RMS-2RC Dual RF-Pilot Channel Automatic Switch

The RMS-2RC is a frequency agile channel monitoring and redundancy Broadband switching station, which incorporates 2-independent automatic switches, offered also with single switch. The RMS-2RC1 single switch station has identical features and performance as the RMS-2RC.

They are both primarily designed to provide redundancy to RF/AGC-Pilot (Analog & QAM) Channels in Headend & Hub site applications. The desired RF-pilot channel to be monitored is selected from the Web-page. With its input wide level range Threshold adjustment, it can be used to monitor the RF-pilot channel at the modulator output and from within the CATV Broadband feed in Hub applications.

In their standard configuration, the RMS-2RC & RMS2RC-1 are supplied with AC (85-235 V) power supply input. Optionally they are available for NEG48V-DC input supply operation.

The RMS-2RC incorporates two independent automatic A/B switches in 1-RU chassis, to provide independent but simultaneous monitoring & redundancy of two RF-pilot channels.

 The RMS-2RC monitors the selected analog or QAM RF-pilot channel for automatic switchover (with alarm over IP-Network) to the backup input when the RF level of the main input drops below its threshold setting, with automatic return when the main input is restored above the Threshold level setting with built-in (remotely selectable) Hysteresis. The backup input level is also monitored to prevent blind switching, with alarming capability when level drops below Threshold level setting.

The RMS-2RC features Broadband passive switching 5 MHz to 1GHz with minimal insertion loss, excellent RF isolation between inputs and the return loss throughout the Band to 1GHz.

The RMS-2RC is equipped with front-panel switch override capability as well as LED indication of the switch position and RF-inputs monitor status.

A back-chassis Ethernet TCP/IP port is available for remote monitoring, alarm, switch control and parameters setting. It incorporates SNMP protocol capabilities for "Network Operation Center", with E-mail text-message Alert & embedded Web-Server that allows regional/local technical personal remote access for status monitoring & switch override/control from the Web-page using any Web browser and to receive email alarms. SNMP-traps and Email alert messages are dynamic in that they include monitored input names as they have been set from the Web-page.

For RF-Broadband & Split-Band redundancy the models RSS-2R, RSS-2D or RSS-6T are recommended for applications such as Hub site fiber-feed transport redundancy, with RSS-3T for the redundancy of Broadband amplifiers & Buffers in the Headend.

GENERAL FEATURES & OPTIONS:

Fail-safe during power loss: On power loss to the unit, the RMS-2RC will pass the RF pilot channel or Broadband feed of the main input.

Internal RF Termination: Unselected input is internally 75-ohm terminated.

Automatic Switching: Backup input is monitored to prevent blind switching to that input and to send alarms when its level drops below the Threshold setting.

Local status & control: Front panel toggle switch to override & manually switch control, with separate LED's to indicate the main & backup input status, switch position and switching (automatic or manual) mode.

Remote Status & Control: Remote status monitoring, alarm and switch manual control over TCP/IP Networks via SNMP protocol and from the (embedded Web-server) Web-page. Optional back-chassis relay & contact closure are can be installed to provide status (1-formC relay) and switch control via contact closure and interface with existing Telemetry system at the site, with dial-in DTMF phone switch control.

NEGATIVE 48Volt Supply: Optional NEG 48V-DC internal supply available.

INPUT SWITCHING & FEATURES:

RF input Channel Selection: The RMS-2RC is frequency agile, with remote Pilot channel selection capability of the main input over IP from the Web-page.

RF sensing & Threshold switch adjustment: The main and backup input Threshold levels, at which the RMS automatically switches to the backup input and return to the main input are front panel and separately adjustable.

Hysteresis level adjustment: The Hysteresis approximate value in dB can be changed remotely over IP from the Web-page. This the value that separates the Threshold level below which unit automatically switches to backup input and kevel at which switch returns to the main input.

Prevent switching to backup input: Automatic switching to the backup input is prevented while it is below its Threshold level setting, unless this feature is remotely disabled from the Web-page or via SNMP.

Disabling switch back to main input: The automatic return of the switch can be disabled remotely (via Web-page, SNMP or dial-up DTMF). This feature is intended to protect against excessive switching in the event of an intermittent problem of the input feed. It maintains the switch in the backup position while the technical staff investigates and resolves the problem.
By default, the RMS-2RC automatically switches to the back-up input when the main input level drops below to its pre-set (threshold) level, with automatic return when main input returns to level above that of Threshold & Hysteresis.

Manual switch: A front panel 3-way toggle switch is available to override the switch automatic operation and select the main or backup inputs. Front panel LED indicates input selection. The switch remote control (from Web-page, via SNMP or by DTFM) is designed to also override the front panel toggle switch.

SPECIFICATIONS

Automatic Switch:	**Two independent 2X1 RF-Broadband switch modules (75-Ohm impedance with F-type connectors)**
Frequency Band:	**5 MHz to 1002 MHz**
Operation Level:	**+30dBmv to +60dBmv**
Insertion Loss:	**1.0 dB +/- 0.25dB from 5MHz to 1002 MHz**
Return Loss:	**20dB minimum Inputs & Output 5-1002MHz** **24dB minimum RF-Pilot Band 550-650MHz**
In-Out Isolation:	**70dB minimum (Typical 75dB) 5-1002MHz**
Sensing Circuitry:	**Monitor selected channel RF level of main input** **Monitor RF-Broadband level of backup input**
Channel Selection:	**Remote setting of CATV channels 2 to 137**
Monitor Threshold:	**Separate front panel adjustment for main & backup inputs** **Input feed drop below Threshold level triggers** **alarm and automatic switching**
Hysteresis:	**Remote setting of dB-value added to Threshold, above which switch returns to main input and intended as protection against switch flutter during severe RF level fluctuation (Setting in 0.1dB steps 0.0 to 99.9 dB)**
Switch Delays:	**Remote delay setting before switching to backup input and return to main input (Separate setting 0–999 seconds)**
Fail-safe:	**Switch back and/or pass main input on power loss**
Switch Control:	**Override automatic switch operation for manual control:** **- Local front toggle switch override and switch control** **- Remotely via Web-page & SNMP from TCP/IP port**
Monitor & Alarm:	**Status indication of switch position and input levels:** **- Front panel status LED indication** **- TCP/IP Network SNMP alarm & status monitoring** **- Email alarm of status changes** **- Web-page status monitoring and alarm settings**
Remote settings:	**Remote internal switch setting from the Web-page:** **- Set RF-Pilot channel to be monitored for each switch** **- Prevent automatic return to main input automatically** **- Ignore backup input status during automatic switching** **- Set switch delays and Hysteresis** **- IP-address and alarm SNMP & Email settings**
Chassis:	**1U Rack-mount 19" high X 9.75" deep chassis (Weight 10 lbs)**
Power Supply:	**85-235 Volt-AC (60/50 Hz) or NEG 48V-DC (Optional)** **Option: Redundant Power Supply & alarm (DRP-3)** **Power consumption: 8Watt Max. (6Watt for RMS-2RC1)**

AUTOMATIC SWITCHING PRODUCTS

TCP/IP Network remote monitor Alarm and Control capabilities

RMS-RSS monitoring & automatic switching products incorporate TCP-IP & RS-232 port for remote monitor/alarm & controls over IP-Networks and dial-up line.

ASI-SDI-SMPTE310M Digital Automatic Redundancy Switch

RSS1-ASI DVB-ASI Dual-Output (1-RU) 2X1 Automatic Switch

RSS-2ASI ASI/SDI/SMPTE Channel Dual-switch Automatic Switching (1-RU) Station

RSS-6ASI ASI/SDI/SMPTE Channel Six-switch Automatic Switching (2-RU) Station

CATV BROADBAND & Channel Redundancy Switching

RSS-2R   CATV 1GHz Broadband & QAM channel Automatic Redundancy Switch

RSS-2D   CATV 1GHz Split-Band Automatic Redundancy Switch

RSS-3T   CATV 1GHz Broadband Triple-switch Automatic Switching (1-RU) Station

RSS2-T   CATV 1GHz Broadband dual-switch Automatic Switching (1-RU) Station

RSS6-T   CATV 1GHz Broadband six-switch Automatic Switching (2-RU) Station

RMS-2RC Frequency-Agile Dual AGC RF-Pilot Channel Automatic Redundancy Switch

RMS-2V   Frequency agile TV channel Signal Monitor/alarm and Control station

Satellite LNB/L-Band Automatic Redundancy Switch

RSS-2L   L-Band/LNB Dual-switch Automatic Redundancy Switching (1-RU) Station

RSS-6L   L-Band/LNB Six-switch Automatic Redundancy Switching (2-RU) Station

Digital & Analog Video/Audio Channel Automatic Switch

RSS-2B   Video/Stereo-audio +SAP (3X1) Digital/analog Channel Automatic Switch

RSS-2VAS Video/Stereo-audio (3X1) Digital Channel Automatic Redundancy Switch

RSS-2VD   Video/Stereo-audio (3X1) Digital Channel Automatic Redundancy Switch

RSS-4Eng Video/Stereo-audio (5X1) Digital/analog Channel Automatic Switch

RSS-2AS   Stereo-audio (3X1) Automatic Redundancy Switch

Digital & Analog Video/Audio Channel Automatic Switching Stations

RSS-2AV   Video/Stereo-audio +SAP Dual-switch Automatic Switching (1-RU) Station

RSS-6AV   Video/Stereo-audio +SAP Six-switch Automatic Switching (2-RU) Station

RSS-2B4.5 Video/4.5MHz-audio Dual-switch Automatic Switching (1-RU) Station

RSS-3RV   Hybrid Video-Monitor & RF-Channel three-switch Automatic Switch Station