R&S®IPGW

R&S®RelayCaster Encoder

Product Flyer
Version 01.01

ROHDE&SCHWARZ

Make ideas real

AT A GLANCE

R&S®RelayCaster can greatly improve reliability and data rates when contributing and distributing live content and help you efficiently solve packet loss issues.

Application areas
► Optimizing distribution and contribution of live content
► Improving reliability and increasing bandwidth on long distance internet links
► Fixing packet loss up to 50 %
► Replacing expensive satellite links and CDN contracts

R&S®RelayCaster can replace expensive satellite links or contracts with CDN service providers. Unlike these services, R&S®RelayCaster is not limited to certain regions or data centers. R&S®RelayCaster enables you to distribute your content across any distance to any place that is reachable by internet infrastructure.

Optional encryption protects the streams between all transmitters and receivers. The R&S®RelayCaster setup wizard offers user-friendly stream configuration. Integrated monitoring features ensure stream health.

Being compatible with existing gateways, transcoders, conditional access systems, streaming servers and set-top boxes, R&S®RelayCaster appliances can be seamlessly integrated into your existing infrastructure. R&S®RelayCaster input and output streams support standard compliant protocols.

R&S®RelayCaster Encoder is a 19-inch rackmountable server appliance that combines SDI or HDMI encoding with R&S®RelayCaster contribution.
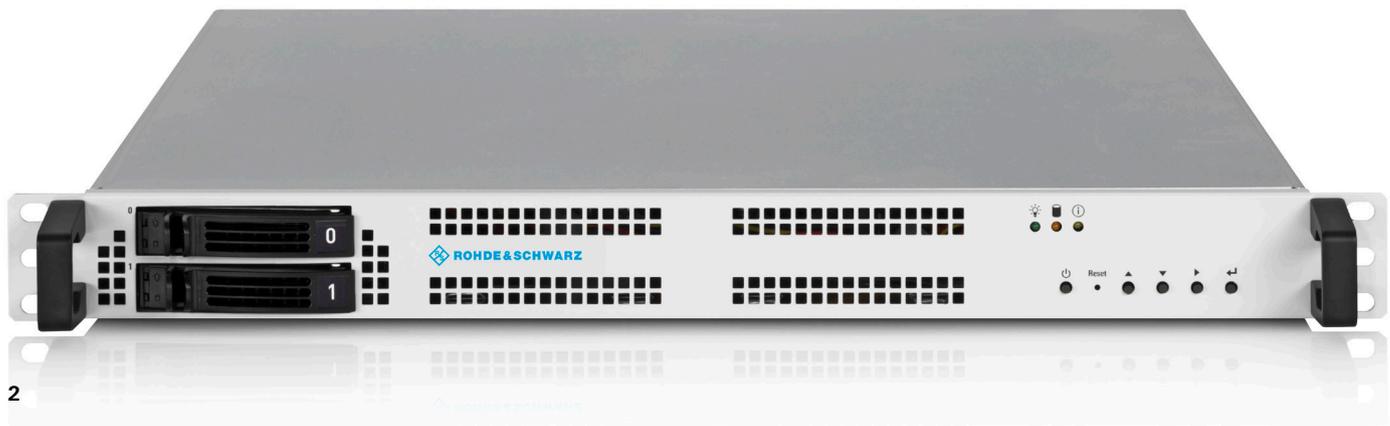
BENEFITS AND KEY FEATURES

Using the R&S®RelayCaster streaming protocol (RCSP) as the streaming protocol between two R&S®RelayCaster servers optimizes transmission of live IP streams to remote company sites, data centers or networks.

Compared to streaming with UDP or RTP, RCSP greatly reduces packet loss. Compared to content distribution with TCP or higher-level protocols such as FTP or HTTP, RCSP offers much higher bandwidths for transmission of live content over lossy long distance links.

This approach can be scaled. You can create your own content delivery network (CDN) of R&S®RelayCaster servers. Live IP streams from a central data center are redistributed to various intermediate and terminating data centers that are spread around the world.

Over-the-top (OTT) streaming, adaptive bitrate streaming (ABR) and R&S®RelayCaster work together. In each data center, streams received by R&S®RelayCaster are forwarded to OTT streaming servers providing streams to end user devices that are 'nearby' (in terms of internet distance). R&S®RelayCaster helps 'push' streams close to end users.

SDI or HDMI

Internet

R&S®RelayCaster
streaming protocol
RCSP

R&S®RelayCaster

R&S®RelayCaster

Live IP streams

Unicast or multicast
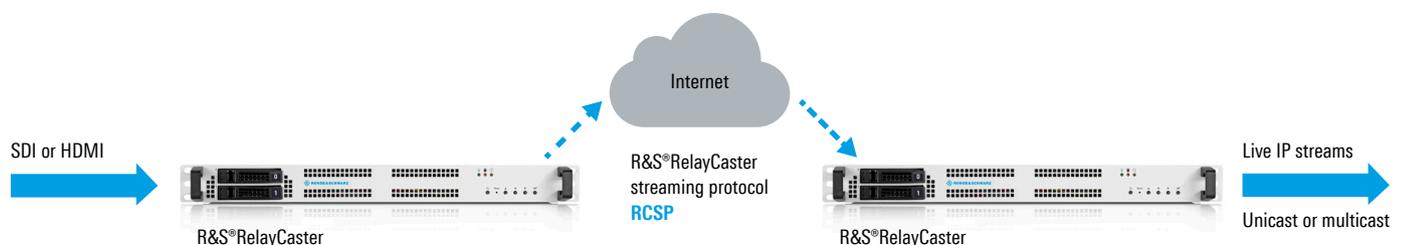
Encoder

- ► Video encoding H.264/AVC or MPEG-2 video
- ► Adaptive encoding
  - – Seamless adaptation of encoding bitrate for available bandwidth
- ► Profiles and levels
  - – H.264/AVC high, main, constrained level: 3, 3.1, 3.2, 4, 4.1
  - – MPEG-2 video high, main, simple level: high, high 1440, main
- ► Video format: 525i, 625i, 720p, 1080i,1080p up to p30
- ► Sample format: 8-bit 4:2:0
- ► Encoded bitrate: 256 kbps to 25 Mbps
- ► Audio encoding: AAC-LC, HE-AAC, MPEG-1 layer II, passthrough
- ► A/V input HD-SDI (75-Ω BNC) or HDMI 1.4a

IP streaming

- ► Supported Ethernet interfaces
  - – 1 × Mgmt (management and streaming)
  - – 3 × GbE (streaming only)
- ► MPEG transport stream (MPEG-TS)
  - – MPEG single program transport stream (MPEG-SPTS)
  - – MPEG multi program transport stream (MPEG-MPTS)
  - – Support of common audio/video codecs
- ► Protocols
  - – Unicast, multicast and broadcast
  - – UDP
  - – RTP over UDP
  - – R&S®RelayCaster streaming protocol (RCSP)
  - – Secure reliable transmission (SRT) (open source)
- ► Fixes packet loss rate up to 50 %
- ► One stream
- ► Total bandwidth: up to 25 Mbps

Stream protection and monitoring

- ► Encryption and decryption with AES: 128, 192 and 256 bits
- ► Option: MPEG-TS continuity count check
- ► Option: stream monitoring in line with ETR 101 290 priority 1, 2, 3
- ► Option: link redundancy with two parallel internet links and seamless failover

Setup and administration

- ► Linux system
- ► Responsive web interface (http/https)
- ► Setup wizard: automatic setup of streams
- ► ssh
- ► Free software developer kit (SDK) for XML-RPC and PHP
- ► Option available from partner: integration of Skyline DataMiner

Hardware

- ► 1 × SSD (hot swap carriers)
  - – Option: redundant disk array (RAID1, 2 × SSD)
- ► VGA port, keyboard port and mouse port for KVM
- ► Height × width × depth: 43 mm × 426 mm × 495 mm (1.7 in × 16.8 in × 19.5 in)
- ► 1 HU, 19'' rackmountable
- ► Weight: 9 kg
- ► Input voltage: 100 V to 240 V AC, 50-60 Hz
- ► Power consumption: < 4 W (standby), 45 W (idle) to 55 W (loaded)
  - – Option: redundant power supply

3608107532

3608.1075.32 01.01 PDP 1 en