



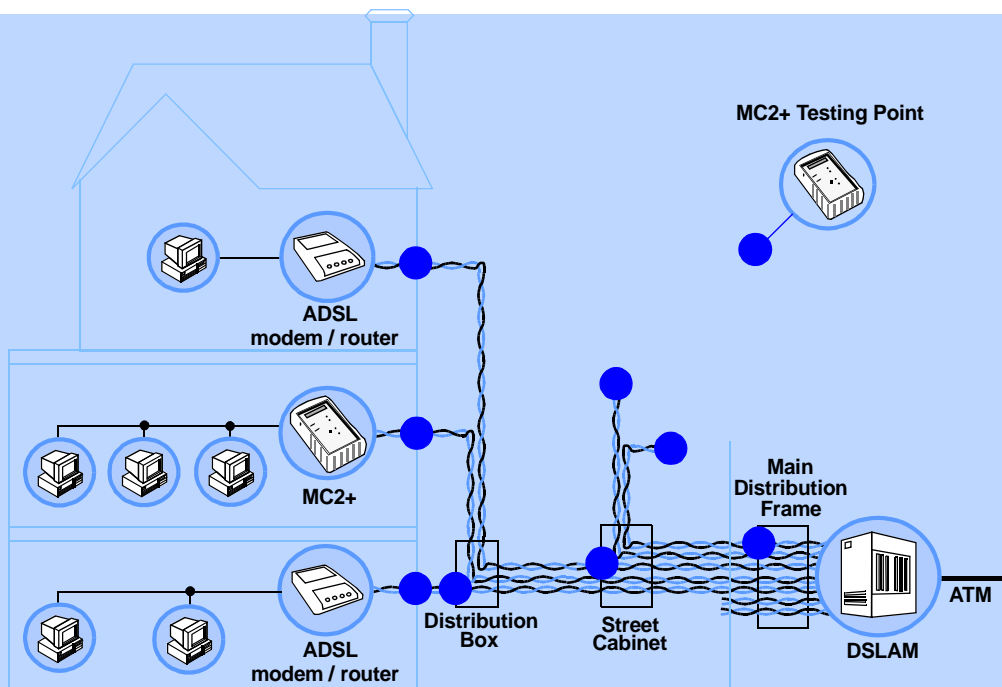
MC2+



ADSL has been chosen by millions of customers over the world for Internet access but also for other new services such as TV over copper pair, VoD or LAN access.

Today, the demand of high-speed access is still increasing, hunger for bandwidth and better coverage is pushing the market continuously to improve the service performance. This makes ADSL a live technology. The standards for ADSL2 and ADSL2+ implement extended range and faster bit rates. At the same time, the customer is asking for a service that is ever cheaper and more reliable.

Trend MC2+ is the answer to the challenges of current wideband copper access technology. The ideal solution for easy, while productive, service qualification and troubleshooting at the local loop.



- Small, light and robust
- Battery powered
- Easy to use, no training needed
- ADSL, ADSL2, ADSL2+ and RE-ADSL2 support
- IP ping test
- Support for ITU-T G.dmt, G.lite and ANSI T1.413
- Counters for transmitted and received data
- Line attenuation and noise margin
- Remote operation

Autonomous and Simple

The difference between a good and a bad ADSL service is the question of time. Service provisioning and troubleshooting must be performed quickly and efficiently.

That is the reason why Trend Communications has designed the MC2+: it enables you to see what is going on in the line, in a very short time, with minimum or no configuration. Using the MC2+ is as simple as testing with a multimeter.

The MC2+ is a hand-held and battery-powered tester. It is designed to be carried by field technicians and used for testing from almost anywhere without worrying about having a laptop or a connection to the mains. It is possible to verify various connections from the street cabinet or the MDF at the central office without visiting the home of every subscriber.



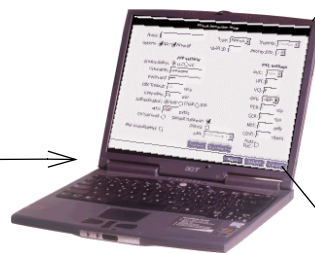
The Shortest Path to a problem-free service

- ADSL modem / router substitution
- ADSL over POTS / ADSL over ISDN
- Connection progress log
- Support for Bridged, PPPoA and PPPoE connections

Stand-alone or Hosted

The MC2+ can be used in stand-alone or hosted mode. When used in stand-alone mode it automatically performs a sequence of tests that verify the service.

The hosted mode enables you to connect the tester to a PC. This mode is useful to get quantitative details of any measurement or to customize the stand-alone mode tests.



MC2+ Trend Communications

HOME EZ-SETUP CONFIG GLANCE TOOLS STATUS

EZ Setup
The EZ Setup section which is a wizard allows you to create new connections, edit existing connections, and configure other basic settings.

Config
The Config section allows you to create new connections, edit existing connections, and configure other basic settings.

Glance
Multilayer results at a glance

Tools
The Tools section lets you carry out system commands and perform simple system tests.

Status
The Status section displays status, log and statistical information for all connections and interfaces.

Status Information

System Uptime: 0 hours 7 minutes	Ethernet: Connected
DSL Status: Connected	Software Version: 3.6.0C
DSL Speed: 256/576kbps	Firmware Version: 815_NB_032285.00FX

Log Mail Refresh

Performance counters

The MC2+ is useful for finding an explanation why the line is failing: Noise margin and attenuation readings permit physical layer evaluation. Error counts and bandwidth usage information offer a summary of bit transmission performance. Verification at protocol level is obtained from the connection log.

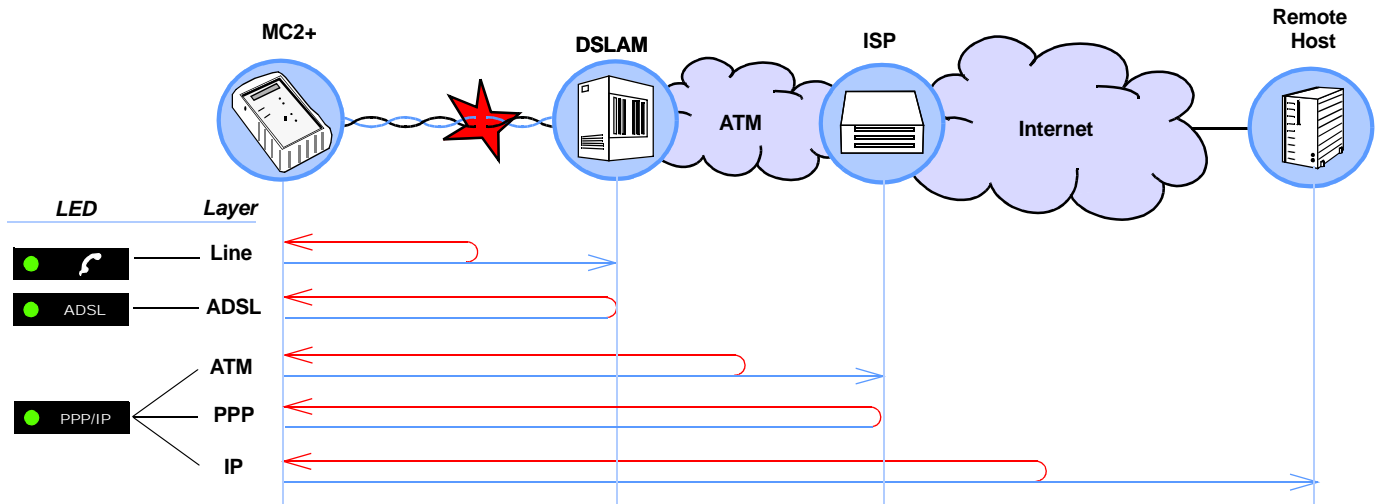


The Ideal Tool

for installation and instant network troubleshooting

All Layer Testing

Trend MC2+ tests all the network layers to verify end-to-end connectivity. First it looks for DC power in the line to confirm connection with the central office. Then it tries training with the DSLAM and authenticates a connection with a PPP peer. IP level is checked with a ping to a remote address. All this is carried out automatically in a single test.



ADSL, ADSL2 and ADSL2+

ADSL is continuously being improved and adapted to specific customer needs: G.lite allows easy installation without splitters, the recently released ITU-T Recommendations for ADSL2, RE-ADSL2 and ADSL2+ offer better performance in terms of bandwidth and range.

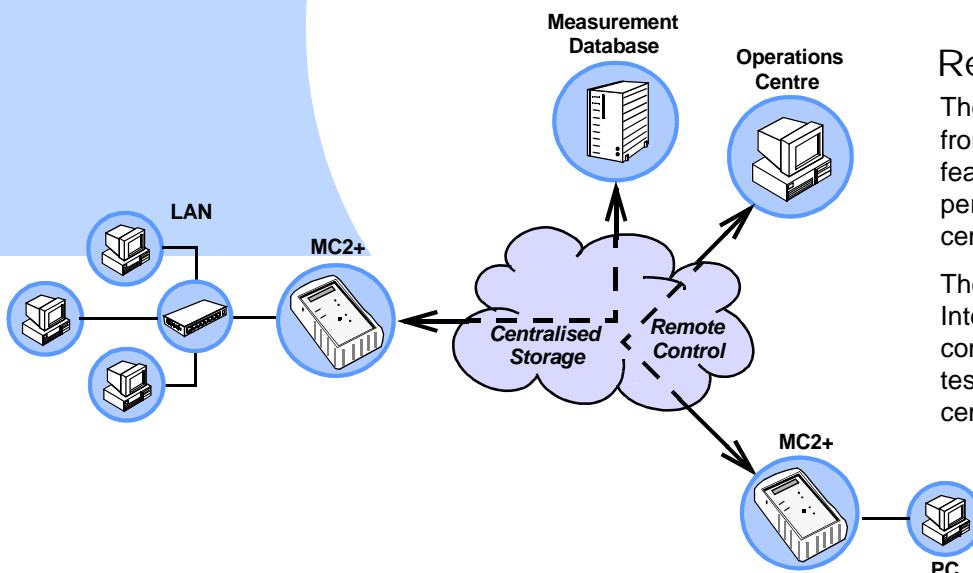
Because the MC2+ tester supports all ITU-T and ANSI recent standards, it can be used for ADSL, ADSL2 and ADSL2+ testing.



Remote operation

The MC2+ can be controlled remotely from the Internet. Because of this feature complex measurements can be performed from a remote operations centre.

The capacity of the tester to access the Internet is also useful for downloading configuration parameters for specific tests or uploading test results to a central information database.



Technical Data

MC2+

Operating Modes	Stand-alone or hosted
Settings	<p>Connection Type: PPPoA, PPPoE, Bridge, Static, DHCP, and CLIP</p> <p>PPP Authentication type: Auto, CHAP and PAP</p> <p>PPP Authentication: Username and Password</p> <p>PPP Timers: Idle timeout and Keep Alive</p> <p>VC settings: VPI and VCI</p> <p>ATM traffic profile of transmitted traffic (UBR, CBR and VBR)</p> <p>Modulation: MMODE, T1413, G.dmt, G.lite</p> <p>Encapsulation: LLC/SNAP or VC mux</p> <p>IP ping settings (remote address, ping size, number of pings)</p>
Results	<p>Upstream and downstream connection rate</p> <p>Upstream and downstream noise margin</p> <p>Upstream and downstream line attenuation</p> <p>Path Mode (Fast or Interleaved)</p> <p>Peak cell rate</p> <p>F4 and F5 near end loop-back count</p> <p>Transmitted and received PDUs</p> <p>Transmitted and received bytes</p> <p>Error counts</p> <p>IP address assignment</p> <p>IP ping test result</p> <p>System log</p>
LED Indicators	<p>Power: On/Off status</p> <p>Battery Low: Low battery warning</p> <p>Line: Connection with the central office</p> <p>ADSL: Synchronization status with a DSLAM</p> <p>PPP/IP: ATM, PPP, IP connectivity status</p>
Connectors	<p>RJ11 Line connection</p> <p>USB for hosted mode</p> <p>RJ45 Ethernet for hosted mode</p> <p>DC jack for external power input</p>
Relevant Standards	<p>ANSI T1.413 Issue 2</p> <p>ITU-T G.992.1 (ADSL, G.dmt)</p> <p>ITU-T G.992.2 (ADSL, G.lite)</p> <p>ITU-T G.992.3 (ADSL2, G.dmt.bis)</p> <p>ITU-T G.992.4 (ADSL2, G.lite.bis)</p> <p>ITU-T G.992.5 (ADSL2+)</p> <p>ITU-T G.992.3 Annex L (RE-ADSL2)</p> <p>ITU-T G.992.x Annex A (ADSL over POTS), Annex B and Annex B/U-R2 (ADSL over ISDN)</p> <p>RFC 1483 (bridged/routed protocol encapsulation over ATM)</p> <p>RFC 2368 (PPPoA)</p> <p>RFC 2516 (PPPoE)</p>
CE Marking	<p>EMC - EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3</p> <p>Safety - EN 60950</p> <p>WEEE Directive</p>
Environmental	<p>EN 60529 Class 20</p> <p>ETS EN 300 019-2-7 Class 7.2</p>
General	<p>Dimensions 90 mm x 140 mm x 45 mm</p> <p>Weight: 400 g (batteries included)</p> <p>Operating temperature range 0 °C to + 40 °C</p> <p>Storage temperature range -10 °C to + 50 °C</p>

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