

REFEREE 3

The 1st ATSC 3.0 analyzer designed for field measurements

ATSC 3.0/1.0

Ensuring that end-users can receive good quality TV is the main concern for anyone working through the media delivery chain.

ReFeree 3 offers the only compact solution able to efficiently put oneself in the final customer shoes.



2019 **PRODUCT**
of the **YEAR**
NABSHOW
Where Content Comes to Life

BEST of
SHOW
at NAB SHOW 2019
TVTechnology

APPLICATIONS

- **Coverage & Drive Tests** for ATSC 3.0 & ATSC 1.0
- **Installation & Maintenance** Test Tool
- RF Reception **Qualification**
- Head-End/TX site/off-air measurements
- **ATSC 3.0/1.0** Network Troubleshoot
- **R&D** Test & Measurements

BENEFITS

- **The most compact** ATSC 3.0 analyzer
- **Complete analysis** of the ATSC 3.0/1.0 broadcast chain (RF + STLTTP)
- **Efficient** maintenance & operation
- **Analyze/Validate** ATSC 3.0 signals **in real-time** down to the frame structure
- **Live video decoding**



KEY FEATURES

- **ATSC 3.0 & ATSC 1.0 RF Measurements**
 - Spectrum & Constellation display
 - Signal level, MER, SNR, BER
 - Channel Impulse Response (CIR) with TXID
 - Modulation Parameters
- **ATSC 3.0 Frame analysis**
 - Complete frame decoding
 - Frame structure display (including subframe & PLP)
 - Service list view
 - Bitrate monitoring by PLP & Service
 - Log and trend files
- **Audio/Video Display**
 - Service decoding (unencrypted programs)
 - ROUTE DASH reception
- **STLTP Analysis**
 - STLTP decoding via PC ETH
 - Bitrate monitoring (outer, inner, by PLP & Service)
- **Road Test & Field Coverage**
 - Internal GPS/GLONASS receiver
 - GPS/GLONASS L1 antenna provided
 - Google compliant report files including RF measurements

ENVIRONMENT & PHYSICAL

- 2x RF input (F-type female 75Ω)
- 1x ASI input and 1x ASI output
- 1x IP Data Ethernet 1Gbps + 1x IP Data Fiber 1Gbps (SFP)
- 1x 10 MHz input, 1x GNSS input, 1x 1PPS input for SFN delay measurements
- 1x CI+ slot for CAM module input
- Dimensions 21 x 12 x 3,5 cm / 730 g
- USB self-powered, allows LNB powering



ORDERING CODES

ReFeree 3		
ATSC 3.0 & ATSC 1.0 Compact Measurement Receiver		
Shipped bundled with dedicated software for Windows 8/8.1, 10		
Software Option	Video decoding ATSC 3.0 STLTP	ATSC 3.0 ROUTE live video decoding, ATSC 1.0 live video decoding STLTP analysis