The rapid spread of broadband networks is leading to a new era of IP-network based services. One of the most important services is IP-TV using IP multicast technology. Anritsu’s MD1230B and MP1590B are general-purpose IP testers that also support QoS evaluation of multicast networks.

1. Background
With the rapid growth of broadband network environments, subscribers and providers are increasingly demanding and providing rich-content services including graphics, Voice, and video. However, because provision of rich content requires transmission of very large data amounts, there is concern about the loads on servers supplying the content and on the distribution networks. In video streaming services typified by IP-TV, the increasing numbers of subscribers and rising server loads mean that the old unicasting technology (one stream to one subscriber) is no longer adequate. As a result, more providers are using multicasting technology (one stream to many subscribers) as a way of reducing loads on networks and servers.

Combining Anritsu’s MD1230B and MP1590B with the MU120131A 10/100/1000M Ethernet Module and the MU120132A Gigabit Ethernet Module offers providers the ideal solution for verifying and evaluating multicasting networks.

2. Applications
Frequent channel switching (Zapping) on IP-TV causes extremely high loads on routers and the network. Zapping verification is a very important item in assuring and evaluating the quality of multicast services.

The MD1230B and MP1590B have the following three functions for supporting multicast service quality assurance and evaluation.

- **Multicast Stream Generation Function**
  This generates multiple channel streams (multiple multicast addresses).

- **Multiflow Monitoring Function and Capture/Decode Function**
  This monitors each channel flow (each multicast address) and decodes the captured packets (multicast protocol).
IGMP/MLD Host Emulation Function
This emulates multiple hosts. The channel switching (Zapping) load is generated using the Join/Leave function.
*1 Requires IPv6 expansion option

QoS Assurance
This checks the impact of packet loss on quality of service (QoS).

3. Product Features
- Supports IPv4/IPv6 multicasting
- Supports IGMPV3/MLDv2 protocol
- Multiple virtual host operation supporting verification without previous need for large number of terminals, cutting costs
- Automated virtual host increase/decrease and channel changing for easy creation of high load conditions that are hard to create intentionally on an in-service network

4. Summary
The MD1230B and MP1590B simulate a server and connected hosts to verify and evaluate the multicast network before the start of service. Testing that previously required large amounts of test equipment and personnel can now be done quickly and at low cost, offering providers the ideal solution for assuring multicast QoS.

5. Ordering Information

---

Measurement Example
This example shows how to verify and evaluate performance under a high load environment caused by channel switching (Zapping).

Switching Time Measurement
This measures the time from switching the channel until the video is streamed.

Delay Time Measurement
This measures the delay time under high load conditions caused by Zapping.