SPIRENT TECH-X FLEX
MoCA TEST MODULE

Spirent's MoCA module for the Tech-X Flex® tester provides field technicians with an efficient and cost-effective method for troubleshooting MoCA related issues inside the home.

FEATURES & BENEFITS

- Isolate MoCA 1.0/1.1 transport related issues from physical layer coaxial issues
- Verify data rates between all devices (e.g., Set Top Boxes (STBs), residential gateways (RGs), media servers, etc.) to ensure suitability for high-speed video sharing
- Identify noise and other impairments which reduce data rates by viewing bit loading within the carrier frequencies
- Verify IP services such as IP Video and high-speed Internet through the MoCA interface
- Analyze connectivity and data rates between up to 16 network connected MoCA devices
- Perform in-service and out-of-service testing
- Ability to emulate an Ethernet Coaxial Bridge (ECB) to enable in-line IP Connectivity Testing
- One click MoCA Quick Test to quickly qualify a MoCA-based network

MoCA is an in-home distribution technology which runs over coaxial cable. Due to the large penetration of residential cable and satellite services, MoCA provides a relatively low cost method of getting IP Video services (e.g., IPTV, VoD and DVR sharing) to the various TVs within the home without requiring new cable to be installed at turn-up.

PINPOINT FAULTY CABLING, AVOID PREMATURE STB REPLACEMENT

Without the Tech-X Flex, the technician cannot pin-point the source of the poor service performance over a MoCA connection. At the moment they can replace routers and/or STBs or run new coaxial cable in the hope of solving the problem, but this is an extremely costly hit or miss approach. Checking for connectivity to the devices and subsequently analyzing the data rates between them is the most efficient approach as it isolates physical layer issues with the coaxial cabling from MoCA related issues within the devices.

A two-stage approach of checking connectivity and measuring bandwidth between the Tech-X Flex and the STB and then between the Tech-X Flex and the residential-gateway/router allows immediate isolation of the coax cable connecting the devices.

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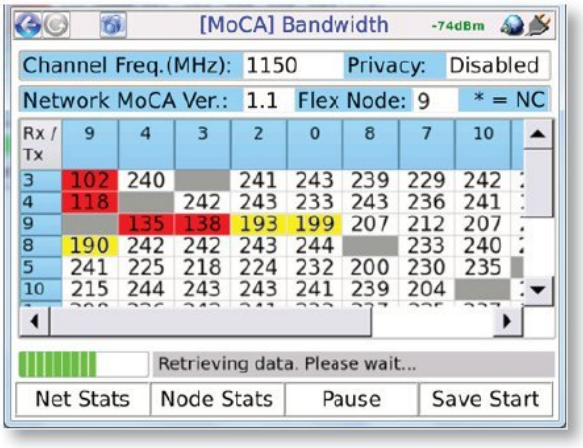
VERIFY DATA RATES

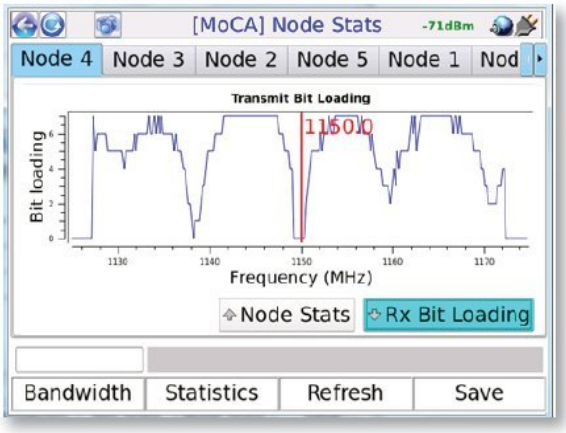
Being able to verify the data rates between MoCA devices is crucial when it comes to troubleshooting applications such as video on demand or DVR video sharing. Previously, gathering this information was cumbersome and required manually interrogating each individual device in the hope it presented this data. Tech-X Flex is unique in being able to present this information in one easy to read table which immediately highlights existing problems.

For example, by looking at the bandwidth table below, Tech-X Flex quickly identifies that the video sharing between Node 3 to Node 9 as well as Node 4 to Node 9 is performing poorly thus highlighting a possible physical layer fault or noise interference issue.



BIT LOADING

By examining the bits per carrier frequency, a determination can be made as to whether interference is occurring at certain frequency bands which could cause low data rates.

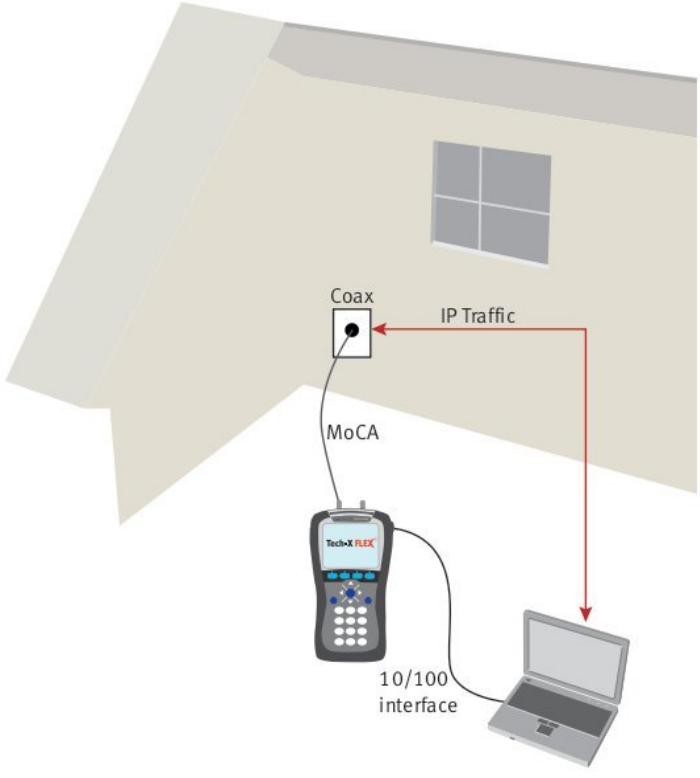


IP CONNECTIVITY

IP Connectivity can also be tested over the MoCA interface using the Ping, TraceRoute, Packet Loss, Throughput or Web Browser functionality. Testing across all layers ensures no protocol issues exist, which may not be apparent when it is only MoCA level tests that are performed.

ECB MODE

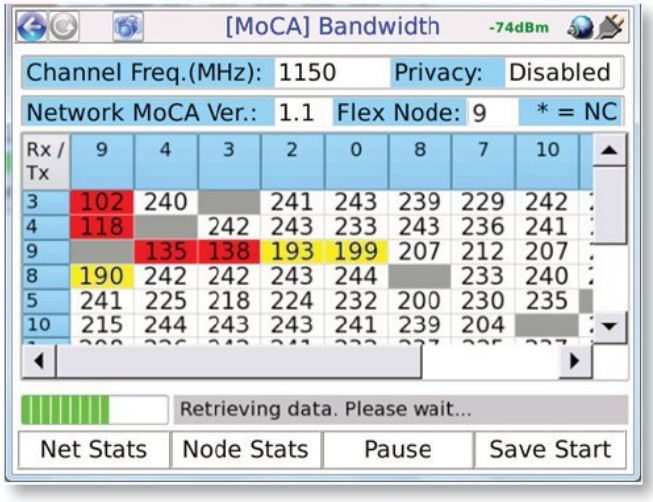
The Tech-Flex unit with the MoCA module can act as a bridge between MoCA and Cat-5 Ethernet, commonly called an ECB (Ethernet/coax Bridge). For example, the unit can allow a computer to join the MoCA-based LAN or WAN through its 10/100 interface.

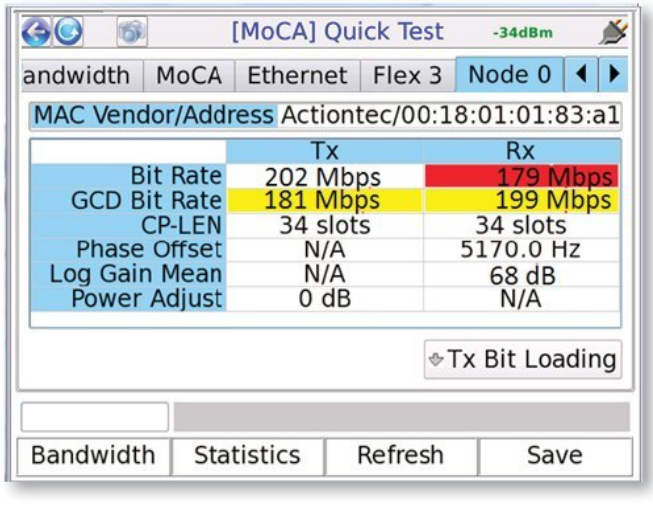


MOCA QUICK TEST

MoCA Quick Test allows the field technician to run a sequence of automated MoCA-related tests, designed to quickly qualify the MoCA based Network.

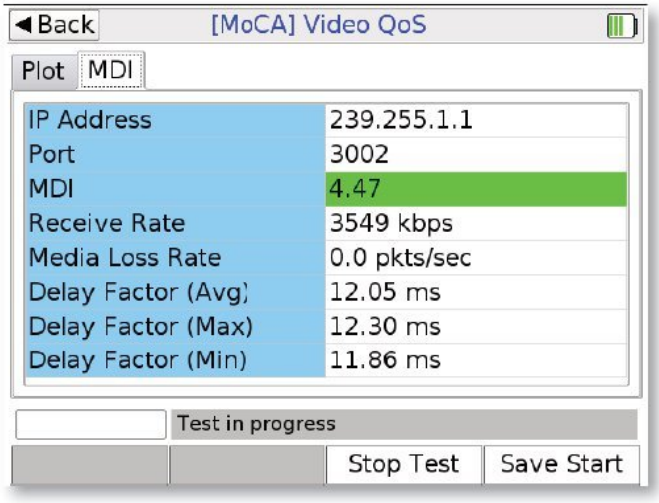
The test can be run before or after the unit has joined a MoCA network. Once the unit is fully synchronized, the remainder of the Quick Test involves the retrieval and evaluation of a variety of network statistics. In addition to a log of these statistics, the test also produces a set of tabs that show much of the actual data that was measured and analyzed, thus giving the field technician a quick snapshot of the MoCA-based network.





IP VIDEO MEASUREMENTS

The optional IP Video functionality can utilize the MoCA interface for determining the consumer's QoE. The dual MoCA ports allow in-line/passive measurements that avoids proprietary signalling/ middleware issues between the STB and head end Video Server.



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MOCA 1.1 STANDARD SUPPORTED

MOCA STATISTICS

Link Control Packets Probe Packets Admission Packets Asynchronous Packets	Transmitted Errored Received Errored Dropped

ETHERNET STATISTICS

Transmitted Packets Received Packets	Good Errored Dropped

NODE STATISTICS

Node ID	Up to 16 nodes supported Node ID Vendor ID MAC Address RF Channel Frequency Data Rates between nodes Broadcast Rates between nodes Phase Offset Log Gain Mean (dB) Power Adjust (dB)
Bits per Carrier Frequency Graphs	Received and Transmitted

ORDERING INFORMATION

PRODUCT NUMBER	PRODUCT NAME	PRODUCT DESCRIPTION
T5000	Tech-X Flex	With 10/100 Ethernet interface for IP Ping, TraceRoute, DHCP/Static Addressing
T5610	MoCA Option	MoCA data connectivity, stats, diagnostic assessment, set top box throughput emulation. Also IP connectivity—Ping, TraceRoute.
T5002	Dual MoCA Option	Provides a second MoCA interface to allow in-line/passive testing of IP services. Requires T5610.

SPIRENT SERVICES

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirent.com or contact your Spirent sales representative.

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