

Simplified Network Testing with Auto Discovery and In-Band Control

MT1000A and MT1100A Auto Discovery and In-Band Control

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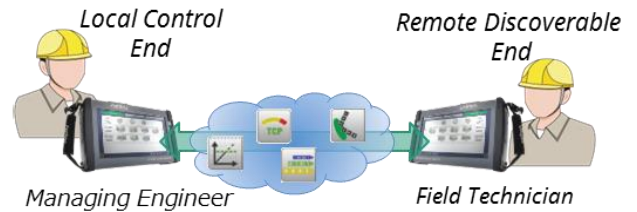
1. Introduction

1.1. About This Application Note

This note describes how the Network Master Pro and Network Master Flex Auto Discovery feature discovers other remote Network Master Pro and Network Master Flex units on the network, and use of the In-Band Control feature to control and adjust discovered remote units.

2. Simplicity of Testing with Network Master Pro and Network Master Flex

The Network Master Pro MT1000A and Network Master Flex MT1100A have been designed for simplicity of operation to ensure field technicians can complete the job as quickly as possible without requiring a deep understanding of different technologies. The Auto Discovery feature simplifies testing for field technicians, allowing quick completion of repeatable testing by identifying other Network Master Pro and Network Master Flex units on the network. The In-Band Control feature allows a local user to control and adjust remote Network Master Pro and Network Master Flex units. This combination of Auto Discovery and In-Band Control makes best use of field technicians' time while ensuring no possible miscommunication or mis-configuration between the two ends of the network under test. The Network Master Pro and Network Master Flex have been designed from the ground up to optimize test time and minimize human error; addition of these two new features extends the strength of current features, such as five-screen set-up to results, and SEEK one-button testing.



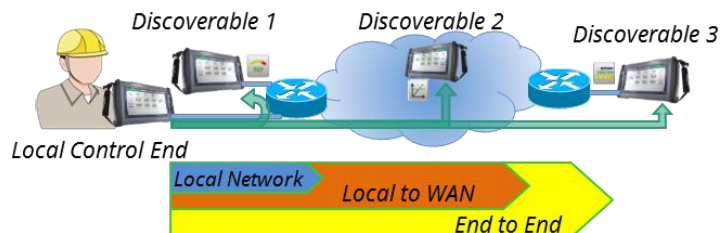
3. Auto Discovery Feature

3.1 Objective

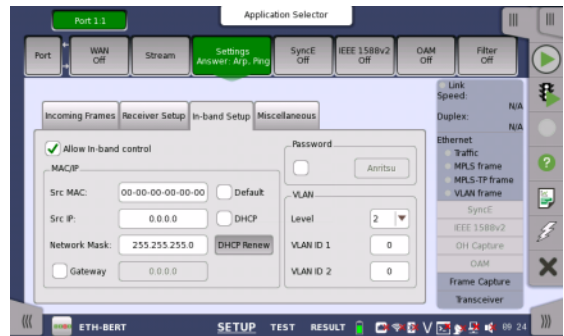
The Auto Discovery feature allows a local Network Master Pro or Network Master Flex user to discover other remote Network Master Pro and Network Master Flex units on the network to complete testing. The local user can manage multiple testers remotely without a dedicated network connection.

3.2 How Auto Discovery Works

The ability to discover other Network Master Pro and Network Master Flex units on both Layer 2 (Data Link or MAC layer) and Layer 3 (Network or IP layer) is important to allow seamless connectivity over any network under test via the Network Master Pro or Network Master Flex test port. When looking for Network Master Pro or Network Master Flex units on the same network, a multicast request is sent enquiring about the status of all other units on the network. When searching for other Network Master Pro or Network Master Flex units inside or outside the local network, the local user can configure the network address mask to check for other Network Master Pro or Network Master Flex units and obtain their status.



After discovery across the network, the local user can configure the remote Network Master Pro or Network Master Flex settings as necessary for Y.1564, RFC2544 (Local Remote mode), BERT Reflector, and other tests, as well as for RFC6349 (Client Server mode) tests. The technician at the local end can fully manage all test aspects from a single local Network Master Pro or Network Master Flex, which not only simplifies testing but—more importantly—minimizes possible set-up errors and on-site time for both technicians at the local and remote ends. This is especially true for the technician at the remote end; after the discovered unit's test port is connected and configured for In-Band Control, other tasks can be performed.



Configuring a discoverable unit is as simple as ticking a box; if required, the remote unit will auto-configure via DHCP based on the network IP settings, or the remote technician can input required details manually. It is also possible to set a remote-control password for each unit, ensuring only authorized personnel have control.

4. In-Band Control

4.1 Objective

The In-Band Control feature works in tandem with the Auto Discover feature to deliver flexible and seamless control by just one field technician over key Ethernet tests.

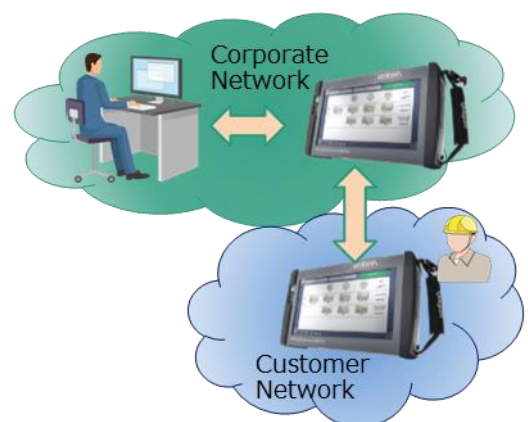
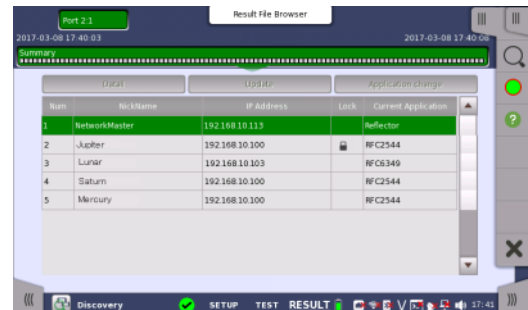
4.2 How In-Band Control Works

The Network Master Pro or Network Master Flex Auto Discovery application allows the local user to see all units that can be connected to as well as the current configuration. The local technician can connect to the remote unit from within the discovery mode and can update the remote unit details, including configured test as well as MAC, VLAN, and IP address settings.

After the local user selects the remote unit to update, that unit reconfigures itself as a remote unit (for Y.1564 or RFC2544 tests), as a slave unit (for RFC6349 tests), or as a Reflector for BERT tests.

Combining Anritsu's free MX10001A PC software with the In-Band control feature offers even greater flexibility and support; experienced technicians and engineers can provide direct support from their desktop PC to field technicians without access to the corporate network. Direct assistance and support for any field technician minimizes downtime and training times.

The engineer at the local end simply adjusts the remote configuration from the local tester to complete testing based on requirements.



- For RFC2544 testing, the remote far end is connected as a remote unit in End-to-End mode, supporting independent two-way throughput testing. The remote far end can also be configured as a reflector for RFC2544 tests.
- At Y.1564 testing, the remote far end is connected as the remote unit in the One-Way Test mode, allowing independent two-way throughput testing. The far end can also be configured as a reflector for Y.1564 tests.
- At RFC6349 testing, the remote far end is configured as a slave unit, allowing the local technician to complete required settings from the local end.

- Configuring the far end as a reflector supports completion of BERT, Mon/Gen, and Multi-Stream tests.

5. Conclusion

The Network Master Pro and Network Master Flex GUI has been designed with simplicity and usability at its core. Market-leading functions, such as the five-window display (ensuring technician always has direct access to any settings), SEEK (to automate any task or multiple tests), and PC software (for control/configuration/report creation) allow the technician to complete the job quickly and accurately. Addition of these Auto Discovery and In-Band Control features ensures operators and contractors can optimize manpower while minimizing re-work and network down times.

The all-In-one Network Master Pro and Network Master Flex test solutions are ideal for engineers of any experience level who want to get the job done right, first time.

• United States

Anritsu Company

1155 East Collins Blvd., Suite 100, Richardson,
TX 75081, U.S.A.
Toll Free: 1-800-267-4878
Phone: +1-972-644-1777
Fax: +1-972-671-1877

• Canada

Anritsu Electronics Ltd.

700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

• Brazil

Anritsu Elettronica Ltda.

Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - Sao Paulo - SP
Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

• Mexico

Anritsu Company, S.A. de C.V.

Av. Ejército Nacional No. 579 Piso 9, Col. Granada
11520 México, D.F., México
Phone: +52-55-1101-2370
Fax: +52-55-5254-3147

• United Kingdom

Anritsu EMEA Ltd.

200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• France

Anritsu S.A.

12 avenue du Québec, Bâtiment Iris 1- Silic 612,
91140 VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

• Germany

Anritsu GmbH

Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

• Italy

Anritsu S.r.l.

Via Elio Vittorini 129, 00144 Roma, Italy
Phone: +39-6-509-9711
Fax: +39-6-502-2425

• Sweden

Anritsu AB

Kistagången 20B, 164 40 KISTA, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

• Finland

Anritsu AB

Teknobulevardi 3-5, FI-01530 VANTAA, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

• Denmark

Anritsu A/S

Torveporten 2, 2500 Valby, Denmark
Phone: +45-7211-2200
Fax: +45-7211-2210

• Russia

Anritsu EMEA Ltd.

Representation Office in Russia

Tverskaya str. 16/2, bld. 1, 7th floor.
Moscow, 125009, Russia
Phone: +7-495-363-1694
Fax: +7-495-935-8962

• Spain

Anritsu EMEA Ltd.

Representation Office in Spain

Edificio Cuzco IV, Po. de la Castellana, 141, Pta. 5
28046, Madrid, Spain
Phone: +34-915-726-761
Fax: +34-915-726-621

• United Arab Emirates

Anritsu EMEA Ltd.

Dubai Liaison Office

902, Aurora Tower,
P O Box: 500311 - Dubai Internet City
Dubai, United Arab Emirates
Phone: +971-4-3758479
Fax: +971-4-4249036

• India

Anritsu India Private Limited

2nd & 3rd Floor, #837/1, Binnamangla 1st Stage,
Indiranagar, 100ft Road, Bangalore - 560038, India
Phone: +91-80-4058-1300
Fax: +91-80-4058-1301

• Singapore

Anritsu Pte. Ltd.

11 Chang Charn Road, #04-01, Shriro House
Singapore 159640
Phone: +65-6282-2400
Fax: +65-6282-2533

• P.R. China (Shanghai)

Anritsu (China) Co., Ltd.

Room 2701-2705, Tower A,
New Caohejing International Business Center
No. 391 Gui Ping Road Shanghai, 200233, P.R. China
Phone: +86-21-6237-0898
Fax: +86-21-6237-0899

• P.R. China (Hong Kong)

Anritsu Company Ltd.

Unit 1006-7, 10/F., Greenfield Tower, Concordia Plaza,
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong, P.R. China
Phone: +852-2301-4980
Fax: +852-2301-3545

• Japan

Anritsu Corporation

8-5, Tamura-cho, Atsugi-shi, Kanagawa, 243-0016 Japan
Phone: +81-46-296-6509
Fax: +81-46-225-8352

• Korea

Anritsu Corporation, Ltd.

5FL, 235 Pangyoyeok-ro, Bundang-gu, Seongnam-si,
Gyeonggi-do, 13494 Korea
Phone: +82-31-696-7750
Fax: +82-31-696-7751

• Australia

Anritsu Pty. Ltd.

Unit 20, 21-35 Ricketts Road,
Mount Waverley, Victoria 3149, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• Taiwan

Anritsu Company Inc.

7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

