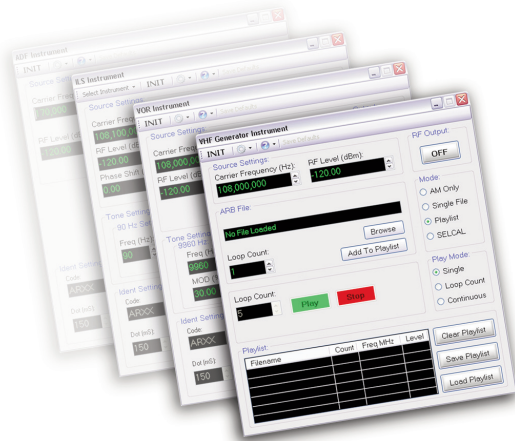


Avionics

Avionics Test Studio



Avionics Test Studio (ATS) is a collection of software defined PXI instruments designed to aid avionics facilities with testing and troubleshooting of avionics electronic units and modules.

- Available Functions: ADF Generator, ILS Generator, VOR Generator, VHF Comm Generator including SELCAL, VDB Generator and MKR Generator.
- Applications: This collection of software tools can be used in product development, prototype, certification, bench and factory ATE test systems, troubleshooting and service.
- Analyzer package currently in development.

Avionics Test Studio can be used both as a bench top troubleshooting tool and within an ATE environment. All signal parameters can be controlled from the graphical user interface (GUI) as software defined instruments or from your choice of programming language as DLL calls.

Each GUI and DLL comes with its own help file. The DLL help file includes example code on how to use the DLL in an ATE environment. The GUI help file shows how to use the GUI software defined instrument.

Features:

- Utilizes the Aeroflex 3000 Series PXI cards
- Tests and analyzes traditional NAV/COMM functions as well as the latest airborne datalink protocols:
 - VHF Datalink Mode 2 (ref. ARINC Specification 631-4)
 - VHF Datalink Mode 3 (ref. RTCA DO-271C)
- ANSI C DLL Drivers that can be called from any modern test environment including C#, Microsoft VisualStudio and National Instruments LabWindows/CVI
- Comprehensive help files
- Level accuracy ± 0.3 dB typically CW
- Low phase noise typically -143 dBc/Hz at 20 kHz offset
- Software drivers fully compatible with Aeroflex NAV2000R, including Collins 479S-6A GPIB command set

COMMON RF PXI CHARACTERISTICS:

RF OUTPUT: (AS PER 3025C SIGNAL GENERATOR SPECIFICATIONS)

ADF SPECIFIC DATA

(Subject to change, depending on PXI Generator card selection)

MODULATION

Modulation Tones

Frequency	Adjustable from 10 Hz to 18000 Hz, Default 1020 Hz
Resolution	1 Hz

Accuracy	±0.01%	to 40 Hz
Distortion	<0.40% THD	30 Hz variable, adjustable from 20 Hz to 40 Hz
Amplitude Modulation		
Range (per tone)	Total % MOD not to exceed 99%	9960 Hz, adjustable from 9000 Hz to 11000 Hz
1020 Hz IDENT	0-99%, Default 40%	1020 Hz ident, adjustable from 10 Hz to 18000 Hz
Overall accuracy	±2% of setting for 5% to 90% AM	
Tone distortion	0.5% max	

MKR SPECIFIC DATA:

MODULATION

Modulation Tones

Frequency	400, 1300, 3000 Hz (adjustable)
Tone Resolution	1 Hz

ILS SPECIFIC DATA

MODULATION

Modulation Tones

Frequencies	90 Hz, adjustable from 72 Hz to 108 Hz 150 Hz, adjustable from 120 Hz to 180 Hz 1020 Hz ident, adjustable from 10 Hz to 18000 Hz
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Resolution	1 Hz
Accuracy	±0.01%
Distortion	<0.40% THD

90/150 Hz Phase

Range	Adjustable from 0.0 to 359.9°
Resolution	0.1°

Amplitude Modulation

Range (per tone)	Total % mod not to exceed 99%
1020 Hz IDENT	0-99%, Default 20%
90 Hz	0-99%, Default 20%
150 Hz	0-99%, Default 20%
Overall accuracy	±2% of setting for 5% to 90% AM
Tone distortion	0.5% maximum

DDM

Default	0.000 DDM
Variable range	0.400 (Localizer mode) 0.800 (Glideslope mode)
Resolution	0.0001 DDM
Total system error	
Localizer	±0.001 DDM from 0.000 to 0.045 DDM ±2% from 0.045 to 0.200 DDM
Glideslope	±0.001 DDM from 0.000 to 0.045 DDM ±2% from 0.045 to 0.400 DDM

VOR SPECIFIC DATA

MODULATION

Modulation Tones

Frequencies	30 Hz reference, adjustable from 20 Hz
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Resolution	1 Hz
Accuracy	±0.01%
Distortion	<0.40% THD
9960 Hz FM deviation:	240 to 540 Hz
Radial range	000.00 to 359.99 degrees
Radial accuracy	±0.05°

Amplitude Modulation

Range (per tone)	Total % mod not to exceed 99%
1020 Hz IDENT	0-99%, Default 30%
30 Hz variable	0-99%, Default 30%
9960 Hz	0-99%, Default 30%
Overall accuracy	±2% of setting for 5% to 90% AM
Tone distortion	0.5% max

IDENT SPECIFIC MODE (ADF, ILS, AND VOR)

Ident Code

Range	A-Z, 0-9
Length	1 to 5 characters
Rate	1 to 65 sec.
Rate resolution	1 sec.

Dot Time

Range	Adjustable from 50 to 250 ms, Default 150 ms
Resolution	1 ms

Dash Time

Range	Adjustable from 150 to 750 ms, Default 450 ms
Resolution	1 ms

Dot/Dash Spacing

Range	Adjustable from 50 to 250 ms, Default 150 ms
Resolution	1 ms

Character Spacing

Range	Adjustable from 150 to 750 ms, Default 450 ms
Resolution	1 ms

VHF GENERATOR SPECIFIC DATA

GENERATOR MODES

Single-File Mode

File play mode	Continuous or from 1 - 4095 times
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Play-List Mode

List play mode	Continuous or from 1 - 4095 times
List entries	1 to 127

Avionics Test Studio Software Defined Instruments

Plays per entry 1 to 4095

AM Modulation

Frequency Adjustable from 10 Hz to 50000 Hz,
Default 1000 Hz

Modulation % 0-99%, Default 30%

Resolution 1 Hz

Freq. accuracy $\pm 0.005\%$

Overall accuracy $\pm 2\%$ of setting for 5% to 90% AM

Distortion $< 0.40\%$ THD

VDB GENERATOR SPECIFIC DATA

MODES

Single-File Mode

File play mode Continuous or from 1 - 4095 times

Play-List Mode

List play mode Continuous or from 1 - 4095 times

List entries 1 to 127

Plays per entry 1 to 4095

VDB Burst Generation

Input data From a file or array

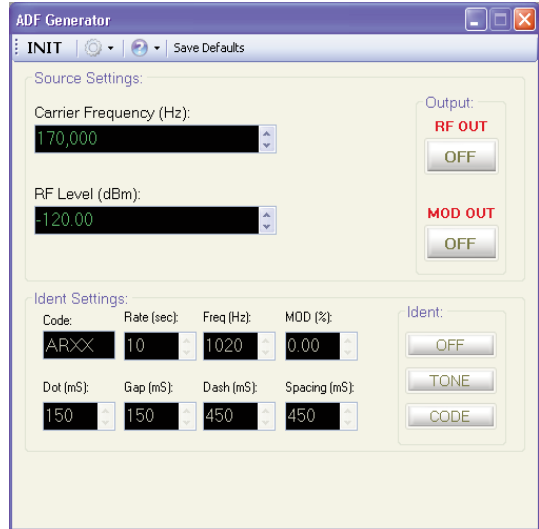
Filter ALPHA 0.0 to 1.0

Oversample factor 2 to 16

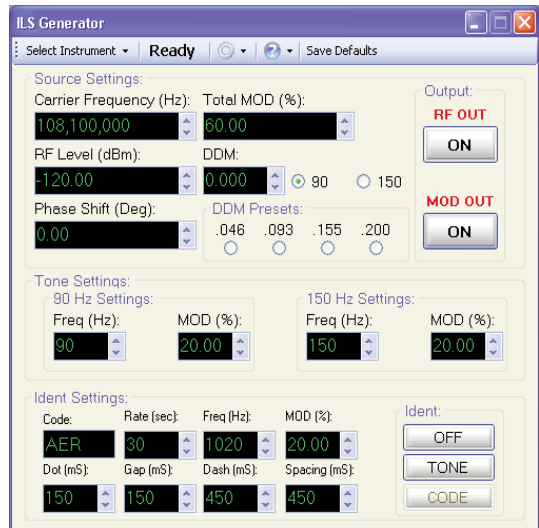
RF ramp filter Adjustable length Cosine response

PXI CARD SELECTION

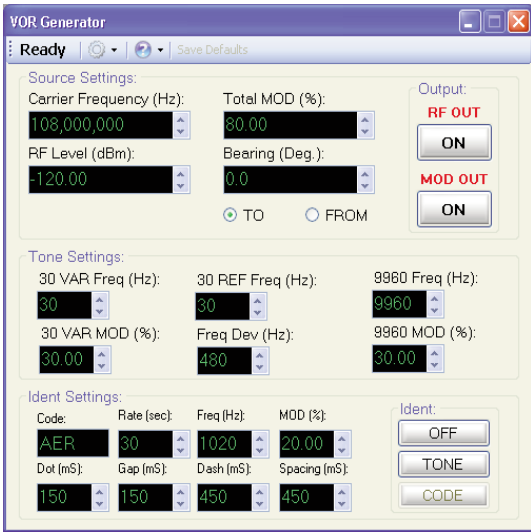
PXI P/N:	3025	3025C
H/W Order Number:	ATEP-3025	ATEP-3025C
ADF Generator		X
MKR Generator		X
ILS Generator	X	X
VOR Generator	X	X
VHF Comm Generator	X	X
VDB Generator	X	X



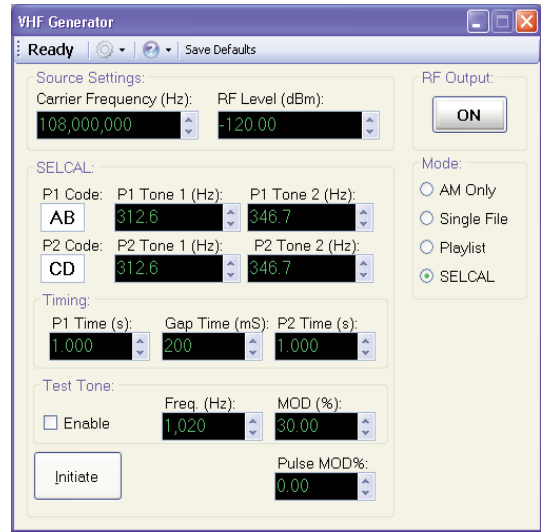
ADF Signal Generator



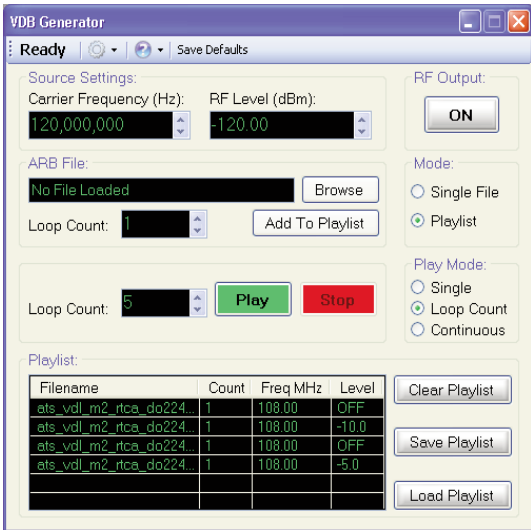
ILS Signal Generator



VOR Signal Generator



VHF Signal Generator



VHF Data Broadcast Signal Generator

VERSIONS AND OPTIONS

When ordering, please include the Order Number listed below:

Ordering Numbers

Versions

Software

ATES-01	ADF Generator
ATES-02	ILS Generator
ATES-03	VOR Generator
ATES-05	VHF Comm Generator
ATES-08	VHF Data Broadcast Generator
ATES-10	MKR Generator
ATES-NAV	Avionics Test Studio NAV/COMM Signal Generator Package

Note: Additional software packages currently in development for DME Analyzer, VHF Comm Analyzer, LRA Analyzer, HF Datalink and DME Generator.

Hardware

ATEP-3020A	Digital RF Signal Generator, 250 MHz to 2.7 GHz
ATEP-3025	PXI Digital RF Signal Generator, 100 MHz to 6 GHz
ATEP-3025C	PXI Digital RF Signal Generator, extended freq, 100 kHz to 6 GHz
ATEP-3030C	PXI Wideband RF Digitizer, 250 kHz to 3 GHz
ATEP-3035	PXI Wideband RF Digitizer, 330 MHz to 6 GHz
ATEP-3035C	PXI Wideband RF Digitizer, extended freq, 250 kHz to 6 GHz
ATEP-3011	PXI RF Synthesizer

Note: One ATEP-3011 PXI RF Synthesizer Card is required for each PXI signal generator or digitizer included in a system.

For the very latest specifications visit www.aeroflex.com

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.