Allegro Network Multimeter 1400 / 3400 / 5400

Datasheet

Analysis and Debugging Tool for Network Administrators

- ✔ High analysis and capture rates (up to 200 GBit/s)

- ✔ Up to 192 TB of storage (ideal for data centres and core networks)

- ✔ Expandable by JBODs to multiple Petabytes of storage

- ✔ Analyses and correlates all metadata from L2-L7

- ✔ Real-time live data and back-in-time analysis

- ✔ 100 % reliable full capture-to-disk solution

- ✔ Selective and retrospective pcap extraction

- ✔ Development and support in Germany

Extent of Application: Enterprise Core Networks, Data Centres, ISP Networks

The x400 Series, consisting of Allegro 1400, 3400 and 5400, is optimised for the analysis, monitoring, verification and troubleshooting of network connections from 1 G to 200 G. The Allegro x400 Series is designed for very high capture recording, analysis and storage rates and allows retroactive verification of up to 800,000 IP addresses and up to 256 million connections. This Allegro Network Multimeter Series is ideal for use in large data centres, core networks and ISP infrastructures.

Real-time Visibility and Statistics for all Connections

The Allegro x400 appliances provide granular visibility and selective packet filtering across L2 to L7 in real-time and history mode. The web interface offers comprehensive overviews as well as detailed statistics for network quality, IPs, MACs, VLANs, Multicast, QoS, TCP, TLS, RTP, Profinet, VoIP and many more.

Traffic Recorder and Back-in-Time Playback

The Allegro x400 features back-in-time capability, that enables precise selection and extraction of recorded information. Such pre-filtered pcap data can be easily extracted with a simple click. In addition, selected data can be individually reimported into the network, to recreate specific events or security incidents, e.g. with IDS / IPS systems.

Expandable Ethernet Ports, In-memory Database and Ring Buffer

The x400 Series has multiple extensions for additional connections and storage options. The dual QSFP28 option allows up to 100 GBit/s of real-time traffic to be checked in 100 GBit/s environments. Alternatively, the number of ports can be increased to 24, selectable from 1 / 2.5 / 5 / 10 / 25 / 40 / 100 or 200 GbE Cu / SFP+ / QSFP / QSFP56 ports. The memory size for processing historical data in the In-memory database is 64 GB in the base version and can be expanded up to 4,096 GB. The ring buffer, for recording network traffic on multiple links, may be dynamically expanded up to 192 TB. Additional JBODs allow to expand the ring buffer to multiple Petabytes.

Allegro x400 front view

Table 1 Allegro 1400 / 3400 / 5400 Specs

Feature	Allegro 1400 / 3400 / 5400 (Revision 1)
Rack units	2
Size (W / H / D) in mm	437 x 89 x 647
Weight	15 - 26 kg
Power supply	Redundant 600W (100-120 V) or 650 W (200-240 V) AC
Optional Disk Expansion	12 open 3.5" HDD slots for SATA3 / SAS3 Optional up to 4 x U.2 SSDs with U.2 Expansion Kit (Order ID 181)
Airflow	Front to Back
Packaging	Server Box
Internal Database memory	Base unit: 64GB ECC, Extension: up to 4 TB
Management Port	1 x 1 G / 10Base-T 1 x 1000Base-T IP KVM Remote Management
Monitor Ports	Up to 7 expansion slots, per extension: - dual 200G (QSFP56) - dual 40G / 100G (QSFP28) - dual 25G (SFP28) - dual / quad 10G (SFP+) - dual 1 / 2.5 / 5 / 10GBase-T (Cu) - quad 1000Base-T (Cu) - quad PoE 802.3 at 25.5 W 1000Base-T (Cu)

Performance (full analytics / capture only)	Allegro 1400	Allegro 3400	Allegro 5400
Max. throughput	20 / 40 Gbit/s	50 / 100 Gbit/s	100 / 150 Gbit/s
Average throughput2	10 / 20 Gbit/s	25 / 50 Gbit/s	50 / 100 Gbit/s
Average packets per second2	1.5 / 4 million pps	4 / 12 million pps	8 / 25 million pps
Max. Capture-to-Disk performance	Up to 12/40 Gbit/s with 12 HDDs / 2 SSDs	Up to 12 Gbit/s with 12 x HDDs Up to 80 Gbit/s with 4 x U.2 SSDs Up to 120 Gbit/s with additional JBODs	

Allegro x400 back view

Max. parallel connections	4 million simultaneously open connections
In-memory DB Storage3	Base version: 64GB: Storage of up to 50,000 active IP addresses and the last 16 million connections. Memory upgrades increase the number of IP addresses or connections.
Jumbo Frames	9,000 Bytes
Hardware warranty	1 or 3 years, longer as an option
2U rack kit	Included
Operating Temperature	+10 to +35 degrees C
Non-operating Temperature	-40 to +60 degrees C
Certifications	FCC, CE

Table 2   Network Extension Options

The x400 Series offers multiple extensions for additional ports. The dual QSFP28 option allows up to 100 GBit/s of real-time traffic to be checked in 100 GBit/s environments. Alternatively, the number of ports can be increased up to 24, selectable from 1 / 2.5 / 5 / 10 / 25 / 40 / 100 / 200 GbE Cu / SFP+ / QSFP ports.

Order ID	Product Description
211	SFP+ 2-port extension (1/10G)
212	SFP+ 4-port extension (1/10G)
213	SFP+ 2-port extension with nanosecond timestamp support
214	SFP+ 2-port extension with GPS based nanosecond timestamp support
215	10G Base-T 2-port Cu extension (1/2.5/5/10G)
216	1000Base-T 4-port Cu extension (100M/1G)
217	SFP28 2-port Cu extension (1/10/25G)
218	QSFP 2-port extension (40G)
219	1000Base-T 4-port BYPASS Cu extension
220	10G 2-port BYPASS short range extension
221	QSFP28 2-port extension (40G/100G)
222	1000Base-T PoE+ Cu 4-port extension card
224	QSFP56 2-port extension (200G)

Table 3   Memory Expansion Options

If you need to view more historical data, you can upgrade the In-memory database of the AllegroNetwork Multimeter. The base version already contains 64 GB of memory.

Order ID	Product Description
340	Memory extension 64 to 128 GB
341	Memory extension 64 to 256 GB
342	Memory extension 64 to 512 GB
343	Memory extension 64 to 1,024 GB
344	Memory extension 64 to 2,048 GB
345	Memory extension 64 to 4,096 GB

Table 4   Options for Internal Storage Expansion

The internal storage acts as a packet ring buffer for the entire link or its selected traffic. This allows the extraction of historical packets. The HDD slots are open, i.e., you can install your own HDDs.

Order ID	Product Description
441	2 TB U.2 SSD, full packet capturing up to 10Gbit/s, limited warranty 3,600 TBW
442	1TB HDD, full packet capturing up to 1.2 Gbit/s
443	4TB HDD, full packet capturing up to 1.2 Gbit/s
444	10TB HDD, full packet capturing up to 1.2 Gbit/s
445	16TB HDD, full packet capturing up to 1.2 Gbit/s
446	6.4TB U.2 SSD, full packet capturing up to 20 Gbit/s, limited warranty 37,300 TBW
447	12.8TB U.2 SSD, full packet capturing up to 20 Gbit/s, limited warranty 74,700 TBW

1 Under ideal testing conditions | 2 Real-world datacenter throughput scenario
3 Real-world datacenter traffic