4T2 Portable

digital broadcast measurement receiver

Advanced Broadcast Components
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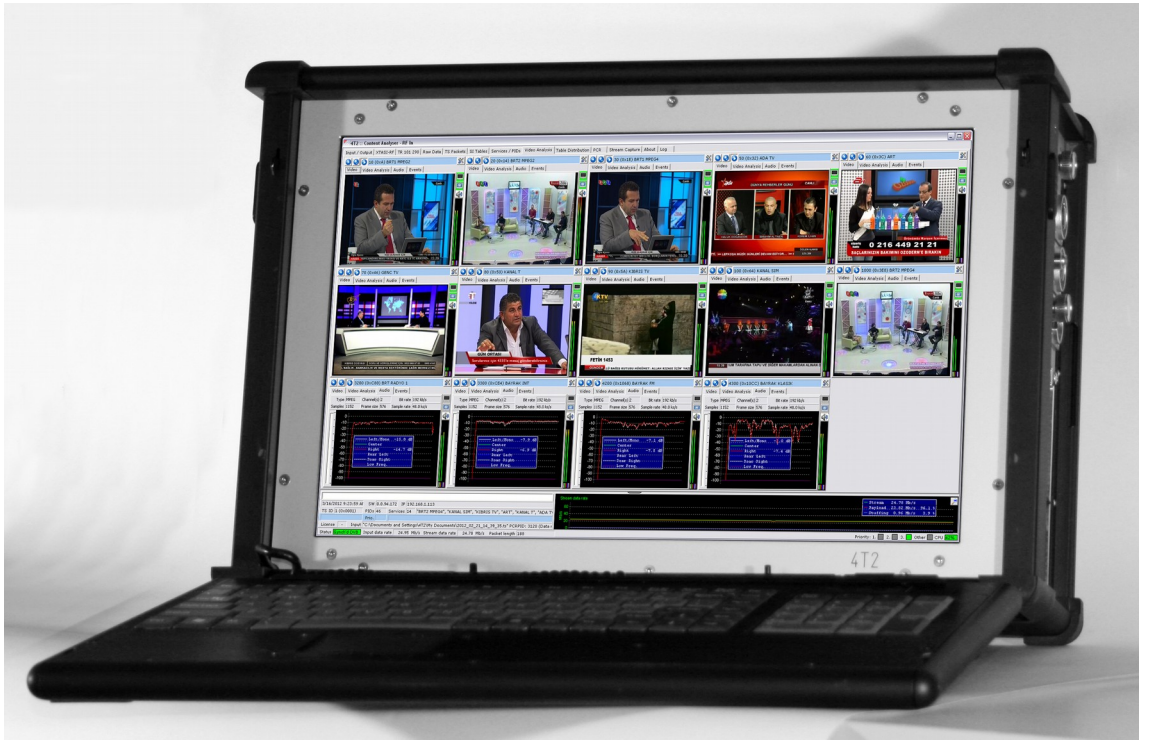
www.4T2.eu

4T2 Portable



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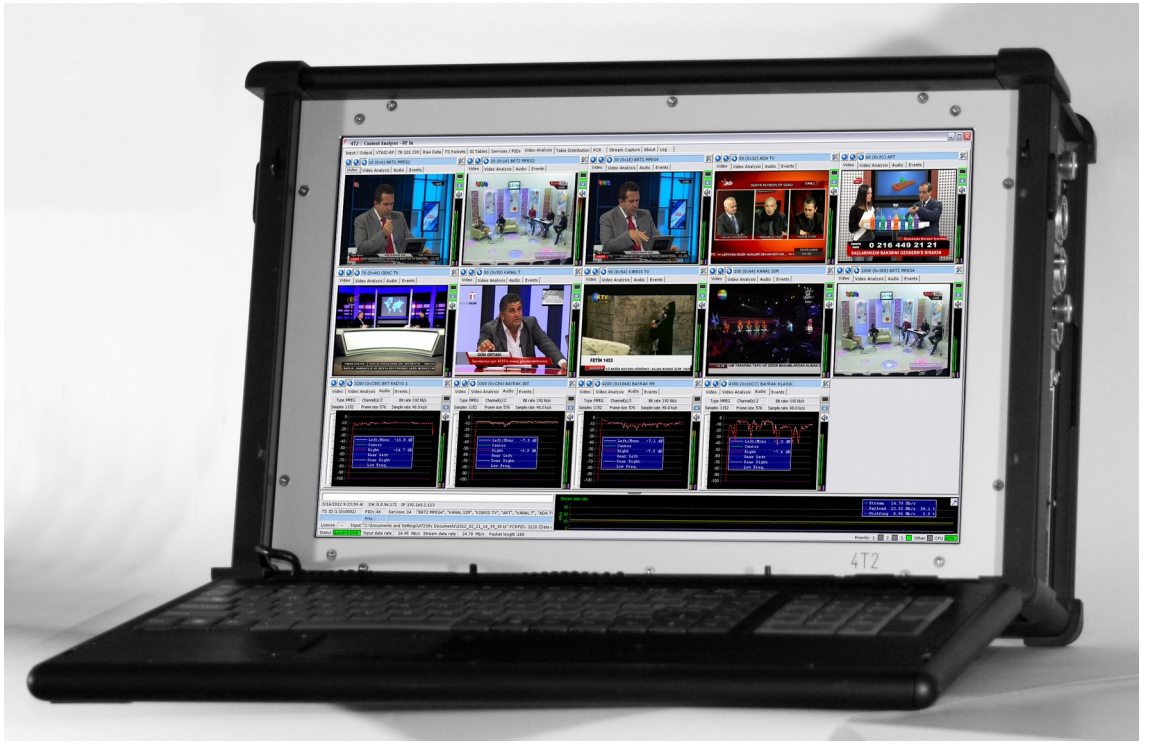


- Windows™ 10 64bit measurement platform
- robust aluminium housing
- portable 7.7 kg
- compact 40 x 30 x 15 cm
- six-core i7 CPU
- m2.e solid state drive
- high resolution 15.4“ monitor
- full size keyboard
- 4k HDMI output
- stereo speakers

4T2 Portable

- Gbit LAN-interface
  - UDP/RTP transport stream input
  - SNMP remote interface, instrument remote control
- ASI transport stream input
  - Content Analysis
- DVB-T/T2
  - RF interface measurements & Content Analysis
- DVB-S/S2
  - RF interface measurements & Content Analysis
- ASI transport stream playback or demodulator output

4T2 Portable

- 3rd generation expert functions
  - raw data menu with trigger functions for transport stream byte-level analysis
  - packet menu with trigger function for transport stream packet-level analysis
  - integrated report-generator function providing access to all measurement results
  - open interface to windows applications
  - multi-channel coverage on map display with key performance parameter analysis

4T2 Portable

- DVB-T2 MI analyser
  - on ASI and on IP input
- Transport Stream analyser with Multi-Viewer
  - SI-Tree, SI-table repetition, TR.101.290 1st, 2nd, 3rd priorities, Services & PIDs display, Data-rates display & graph, PCR-rate & Jitter, Black/Freeze detector, Audio mute, triggered capture, log-file
- H.262 SD/HD, H.264 SD/HD, and H.265 Ultra HD decoder on internal display and with 4k capable hdmi output
- DVB-T/T2 RF analyser with
  - Level, MER, EVM, bit errors
  - Constellation display, Impulse Response display, Spectrum display
- Quad channel coverage analyser

4T2 Portable coverage

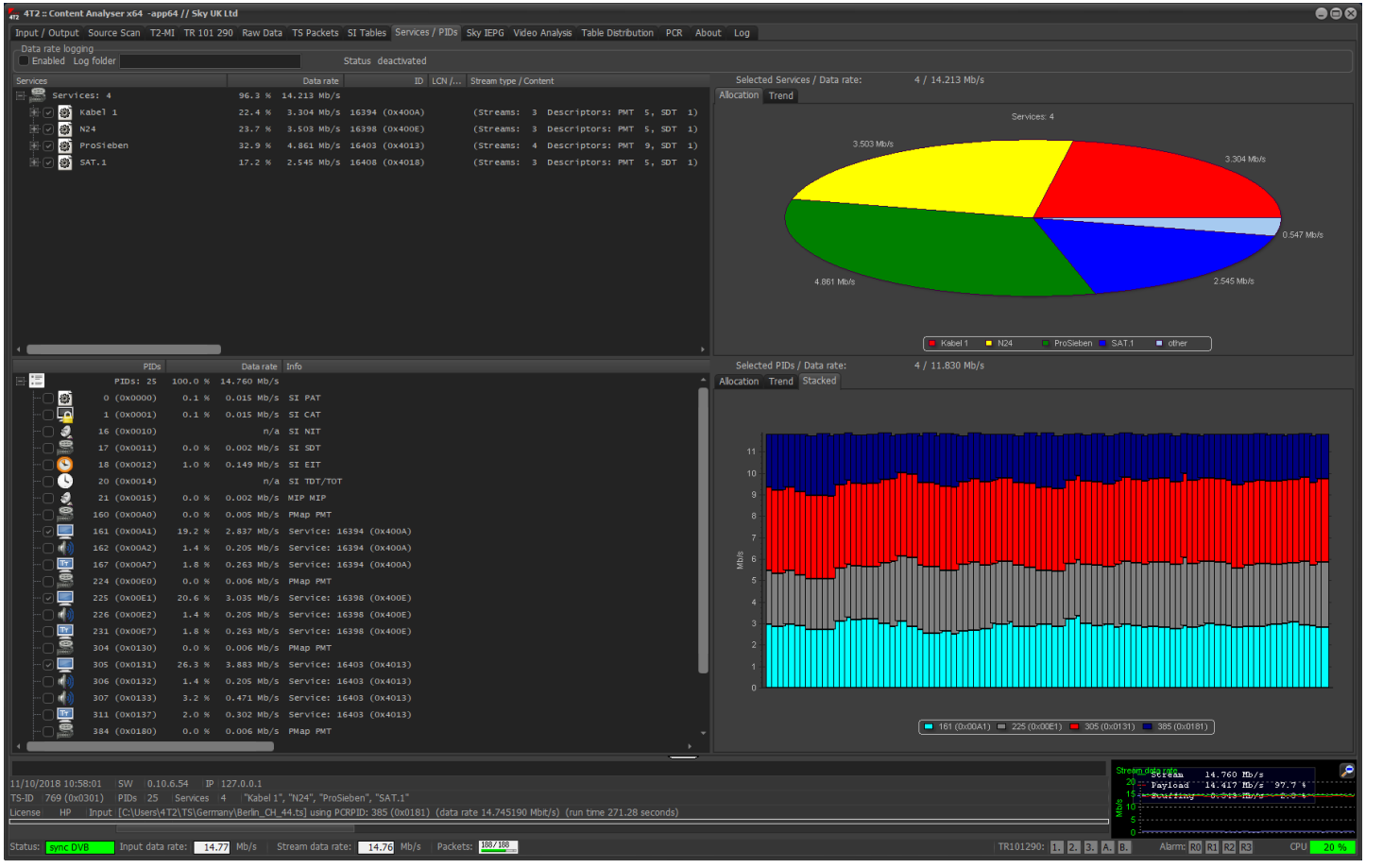
- Up to 4 RF channels to be measured simultaneously
- DVB-T and DVB-T2 standards
- Transport Stream analysis available on all channels
- Vehicle power supply and mains power supply as standard
- Optimised screen resolution (1440x900 pixels or 1920x1200 pixels on request)
- Shockproof receiver mounting
- Storage file format fully compatible to other ABC instruments
- Map Maker application for map-file download over the internet

SERVICES PIDs (all inputs)

Data-rate displays with virtual and logical channel numbers sorted by services and PIDs

Pie-chart and trend-line displays with relative and absolute data-rates

All components of service displayed



MultiViewer (all inputs)

Video/Audio of all services in transport stream

Black/Freeze detection

Audio bargraphs with history

DVB-Subtitles

DVB-Teletext

GOP-Structure

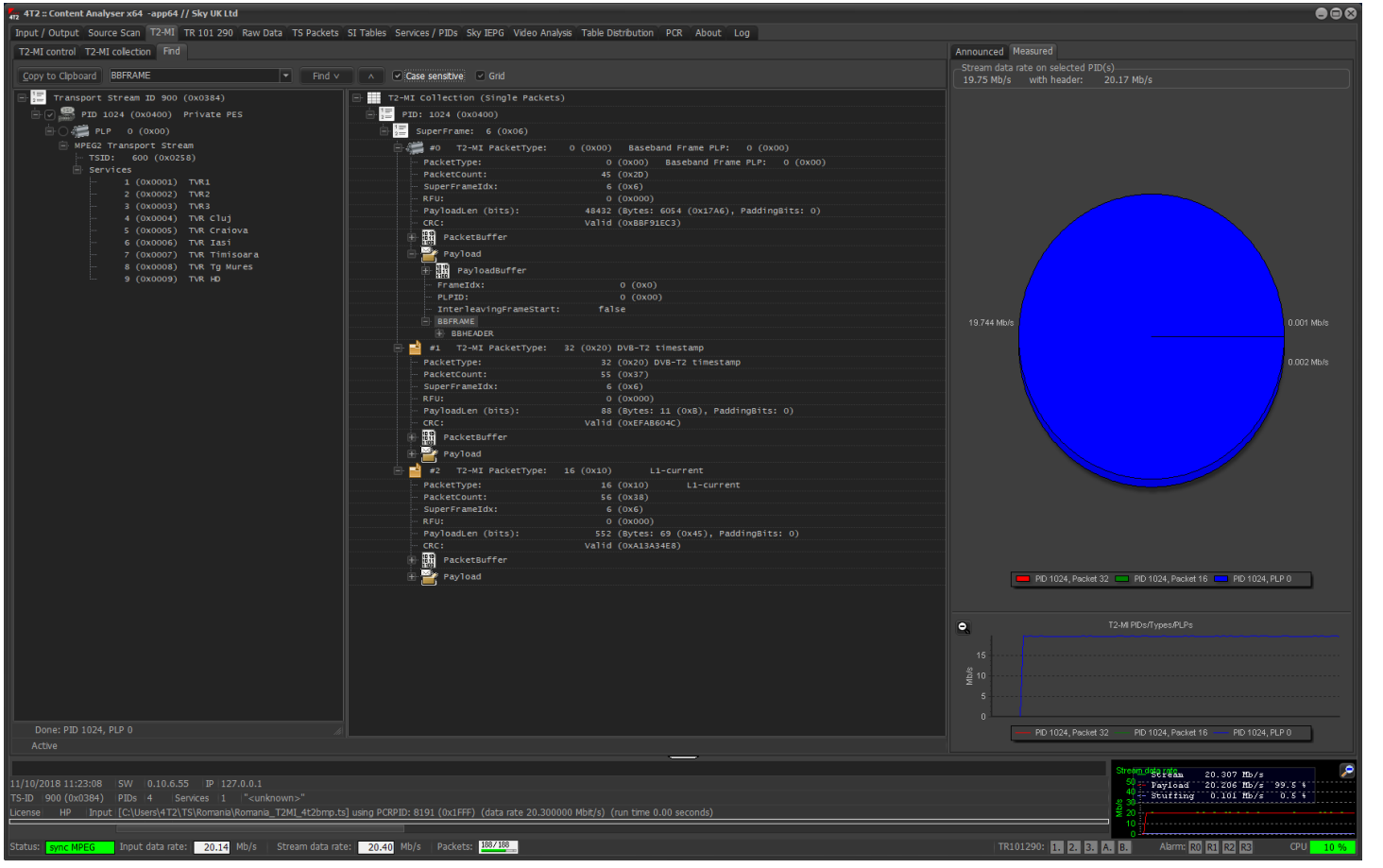
SMPTE-35 Ad-Insert

T2-MI (ASI, IP inputs)

T2-Modulator interface real-time analyser

De-capsulation of embedded single-, or multi-program transport streams

Re-routing into Content-Analyser for full visualisation and analysis



DVB-T2 specific RF measurements

(XTASI-RF)

Constellations
L1 post and
Data-PLP,
Impulse-Response,
Spectrum displays

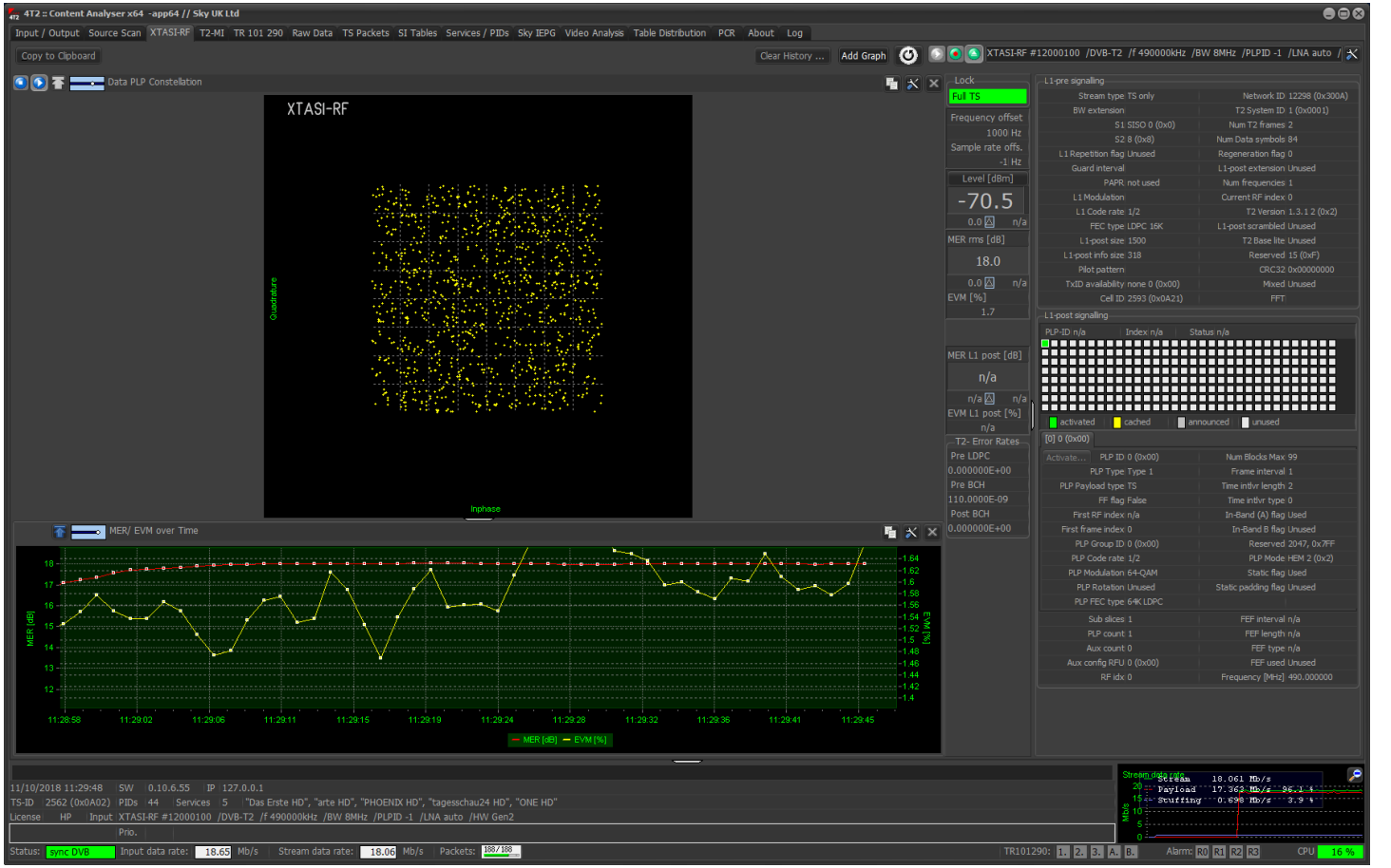
Level, MER, EVM,

BER before LDCP, and BCH

L1-pre, and L1-post
decoded information

data logging
data export

>42dB MER performance



Terrestrial RF expert functions

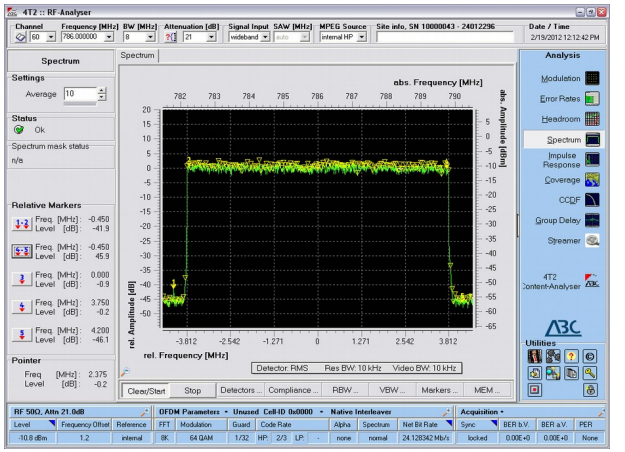
Spectrum Analyser

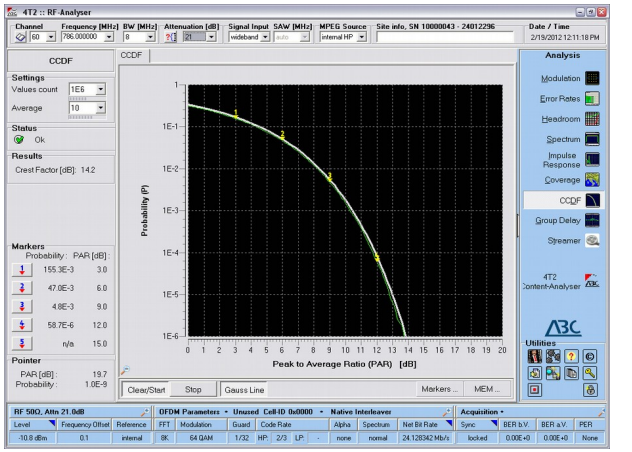
CCDF

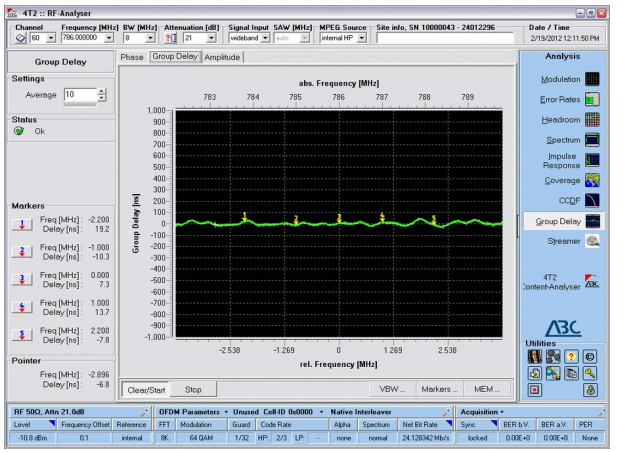
Phase and Group Delay

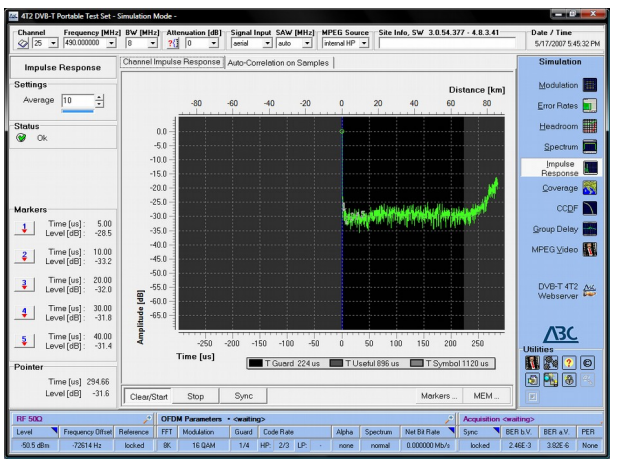
Impulse Response

All measurement menues with masks and markers and sophisticated analysis and export functions









DVB-S2 specific RF measurements

(XTASI-S2)

Constellation

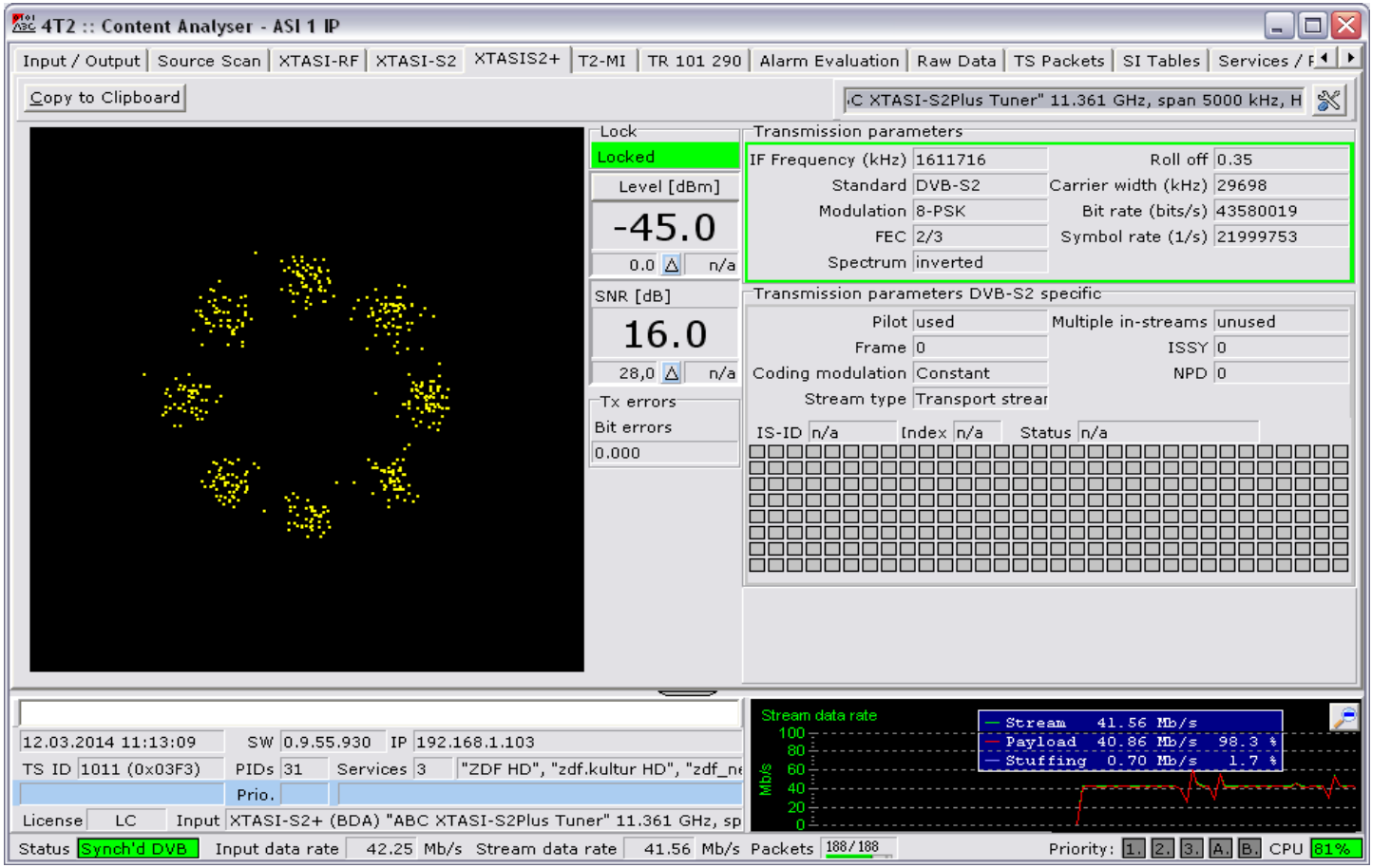
QPSK+,
8 APSK+,
16 APSK+,
32 APSK+,

LDCP and BCH short and normal mode

Level measurement

SNR measurement

0.2, 0.25, 0.35 Filter Rolloff support



DVB-T/T2 4T2 RF-Analyser (terrestrial inputs)

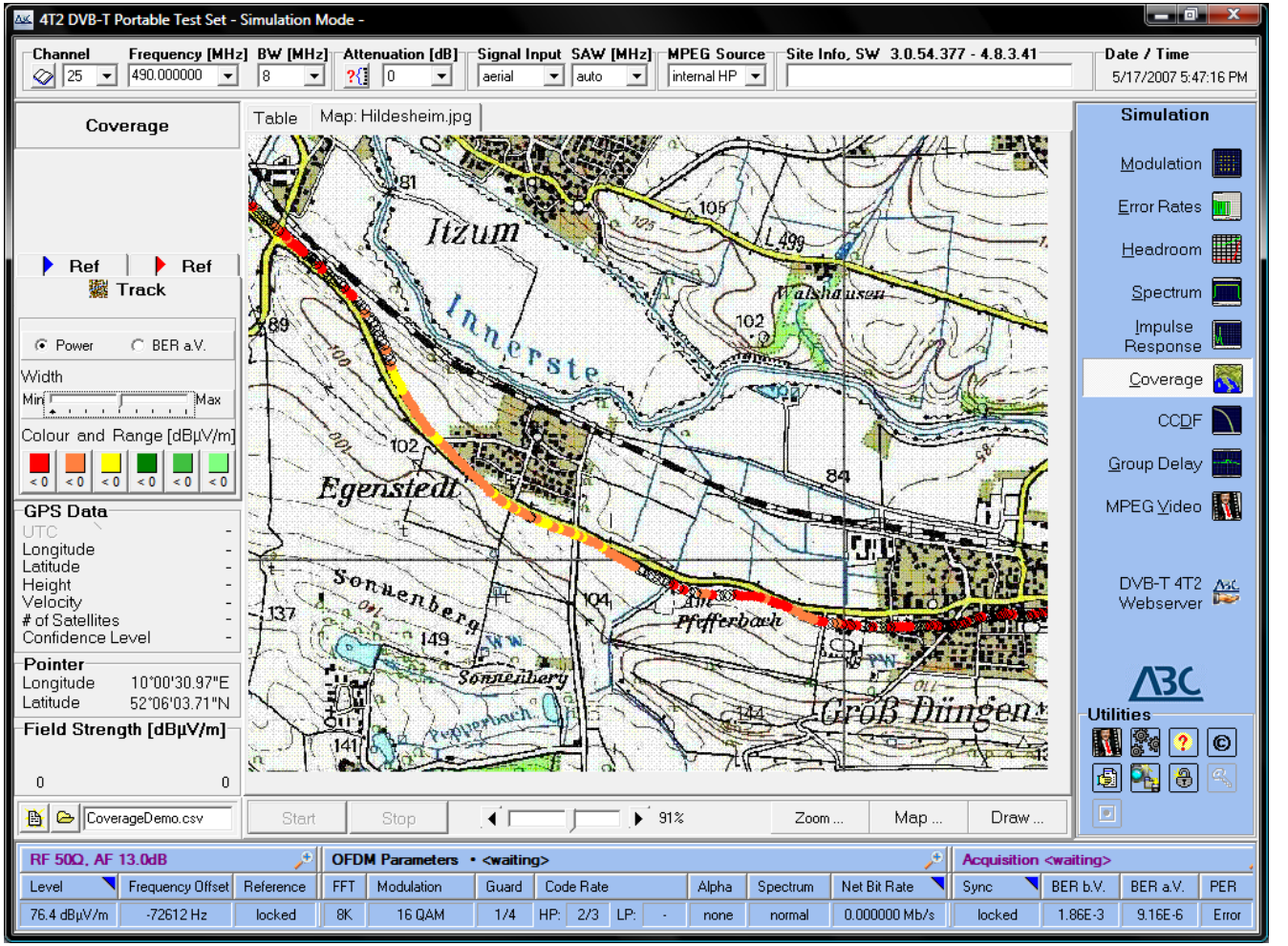
Coverage Analysis
Up to four simultaneous channels supported

Fully integrated GPS reception (Garmin, or Navilock devices)

Multiple Map format including OpenStreetMap

Level conversion with antenna factor entry

Comprehensive printing, and file-export features
With Kml, kmz support



TR 101 290 (all inputs)

Evaluation of TS following TR101290 1st, 2nd, 3rd priority (including T2-MI extensions)

Groups, or individual error measurements

All errors are logged with date and time of occurence

Selection can be used as trigger for Stream Capture

Pre and post trigger capture

Adjustable quota for current file and overall storage

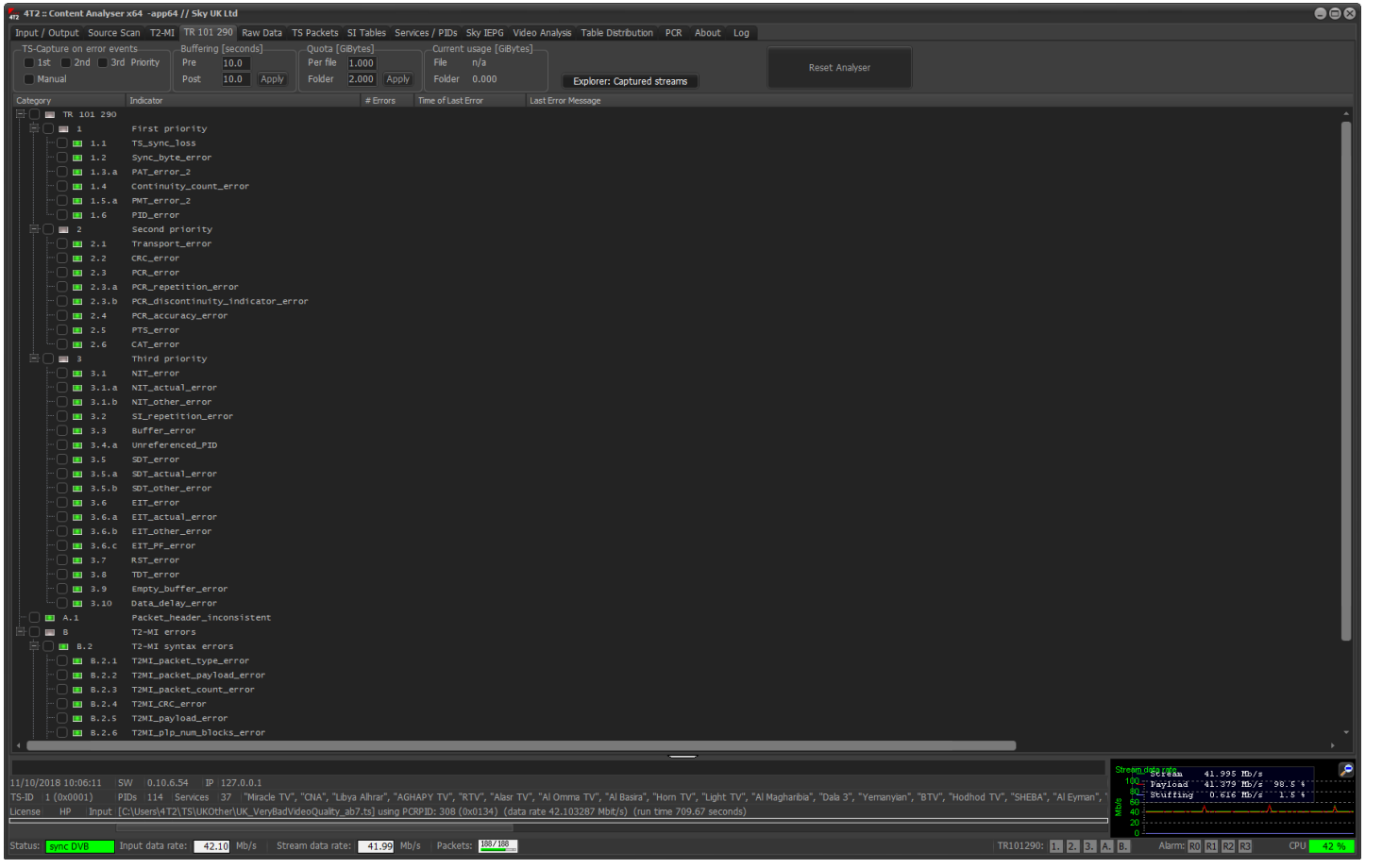


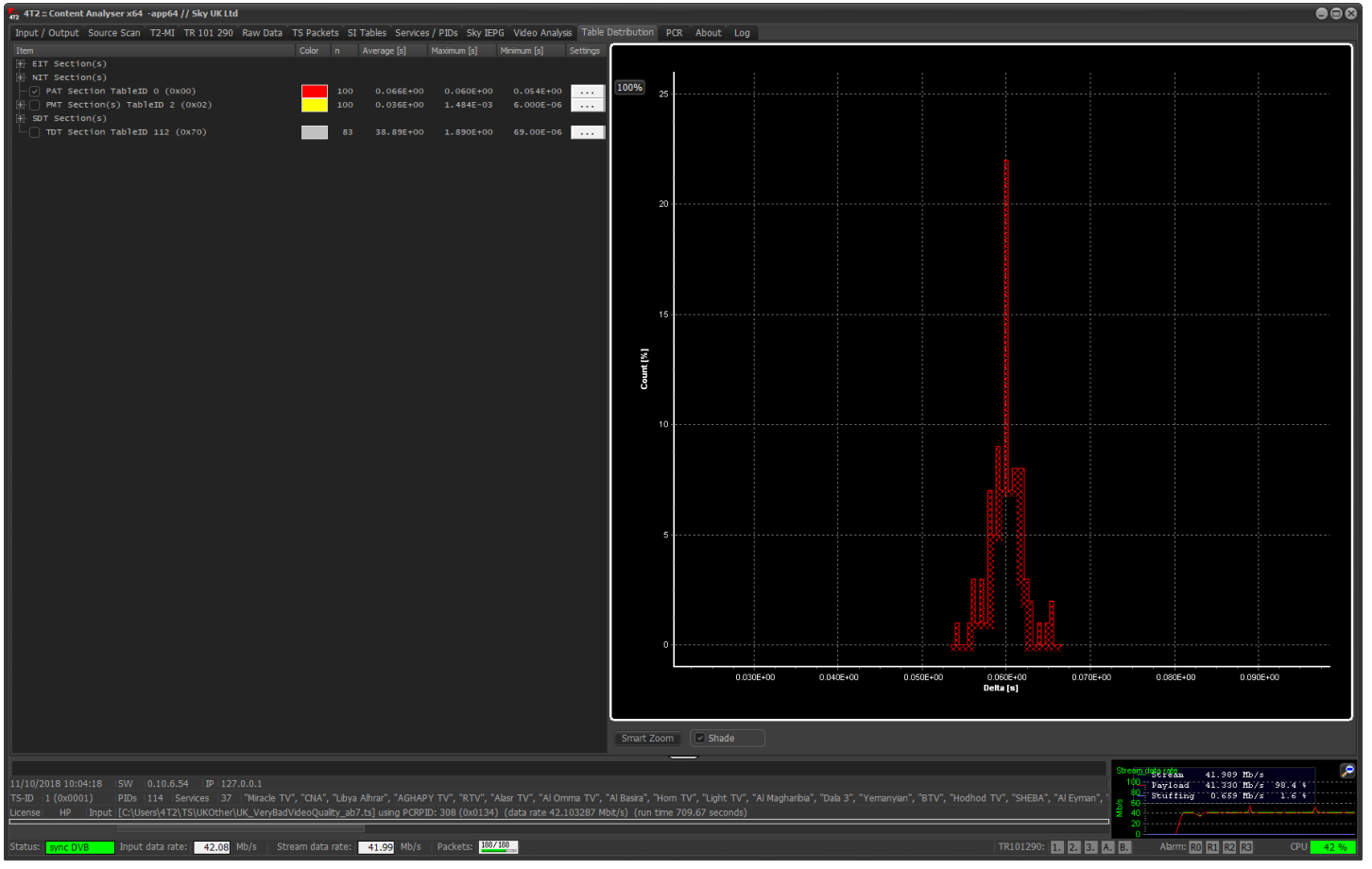
Table and PCR Distribution/Jitter (all inputs)

Distribution of SI-tables in the Transport Stream

Individual tables can be selected and the repetition rates are displayed in form of a histogram

Smart-zoom assists on positioning the histograms

PCR Distribution and Jitter allows for most detailed measurements

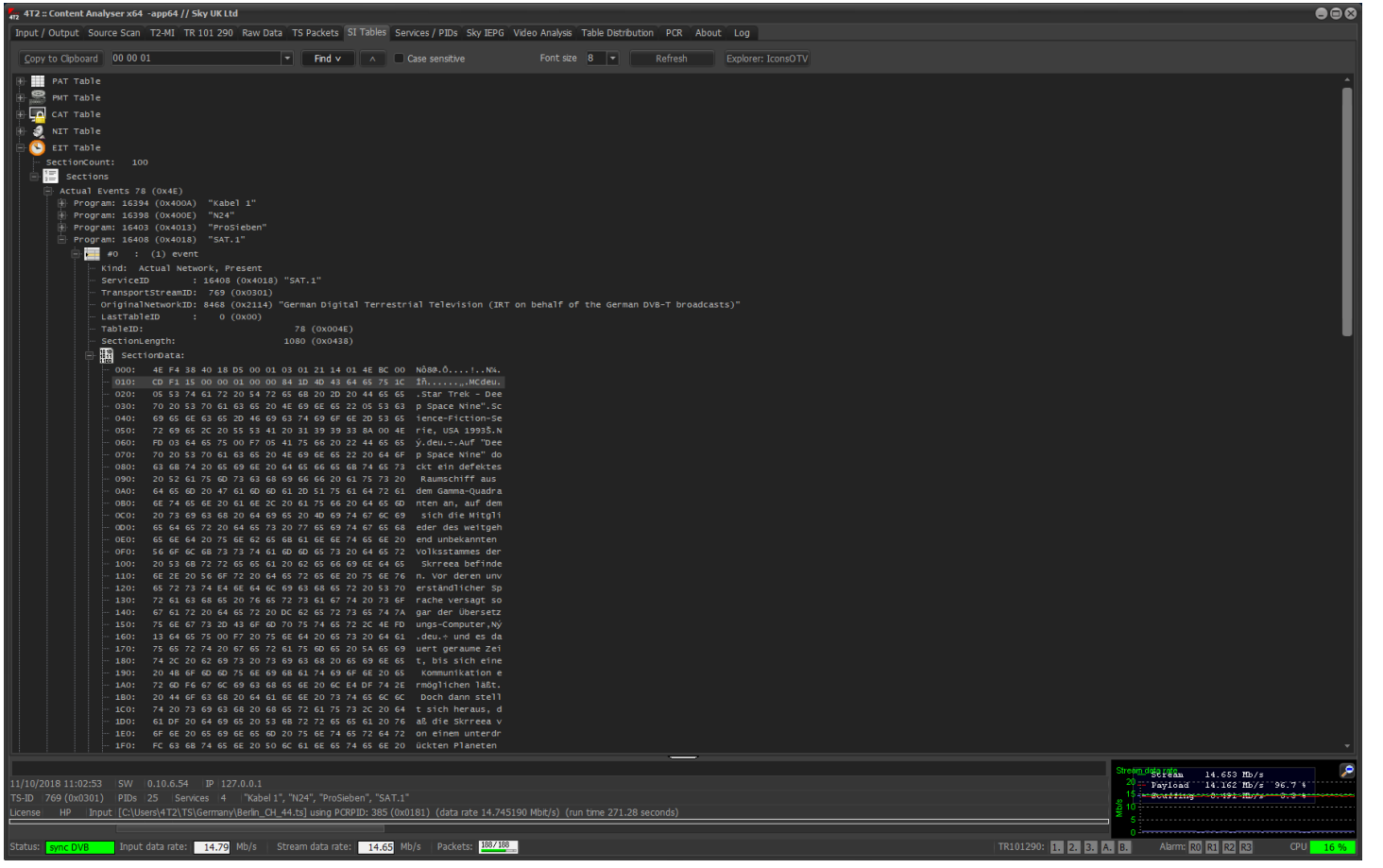


SI tables (all inputs)

Display of the service information tables (SI) with:

- find function
- comprehensive tree exporting options
  - all SI-tree
  - sub-tree
  - individual entries

SI of DVB, ATSC, and ISDB supported

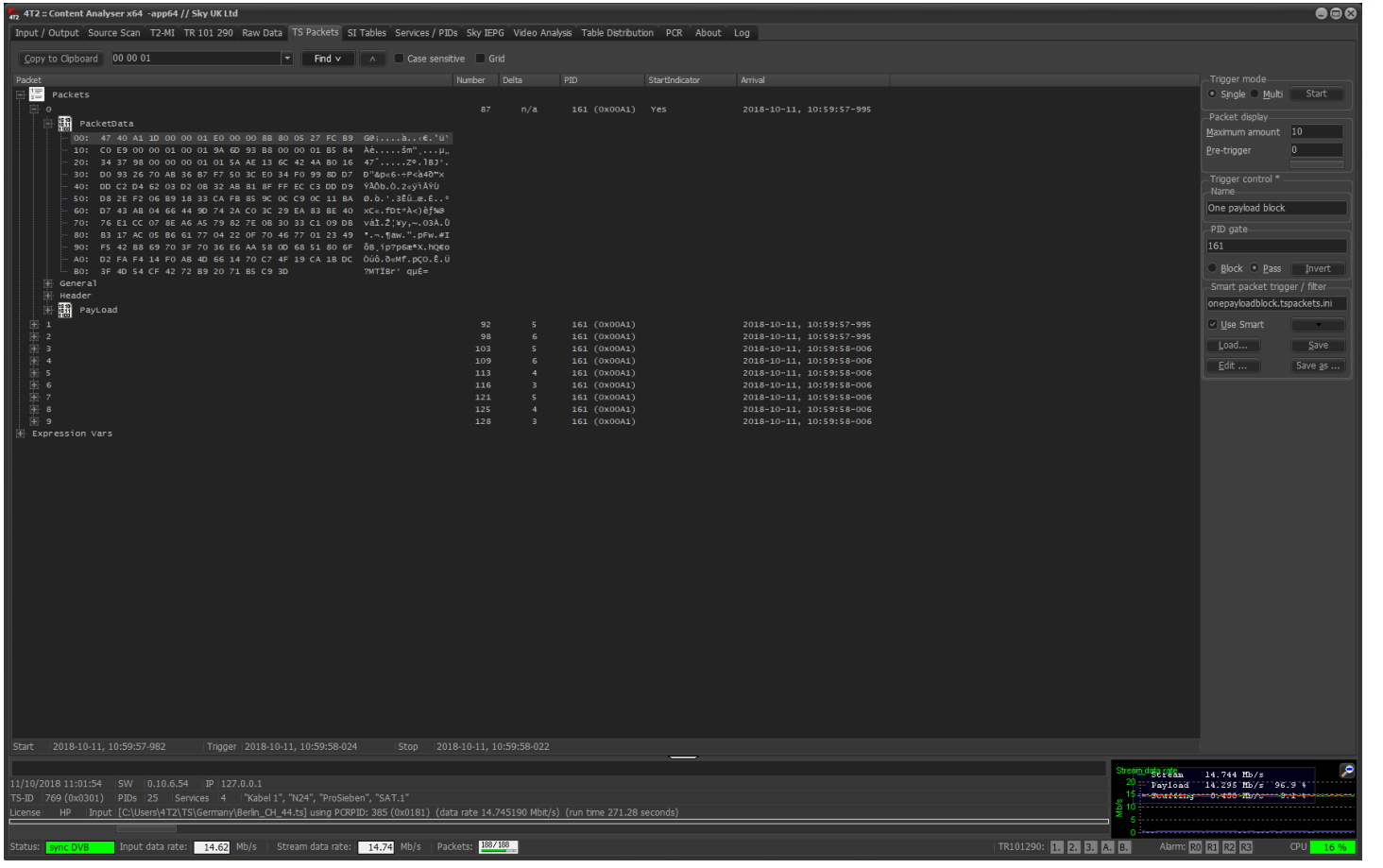


TS Packets (all inputs)

3rd generation expert function

Sophisticated packet filtering with multiple triggers and filter expression editor

Unique and powerful tool for finding problems in transmission chains and multiplexers

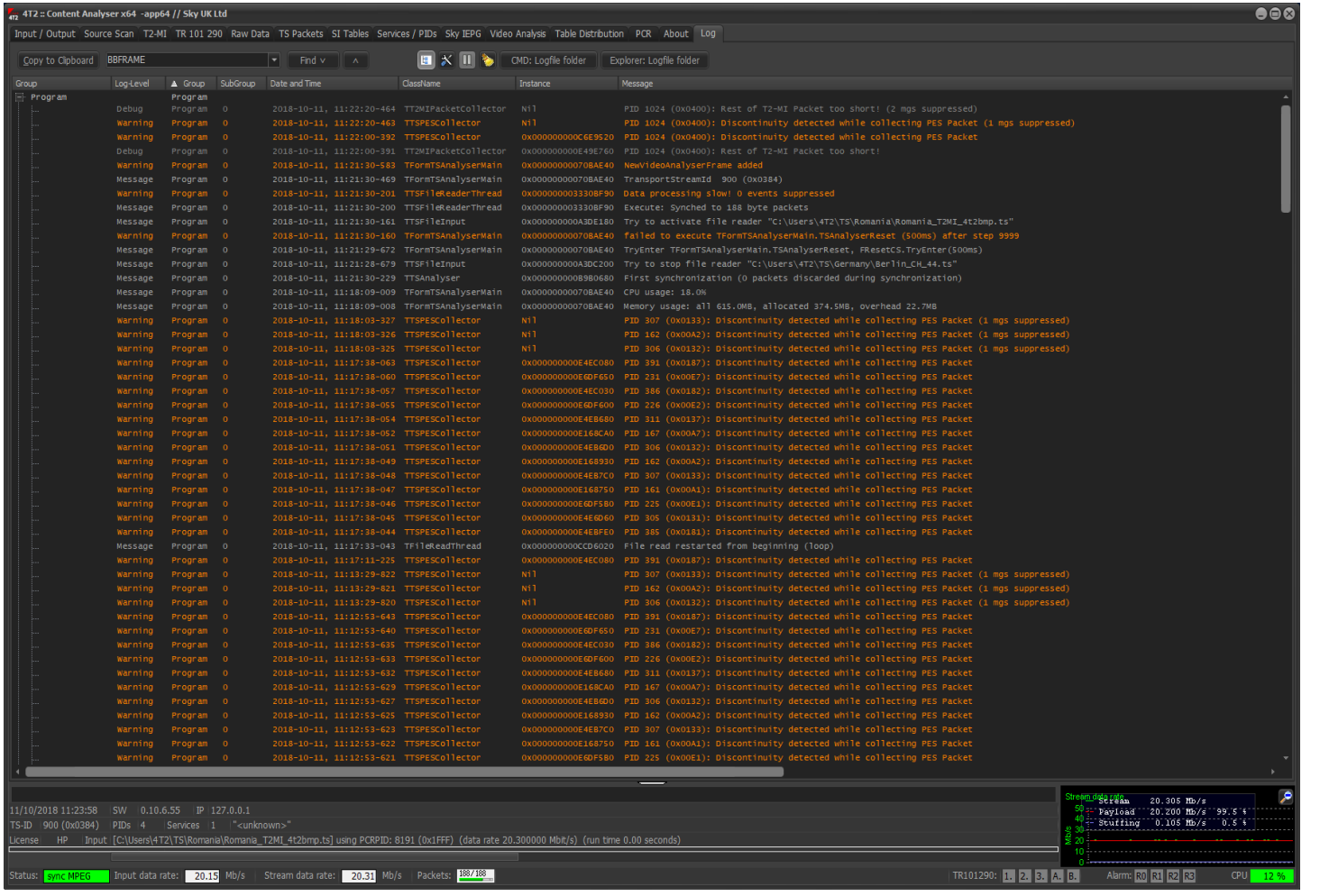


Log (all inputs)

Most comprehensive logging system with integrated find and sorting features

Automated logfile storage with integrated garbage collection

Easy logfile post-processing available on-the-fly using Windows tools



further benefits

- chassis refined over more than one decade with respect to robustness and durability
- based on industry-standard hardware: Mini-itx, ATX, m.2e or SATA-III, USB3, hdmi
- Windows™ system, supporting any standard application software
- all measurements performed simultaneously
- unlimited storage of measurement reports on either SSD, or USB memory stick
- remote control or sharing of the 4T2 equipment in LAN or WAN environments

further information available at
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