ATB-7300 to NAV2000R Product Comparison

Parameter / Function	Aeroflex ATB-7300	Aeroflex NAV2000R
Collins 479S-6A simulation	Yes (in Beta form)	Yes
ARINC 410 Auto-Tune Compatible	No	Yes
Audio Level Output	N/A	2VAC (peak) into 600Ω
Signal Generator		
Frequency		
Freq Range	0.1 to 3000 MHz	150 kHz to 450 MHz
Freq Resolution	1 Hz	10 Hz
Output Amplitude		
Gen (TX) Port	0.0 dBm to -100.0 dBm	0 dBm to -127 dBm
	0.1 dBm increments	0.1 dB
T/R Port	-30 dBm to -130 dBm	N/A
	0.2 dB increments	
Display in microvolts	No	Yes
Accuracy		
Gen (TX) Port	± 1.5 dB (> -100 dBm)	0 dBm to -64 dBm ± 1.0 dB
	± 3.0 dB (< -100 dBm)	-64 dBm to -110 dBm ± 2.0 dB
	± 1.0 dB (> -120 dBm)	-110 dBm to -127 dBm ± 3.0 dB
T/R Port	± 2.5dB(< -120dBm, > -130dBm)	N/A
Spurious		
Phase Noise	-105 dBc/Hz @ 20 kHz offset	< -115 dBc/Hz at > 25 kHz from carrier
Harmonics	< -25 dBc	< -30 dBc
Non- Harmonics	< -50 dBc	< -60 dBc at > 5 kHz from carrier
Modulation		
Simple AM		
Waveform	Sinusoidal, single tone	
Rate	1 kHz to 50 kHz	10 Hz to 18 kHz
	1 Hz resolution	0.1 Hz increments
Depth	0 to 99%	0 to 99%
	1% resolution	0.01% increments
Accuracy	±4% of set depth ± 1%	± 0.005%
THD	< 2% (1kHz rate, < 80% mod)	< 0.1% THD
Simple FM		N/A
Waveform	Sinusoidal, single tone	
Rate	1 kHz to 500 kHz	
	1 Hz resolution	

Parameter / Function	Aeroflex ATB-7300	Aeroflex NAV2000R
Depth	10 Hz to 500 kHz	
	10 Hz resolution	
Accuracy	±3% of set deviation	
THD	< 1.5% at max deviation	
Digital / Arbitrary		
Waveform	I/Q arbitrary waveform generator	N/A
Bandwidth	± 20 MHz at 85 MHz carrier	N/A
Analog Input	Sgl ended, 100KOhm, 0.5Vrms	N/A
ADF Specific Data		
Modulation		
Modulation Tones		
Frequency	10Hz to 18000Hz, Def 1020Hz	10 Hz to 18 kHz
Resolution	1 Hz	0.1 Hz
Accuracy	±0.01%	± 0.005%
Distortion	< 0.40% THD	< 0.1% THD
Amplitude Modulation		
Range (per tone)	Total % MOD not to exceed 99%	
1020 Hz Ident	0-99%, Default 40%	0 to 99%, Default 95%
Overall Accuracy	2% of setting for 5% to 90% AM	± 2% of setting for 10% to 95%
Tone Dist.	0.5% maximum	
ILS Specific Data		
Modulation		
Modulation Tones		
Frequency	90 Hz, adj 72 Hz to 108 Hz	90 Hz, 150 Hz, and 1020 Hz ident
	150 Hz, adj 120 Hz to 180 Hz	
	1020Hz ident, adj 10Hz to 18KHz	
Resolution	1 Hz	
Accuracy	0.01%	± 0.005%
Distortion	< 0.40% THD	< 0.1% THD
90/150 Phase		
Range	Adjustable from 0.0 to 359.9°	
Resolution	0.1°	0.01 degree
Amplitude Modulation		
Range (per tone)	Total % MOD not to exceed 99%	Total % MOD not to exceed 99%
1020 Hz Ident	0-99%, Default 20%	0-99%, Default 30%
90 Hz	0-99%, Default 20%	0-99%, Default 30%
150 Hz	0-99%, Default 20%	0-99%, Default 30%
Overall Accuracy	2% of setting for 5% to 90% AM	± 2% of setting for 10% to 95% AM
Tone Dist.	0.5% maximum	2% maximum
DDM		

Parameter / Function	Aeroflex ATB-7300	Aeroflex NAV2000R
Default	0.000 DDM	0.000 DDM
Variable Range	0.400 (Localizer mode) 0.800 (Glideslope mode)	0.400 in 0.001 increments 0.800 in 0.001 increments
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	±0.0003 @ 0 DDM, ±0.0012 @ 0.046 DDM, ±0.0021 @ 0.093 DDM,±0.0034 @ 0.155 DDM,±0.0053 @ 0.200 DDM
Glideslope	0.001 DDM from 0.000 to 0.045 DDM ± 2% from 0.045 to 0.400 DDM	± 0.0003 @ 0 DDM, ± 0.0012 @ 0.045 DDM, ± 0.0021 @ 0.091 DDM, ± 0.0038 @ 0.175 DDM,± 0.0083 @ 0.400 DDM
VOR Specific Data		
Modulation Tones		
Frequencies	30Hz ref, adjustable from 20Hz to 40Hz 30Hz var, adjustable from 20Hz to 40Hz 9960Hz, adj from 9000Hz to 11000Hz 1020Hz id, adj from 10Hz to 18000Hz	30 Hz reference, 30 Hz variable, 9960 Hz, and 1020 Hz IDENT
Resolution	1 Hz	
Accuracy	0.01%	± 0.005%
Distortion	< 0.40% THD	< 0.1% THD
9960 Hz FM	240 to 540 Hz Deviation	480 ± 1 Hz at default frequencies
Radial Range	000.00 to 359.99 Degrees	000.00 to 359.99 degrees
Radial Accuracy	0.05°	Audio: ± 0.01°, RF: 0.05°
Amplitude Modulation		
Range (per tone)	Total % mod not to exceed 99%	Total % mod not to exceed 99%
1020 Hz Ident	0-99%, Default 30%	0-99%, Default 30%
30 Hz Variable	0-99%, Default 30%	0-99%, Default 30%
9960 Hz	0-99%, Default 30%	0-99%, Default 30%
Overall Accuracy	2% of setting for 5% to 90% AM	±2% of setting for 5% to 90% AM
Tone Distortion	0.5% maximum	2% maximum
Ident Specific Mode (ADF< ILS, and VOR		
Ident Code		
Range	A-Z, 0-9	
Length	1 to 5 characters	
Rate	1 to 65 seconds	
Rate Resolution	1 second	
Dot Time		
Range	Adj from 50 to 250 ms, Default 150 ms	
Resolution	1 ms	
Dash Time		
Range	Adj from 150 to 750 ms, Default 450 ms	

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Resolution	1 ms	
Dot/Dash Spacing		
Range	Adj from 50 to 250 ms, Default 150 ms	
Resolution	1 ms	
Character Spacing		
Range	Adj from 150 to 750 ms, Default 450 ms	
Resolution	1 ms	
VHF Generator Specific Data		**N/A**
Generator 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	
AM Modulation		
Frequency	Adj from 10Hz to 50000Hz, Deft 1000Hz	
Modulation %	0-99%, Default 30%	
Resolution	1 Hz	
Freq. Accuracy	± 0.005%	
Overall Accuracy	± 2% of setting for 5% to 90% AM	
Distortion	< 0.40% THD	
VDB Generator Specific Data		**N/A**
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	
Digitizer/Receiver Section		**N/A**

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Installed as Option ATB-ANL		**N/A**
Frequency		**N/A**
Range	250 kHz to 3000 MHz	**N/A**
Resolution	1 Hz	**N/A**
Frequency Measurement	As per Freq Reference	**N/A**
RF Input Level		**N/A**
ANT (RX) Port	+30 dBm	**N/A**
T/R Port	+50 dBm Peak Power, > 50W	**N/A**
Sensitivity		
ANT (RX) Port	-100 dBm	**N/A**
	(>10dB SINAD, FM, 1kHz Rate, 6kHz Deviation, 25kHz BW, 300 Hz to 3.4kHz AF Filter, Preamp OFF)	**N/A**
		N/A
		N/A
Amplitude Measurement		
Direct	+30 dBm max	**N/A**
<500 MHz	< ±1.0 dB accuracy	**N/A**
500 Mhz < 3 GHz	< ±0.7 dB accuracy	**N/A**
ELT Analysis		**N/A**
Installed as Option ATES-ELT		
The instrument will measure the following specified beacon characteristics:		
Carrier frequency		**N/A**
Carrier power		**N/A**
Carrier power 1ms before start of burst		**N/A**
Bit rate		**N/A**
Start time of transmission		**N/A**
Duration of burst		**N/A**
Duration of unmodulated carrier		**N/A**
Modulation phase		**N/A**
Modulation rise time, fall time		**N/A**
Modulation symmetry		**N/A**
And will also provide:		
I/Q samples for examining time plots of modulation		**N/A**
Spectrum fm 406.0 to 406.1MHz for evaluating spurious emissions		**N/A**
All received bits, either 112 or 144 for short/long formats.		**N/A**
Return bit fields broken into		**N/A**
Protected data fields 1 and 2, BCH field 1 and 2, non-protected data field (short message has PDF-1, BCH-1, non-protected field; long message has PDF-1, BCH-1, PDF-2, BCH-2)		**N/A**
Provide calculated BCH-1, BCH-2 for comparison with received bits. (PDF-1 contains short/long flag and the 15-Hex ID number)		**N/A**

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Decoded protocol information from the short/long format data		**N/A**
Protocol used (e.g. ELT serial user protocol, ELT national location protocol)		
Country		**N/A**
Type of auxiliary radio locator		**N/A**
Identification data (e.g. aircraft registration, 24-bit address, call sign, etc, depending on mode)		**N/A**
Latitude/longitude (for long-format location protocols)		**N/A**
DME Analyzer Specific Data		
Measurements		
Trigger Type	Software or RF level triggered	**N/A**
Sweep Time	0.1 to 10.0 seconds	**N/A**
Percent Power	Adj within spectrum analysis span	**N/A**
Occupied Bandwidth		**N/A**
Measured Width	Adj within spectrum analysis span	**N/A**
Percent	Adjustable from 0% to 100%	**N/A**
Rise Time		**N/A**
Start Edge Trigger	0% to 100%, Default 10 %	**N/A**
Stop Edge Trigger	0% to 100%, Default 90 %	**N/A**
Resolution	10 ns steps	**N/A**
Accuracy	± 2% from 1.0uS to 4uS	**N/A**
Fall Time		**N/A**
Start Edge Trigger	0% to 100%, Default 10 %	**N/A**
Stop Edge Trigger	0% to 100%, Default 90 %	**N/A**
Resolution	10 ns steps	**N/A**
Accuracy	± 2% from 1.0uS to 4uS	**N/A**
Pulse Width		**N/A**
Trigger	0% to 100%, Default 50 %	**N/A**
Range	20 ns to 2000 ns in 10 ns steps	**N/A**
Accuracy	± 2% from 2.0uS to 5uS	**N/A**
		N/A
Pulse Spacing		**N/A**
Trigger	0% to 100%, Default 50 %	**N/A**
Range	20 ns to 2000 ns in 10 ns steps	**N/A**
Accuracy	± 2% from 2.0uS to 5uS	**N/A**
VHF Analyzer Specific Data		
		N/A
Measurements		**N/A**
Trigger Type	Software or RF level triggered	**N/A**
Sweep Time	0.1 to 10.0 seconds	**N/A**
VDL		**N/A**
Symbol Clock	10000 Hz to 11000 Hz	**N/A**
Oversample Factor	2, 4, 8, 16, 32	**N/A**

Parameter / Function	Aeroflex ATB-7300	Aeroflex NAV2000R
Sync Factor	Customizable from 0 to 50 symbols	**N/A**
IQ Offset	Enabled or disabled (default)	**N/A**
Interpolation	Linear or cubic spline (default)	**N/A**
Symbol Power Range	Measurable at any symbol in memory	**N/A**
EVM Range	Config. from 1 to no. of sym. in memory	**N/A**
IQ Imbalance Range	Config. from 1 to no. of sym. in memory	**N/A**
IQ Offset Range	Config. from 1 to no. of sym. in memory	**N/A**
Symbol Decoding Range	To the end of the first det. data burst	**N/A**
ACP		**N/A**
Channel Spacing	0 Hz to 50000 Hz	**N/A**
Channel Bandwidth	1000 Hz to 50000 Hz	**N/A**
# of Channels	Carrier, first lower, first upper	**N/A**
Analog Measurements		**N/A**
AM Range	900 Hz to 1100 Hz for accuracy stated (700 Hz to 3000 Hz with diminished accuracy)	**N/A**
		N/A
		N/A
Percent Modulation		**N/A**
# of Sweeps	1 to 20	**N/A**
Accuracy	± 3 %	**N/A**
SINAD		**N/A**
# of Sweeps	1 to 20	**N/A**
Filter Type	C-message	**N/A**
Distortion		**N/A**
# of Sweeps	1 to 20	**N/A**
FM Range		**N/A**
Accuracy	± 3 %	**N/A**
Physical Characteristics		
Weight	60 lbs (27.2kg)	34 lbs (15.42kg)
Dimensions	17.5” x 8” x 24”	17.4” x 5” x 19.3”