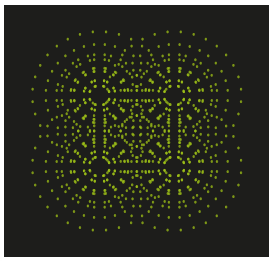
NEW ATSC 3.0 LABMOD

The 1st ATSC 3.0 Modulator for Lab!

ATSC 3.0 LAB MODULATOR IS THE PERFECT MODULATOR FOR DISCOVERING ATSC 3.0 STANDARD: GENERATE LIVE ATSC 3.0 RF SIGNALS OR IQ PATTERN FILES, RECORD LIVE ATSC 3.0 TRANSMISSION IN DIFFERENT PLACES OVER THE WORLD AND PLAYBACK THEM TO TEST YOUR RECEIVER.

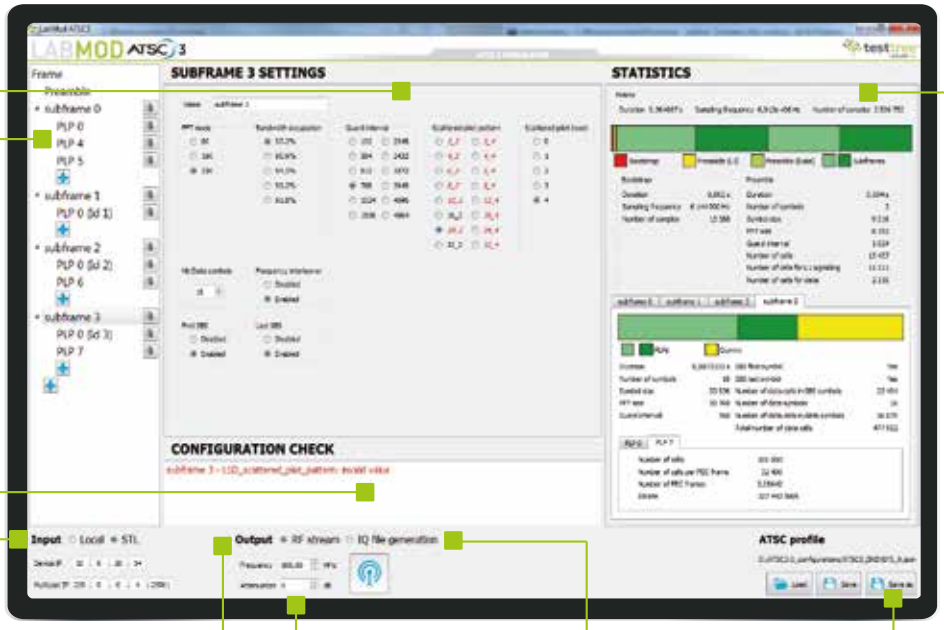


USB SELF-POWERED & LOW POWER (3W)

LIGHTWEIGHT (600g)

Easy to use & Responsive GUI

High degree of parameterization for measures



Settings section
Configure all Frame elements

Frame structure section
Create Frame structure: subframe, PLP

Real-time configuration validation engine
Detailed message indicating non valid parameters

Input: Local PRBS or IP STL

Monitoring section
Real-time overview of the Frame structure
Detailed characteristics depending on the current configuration

Controls:
play RF signal on TX output,
generate IQ pattern file

Frequency setting for TX
Range 70 MHz up to 6 GHz
1 kHz resolution
Configurable attenuation

IQ pattern file stored on PC:
1 min of ATSC 3.0 (6MHz)
record = 1.6 GB
Configurable duration
RF-Catcher file format

Save/Load configuration file
JSON editable format

APPLICATIONS

- ATSC 3.0 RF record & playback
- ATSC 3.0 reception validation
- R&D or factory tests and measurements
- Chipset development
- TV / Set Top Box development
- Demonstrations and roadshows

KEY BENEFITS

- 1st ATSC 3.0 modulator
- Compact (600g), USB self-powered
- 3-in-1 product: RF Record + Playback + Generate
- **ATSC 3.0 PlugFest proven**
- Intuitive & easy to use GUI
- Easy to configure: real-time Frame configuration validation engine

RX MODE

Frequency

Frequency band	70 MHz to 6.0 GHz
Frequency resolution	1 kHz
Real-time bandwidth	1 MHz to 55 MHz
RBW (Resolution bandwidth)	30 Hz (for 2 MHz) to 210 kHz (for 55 MHz)

Noise Figure	< 8 dB
Phase Noise at 10 kHz	
1200 MHz	-91.3 dBc/Hz
3200 MHz	-85.2 dBc/Hz
5000 MHz	-82 dBc/Hz
Noise Floor / Sensitivity	-110 dBm

IF Band

ADC resolution	12-bit
Sampling rate	61.44 Msps max

RF Input Characteristics

Input Dynamic Range	-110 to 0 dBm
Input Level Resolution	1 dB
Max Peak power*	0 dBm
Max DC input*	± 15 V

**Absolute maximum ratings*

Gain Range (1dB step)

800 MHz	0 to 74 dB
2300 MHz	0 to 73 dB
5500 MHz	0 to 65 dB

IIP3

1200 MHz	7.2 dBm
3200 MHz	8.4 dBm
5000 MHz	15.2 dBm

Storage

512 GB @ 12 Msps	170 min
512 GB @ 24 Msps	85 min
512 GB @ 40 Msps	50 min

TECHNICAL CHARACTERISTICS

Input interface	PRBS, IP STL, TS file* 2x RF inputs (SMA-type female 50 Ω, F-type female 75 Ω) ATSC 3.0 live RF recording
Clock and synchronisation	
Input	10 MHz, 1 PPS, Built-in GNSS receiver
Output	10 MHz
Internal clock	10 MHz
GUI	MS Windows 7/8/8.1/10 (x64) application Easy to use, configuration validation engine Capability to save/load settings profiles
Output interface	2x RF outputs (SMA-type female 50 Ω, F-type female 75 Ω) ATSC 3.0 live RF playback and generate
Modulation	
ATSC 3.0 constellation (NUC)	QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM
L1	Compatible with all L1 modes
LDM (Layered Division Multiplex)	Yes
Channel bandwidth	6, 7 or 8 MHz
Guard Interval	192, 384, 512, 768, 1024, 1536, 2048, 2432, 3072, 3648, 4096, 4864
FFT mode	8k, 16k, 32k (all Cred_coeff modes)
Code rate	2/15 up to 13/15
FEC	Inner: LDPC 16k and 64k, mode A or B Outer: BCH, CRC or no outer
Pilot pattern	SP3_2, SP3_4, SP4_2, SP4_4, SP6_2, SP6_4, SP8_2, SP8_4, SP12_2, SP12_4, SP16_2, SP16_4, SP24_2, SP24_4, SP32_2, SP32_4
TI (Time Interleaving) mode	CTI up to 1448 depth, HTI
SubFrames	Multiple subframes: single/multiple PLP
TxID*	Transmitter identification

**Contact us for availability*

TX MODE

Frequency

Frequency band	70 MHz to 6.0 GHz
Frequency resolution	1 kHz
Real-time bandwidth	1 MHz to 55 MHz

Phase Noise at 10 kHz

1200 MHz	-91.3 dBc/Hz
3200 MHz	-85.2 dBc/Hz
5000 MHz	-82 dBc/Hz

RF Output Characteristics

Attenuation range	0 to 89 dB
Amplitude resolution	0.01 dB
Power output	5 dBm max
Max DC output	± 15 V

PHYSICAL

Dimensions	163 x 115 x 27 mm 6.4 x 4.5 x 1.2 in
Weight	600 g
Power supply	USB self-powered
Auxiliary power	USB connector (additional power supply for satellite captures using LNB controller)
Power consumption	3W

INTERFACES

RF input	1x SMA-type female - 50 Ω 1x F-type female – 75 Ω (up to 2 GHz)
RF output	1x SMA-type female - 50 Ω 1x F-type female – 75 Ω (up to 2 GHz)
1PPS/Trigger input	1x SMA-type female - 50 Ω
Trigger output	1x SMA-type female - 50 Ω
10MHz	1x SMA-type female - 50 Ω
GPS	1x SMA-type female - 50 Ω
Power & Data	1x USB3 B-Type
Auxiliary power	1x USB3 B-Type

ENVIRONMENT

Operating temperature	-20°C to +55°C
Storage temperature	-20°C to +70°C

PC MINIMUM REQUIREMENTS

Core i5/i7 processor
4 GB of RAM
USB 3.0 connectors
SSD for storage
(Solid State Drive)

ORDERING CODES

ATSC 3.0 LabMod	**ATSC 3.0 Modulator for Lab** Shipped bundled with RF-Catcher Platform and ATSC 3.0 LabMod Application for MS Windows 7/8/8.1/10 (x64)
ATSC 3.0 LabMod Application	**ATSC 3.0 Modulator Application for Lab** MS Windows 7/8/8.1/10 (x64) software application for RF-Catcher Platform

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RoHS 2002/95/EC