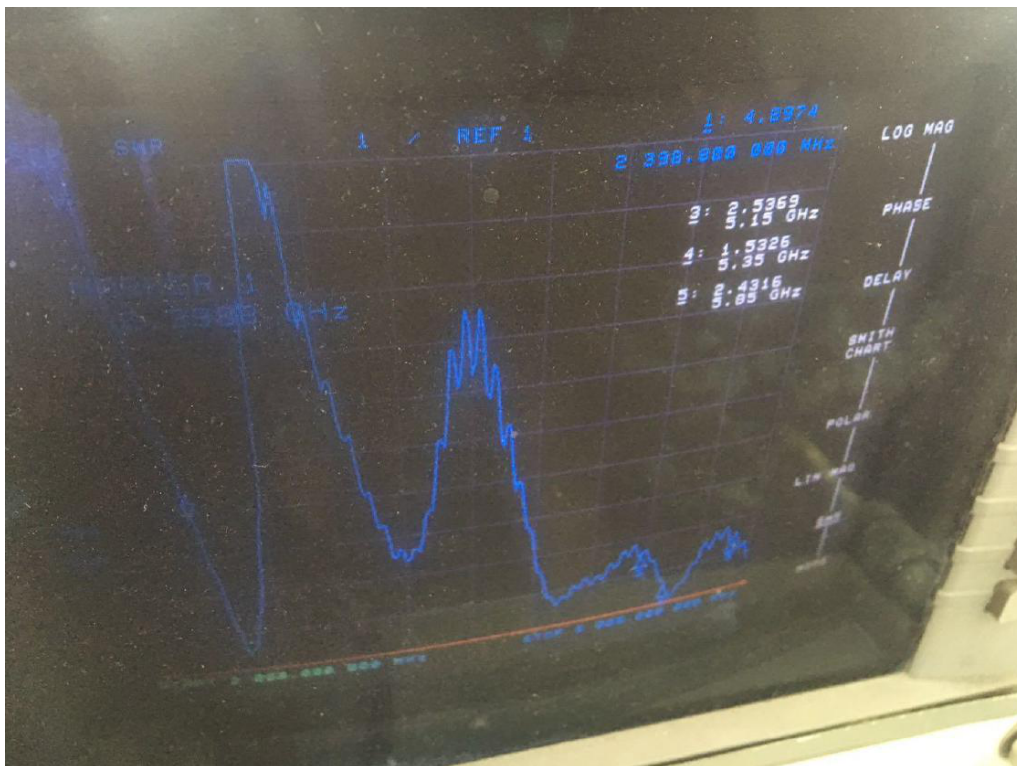


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ANTENNA SPECIFICATIONS

Return Loss/VSWR

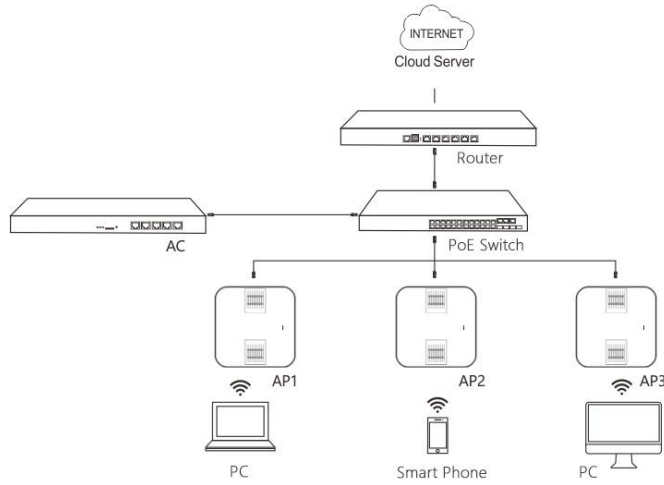




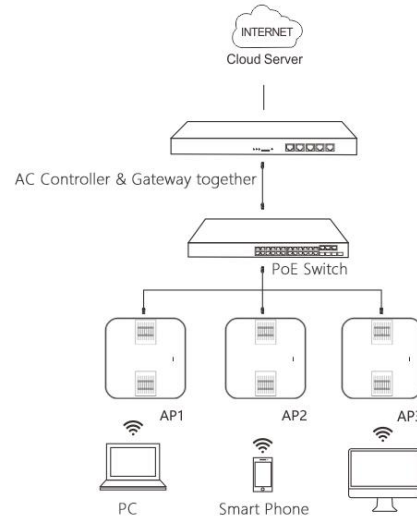
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APPLICATION



Connection Diagram 1



Connection Diagram 2





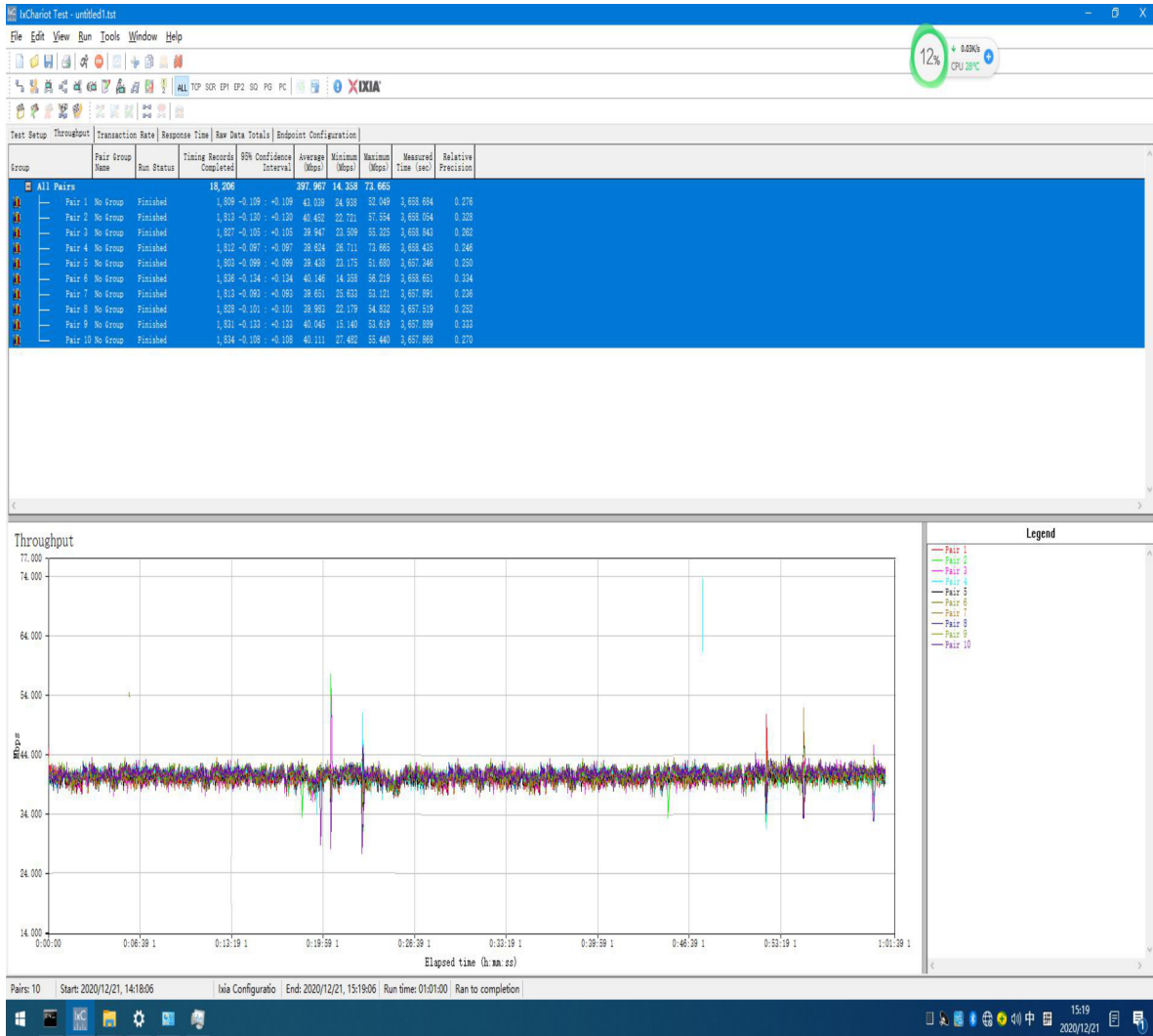
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THROUGHPUT TESTING

Mode 11AX HT40 (2.4G)

Upload Link 397Mbps





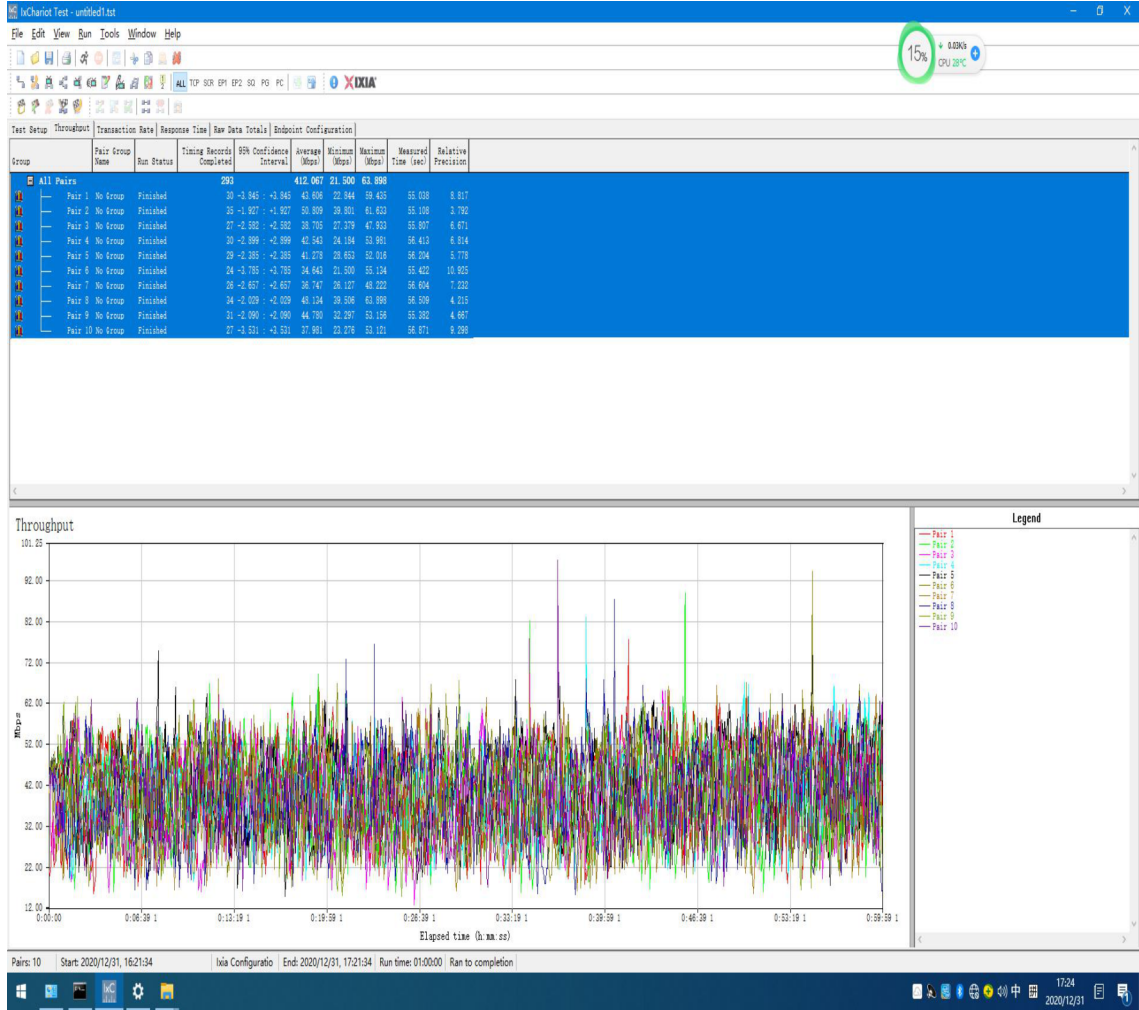
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THROUGHPUT TESTING

Upload Link

412Mbps



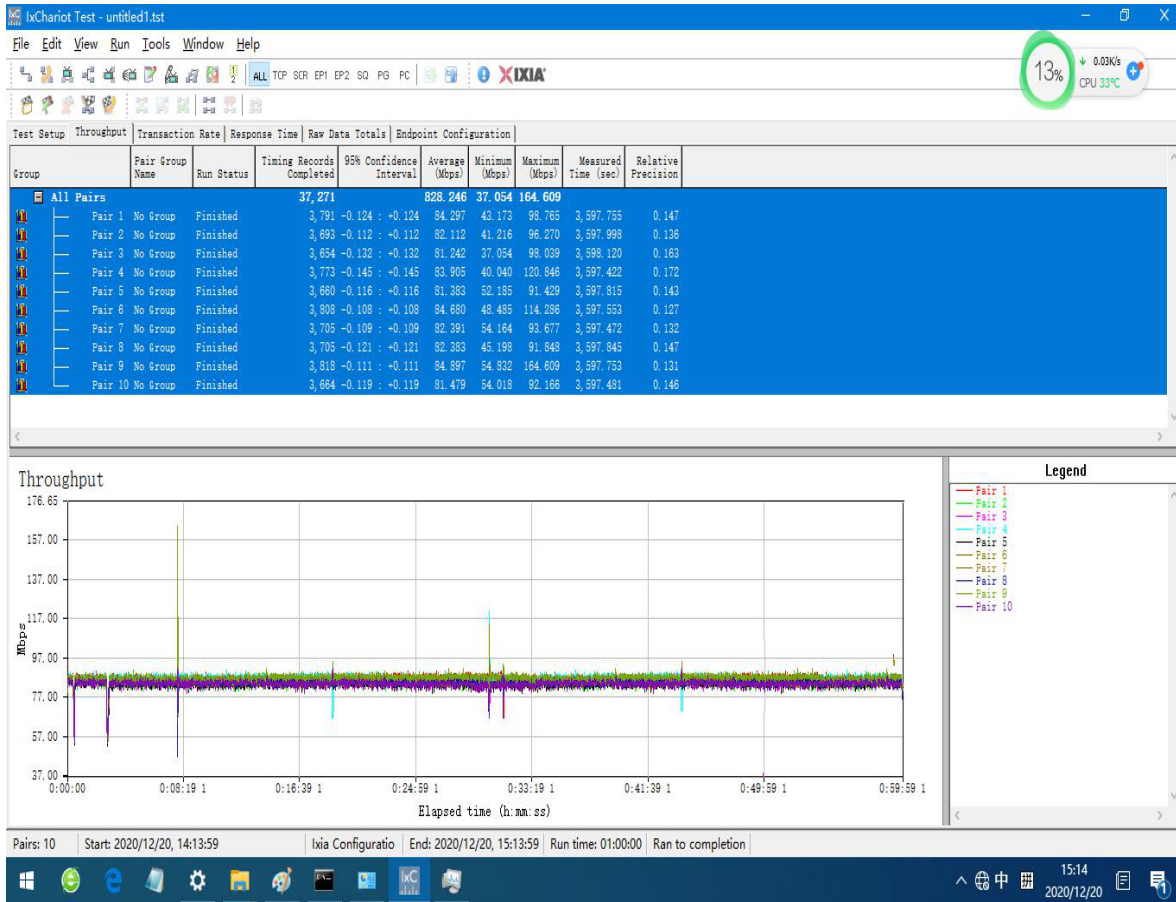


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THROUGHPUT TESTING

Mode	11AX HT40 (5.8G)
Upload Link	828Mbps





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THROUGHPUT TESTING

Upload Link 880Mbps

The screenshot shows the IxChariot test interface. At the top, the test setup is configured for an Upload Link of 880Mbps. The main window displays a table of test results for 10 pairs, all of which are in an 'Error' state. Below the table is a 'Throughput' graph showing Mbps over time, with a legend for the 10 pairs. The status bar at the bottom indicates that an error was detected during the test.

Group	Pair Group Name	Run Status	Timing Records Completed	95% Confidence Interval	Average (Mbps)	Minimum (Mbps)	Maximum (Mbps)	Measured Time (sec)	Relative Precision
All Pairs			211,421		890.127	20.070	282.686		
Pair 1	No Group	Error: CHR0200	20,046	-0.055 : +0.055	83.496	30.441	125.196	19,208.317	0.065
Pair 2	No Group	Error: CHR0200	21,143	-0.079 : +0.079	88.069	21.674	136.519	19,205.746	0.069
Pair 3	No Group	Error: CHR0200	21,045	-0.054 : +0.054	87.662	26.238	282.686	19,205.499	0.062
Pair 4	No Group	Error: CHR0200	22,599	-0.067 : +0.067	94.137	20.070	169.776	19,205.294	0.071
Pair 5	No Group	Error: CHR0200	20,399	-0.060 : +0.060	84.970	27.629	121.396	19,205.902	0.071
Pair 6	No Group	Error: CHR0200	22,072	-0.054 : +0.054	91.943	34.737	133.169	19,204.938	0.059
Pair 7	No Group	Error: CHR0200	20,657	-0.052 : +0.052	86.043	28.725	117.820	19,208.288	0.061
Pair 8	No Group	Error: CHR0200	21,745	-0.055 : +0.055	90.578	33.642	188.679	19,205.924	0.061
Pair 9	No Group	Error: CHR0200	21,198	-0.050 : +0.050	88.249	37.843	224.719	19,205.555	0.056
Pair 10	No Group	Error: CHR0200	20,529	-0.051 : +0.051	85.512	38.409	160.966	19,205.787	0.060

Throughput graph showing Mbps vs Elapsed time (h:mm:ss). Legend includes Pair 1 through Pair 10.

Status bar: Pairs: 10 | Start: 2020/12/22, 18:47:30 | Ixia Configuratio | End: 2020/12/23, 0:07:48 | Run time: 05:20:18 | Error detected



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ACCESSORY	
AP	1
LAN Cable	1
Mounting Accessories	1
Gift Box	1

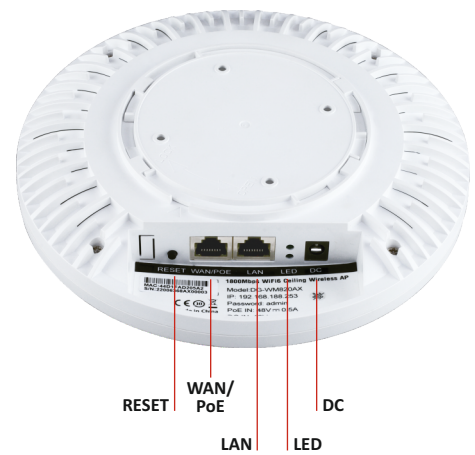
Supported Controllers	DG-WU2001 / DG-WU2003 / DG-WU2004 / DG-WU2008 / DG-WU3000
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Ordering Information:-

DG-WM820AX : DIGISOL Wi-Fi6 11ax 1800Mbps Ceiling Wireless AP

*Warranty shall be subject to terms and conditions specified in the DIGISOL PRODUCT WARRANTY displayed on the website of the company.

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