# R&S®TSStream
# Multi-TS Streaming Software
# Streaming of MPEG transport streams over IP

R&S®TSStream is used to play multiple MPEG transport streams simultaneously over a single IP interface. All transport streams are output as a seamless loop. R&S®TSStream is ideal for feeding data into the R&S®CLG and R&S®SLG multichannel TV signal generators and for testing IPTV equipment.

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# At a glance

The R&S®TSStream multi-TS streaming software streams a number of MPEG transport stream files simultaneously over a single IP interface. The individual transport streams result in a high overall bit rate. To make the streams available on a standard PC, the R&S®TSStream software does not play the transport stream files directly from the hard disk but first loads them into the RAM. The maximum number and length of the transport streams depends solely on the PC's available RAM.

For uninterrupted operation, TV receivers require a continuous signal. This is why R&S®TSStream plays out all transport stream files at the MPEG level in a seamless loop. The PCR, PTS, DTS and continuity counter parameters are continuously restamped. When a transport stream file contains a seamless elementary stream, the receiver even delivers an interruption-free video and audio signal.

R&S®TSStream is especially suitable for feeding data into the R&S®CLG cable load generator and R&S®SLG satellite load generator. This makes it possible to reproducibly simulate real-world cable TV network configurations and satellite transponder assignments in the lab. R&S®TSStream can also be used as a signal source to test IPTV equipment.

R&S®TSStream features an intuitive graphical user interface. Status, memory occupancy and processor load are continuously displayed. Drag & drop operation makes it easier to work with a large number of transport streams. A special feature is the import function for configuration files from the R&S®CLG and R&S®SLG, which quickly and easily adopts these instruments' settings in R&S®TSStream.

## Key facts
- Total streaming bit rate ≥ 5 Gbit/s
- More than 128 transport streams simultaneously
- All MPEG transport stream formats

## Benefits and key features
### Streaming of multiple MPEG transport streams over IP
- Feeding of data into the R&S®CLG and the R&S®SLG
- Simulation of real-world network configurations in the lab
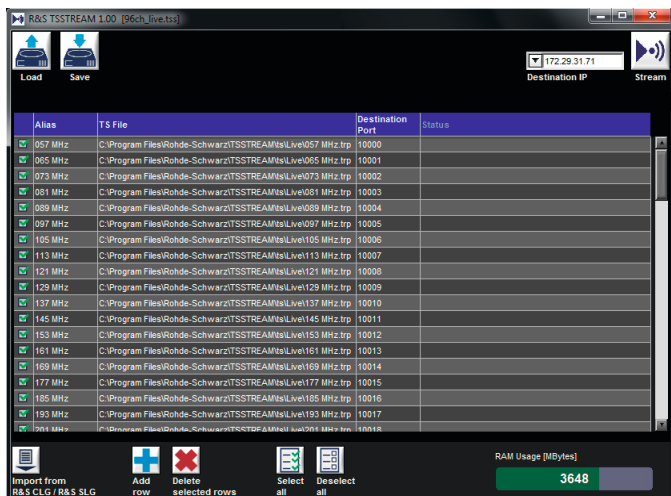- Testing and stress testing of IPTV equipment

### Seamless playout at the MPEG level
- Interruption-free receiver operation by restamping PCR, PTS, DTS and continuity counter in all transport streams
- Channel scan function test using transport streams with NIT
- Service-level receiver tests using transport streams with continuous elementary stream

### Convenient operation thanks to straightforward graphical user interface
- Overview of current transport stream status, total streaming bit rate, memory occupancy and processor load
- Intuitive drag & drop operation
- Import of R&S®CLG/R&S®SLG configuration files



Configuration view.



Streaming view.

# Specifications in brief

| Specifications in brief | | |
|---|---|---|
| **Streaming parameters** | | |
| Output data rate | with Intel i7 3770 CPU | > 5.0 Gbit/s total data rate of all streams |
| | | > 1.7 Gbit/s per stream |
| Total available memory for TS files | | total available RAM minus 500 Mbyte system reserve |
| Size of input TS files and loop time of output streams | 32 Gbyte RAM and 96 output streams, all with different content | max. 328 Mbyte per TS file, yields 52 s loop time at 50 Mbit/s |
| | 32 Gbyte RAM and 96 output streams, all with identical content | max. 31.5 Gbyte per TS file, yields 84 min loop time at 50 Mbit/s |
| Streaming protocol | | MPEG TS over UDP/IP |
| Seamless loop at MPEG-2 TS level | for unencrypted TS | restamping of PCR, PTS, DTS and continuity counter |
| | for encrypted TS | restamping of continuity counter |
| TS packet length | input | 188 byte, 204 byte, 208 byte |
| | output | 188 byte |
| **System requirements** | | |
| Operating system | | Windows 7, 64 bit |
| CPU | | multicore recommended: Intel i7 3770 or later |
| RAM | | min. 1 Gbyte recommended: ≥ 8 Gbyte |
| Hard disk | | ≥ 30 Mbyte free memory |
| Display resolution | | min. 800 × 600 pixel SVGA, 256 colors |
| Ethernet interface | | network adapter matching the streaming target device |
| User rights | | administrator rights for installation |
| **License management** | | |
| Software licensing | | machine binding, portable to other PCs |
| 30-day demo license | | available on request |

# Ordering information

| Designation | Type | Order No. |
|---|---|---|
| Multi-TS Streaming Software | R&S®TSStream | 2116.8945.02 |
| **Recommended as accessory for the following Rohde & Schwarz instruments** | | |
| Cable Load Generator | R&S®CLG | 2116.9170.02 |
| Satellite Load Generator | R&S®SLG | 2116.9193.02 |

## Service that adds value

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

## About Rohde & Schwarz

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established more than 80 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

## Quality management and environmental management

Rohde & Schwarz is certified in line with the ISO 9001 and ISO 14001 management systems.

Certified Quality System
**ISO 9001**

Certified Quality System
**ISO 14001**

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