



**Tekron Communication Systems**

# RMS-4EQ

## EDGE QAM CHANNEL REDUNDANCY SWITCHING STATION

### HUB SITE



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## Edge QAM Hub Redundancy

With the deployment of **Edge QAM** Technology and **DOCSIS 3.1** platform for the distribution & delivery of digital Broadcast and Narrowcast feeds in HUB sites, Tekron is now offering dedicated model for a complete Monitoring, Alarm & Redundancy of Broadcast Edge QAM channel feed and Narrowcast (DOCSIS 3.1) feed, for the protection of the CATV distribution system critical infrastructure services (VOD, SDV, Internet, ...etc).

The RMS-2RC automatic switching product family was initially designed for the redundancy of RF-Pilot channels to protect the CATV distribution system critical infrastructure in Headend and Hub Sites, herein listed in Tekron CATV redundancy switching products page below. They offered a universal redundancy switching design approach that is fully agile for use for different scenarios and applications, a fully agile design intended to facilitate and simplify the logistics of large deployment of RF-Pilot redundancy by MSO operators, and with the capability for future redeployment of the RMS redundancy switches.

The RMS was designed with the capability of monitoring individually multiple RF-Pilot channels (both analog & digital QAM) with precision and high stability from any CATV RF-Broadband feed, with alarm & redundancy Threshold setting different for each switch over a wide RF-level range of operation.

The RMS-4EQ monitors the combined Edge QAM channels output level, to detect individual QAM channel failure, as well as RF-Pilot channel(s) and the feed RF-Broadband power level for redundancy switching to a backup input receiving identical QAM channel alignment.

The RMS-4EQT provides the same Redundancy to Edge QAM-channel feed as above model, but it incorporates a second redundant switch that monitors and provide redundancy to DOCSIS 3.1 Narrowcast RF-feed.

The RMS-2RC & RMS-4EQ family of RF redundancy switching products feature:

- High performance RF specifications for seamless, transparent, and highly reliable operation.
- Broadband passive switch 5 MHz to 2GHz with minimal insertion loss, excellent RF isolation between inputs and the return loss throughout the Band to 1.2 GHz and beyond.
- Remote & easily accessible over TCP/IP Networks for status monitoring, alarm and switch override & control in emergency from Web-Interface GUI, SNMP-trap & Email alarms and SNMP protocol for integration with CATV operators NOC Network management system.

Tekron RMS can be supplied with AC (85-235 V) or NEG48V-DC powering, with Single Supply, or Dual-Redundant supply operation with monitoring & alarm of each power supply.

Tekron Communication manufactures a complete line of RMS & RSS products for signal monitoring & automatic switching for redundancy of CATV Broadband & LNB/L-Band feeds, individual RF analog & QAM channels, digital ASI/SDI feeds, and Video & audio/4.5MHz, as well as embedded scheduled switching for remote Blackout & Local access applications, and the TRC-series for remote site passive infrastructure monitoring & control.

## Features & Applications

- RMS-4EQ is designed to monitor Edge QAM Broadcast feed & QAM-channels individually in feed, including RF-Pilot channels to provide redundancy and protection.
  - RMS-4EQT is designed to monitor and provide redundancy to the Narrowcast feed, in addition to Broadcast feed redundancy.
  - The switch backup input feed carries identical Edge QAM channel alignment or Services. The backup input is independently monitored for alarm and to prevent blind switching.
  - Remote setting from Web-GUI of active QAM Channel in Broadcast input feed, and RF-Pilot channel(s) identified that will cause switch-over in event of their failure on the main input.
  - Wide RF-level operating range, with remote switch parameter settings that add flexibility to adapt the RMS to suit different environments.
  - Remote status monitoring, alarm and switch manual override/control are accessible over TCP/IP Networks via SNMP protocol and from Web-GUI (embedded Webserver), with automatic alarm via SNMP trap & Email.
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- RF input Channel Selection: The RMS-2RC is frequency agile, with remote Pilot channel selection capability of the main input over the Network from the Webpage.
  - RF sensing & Threshold switch adjustment: The main and backup input Threshold levels, at which the RMS automatically switches to the backup input or return to the main input are front panel and separately adjustable.
  - Hysteresis level adjustment: The Hysteresis approximate value in dB can be set remotely over the Network from the Webpage. This is a value added above the Threshold level setting at which the RMS will automatically switch back to the main input.
  - Prevent switching to backup input: Automatic switching to backup input is prevented when it is below its Threshold level, unless remotely disabled from the Webpage or via SNMP.
  - Disabling switch back to main input: The switch automatic return can be remotely disabled (via Webpage or via SNMP). This feature is intended to protect against excessive switching in the event of an intermittent problem or severe level fluctuation of the main input feed. This maintains the switch in the backup position until the problem is resolved.