

GENERAL DESCRIPTION

The **DTO/Synthesizer Model 7830A** module is a compact, broadband frequency source, covering the frequency range of 0.5 to 20GHz. In *DTO Mode*, the unit features frequency settling times lower than 1uSec, while in *Synthesizer Mode*, frequency accuracy and stability exceeding 2.0 PPM is achieved.



KEY FEATURES

- Broad band coverage
- Fast settling time
- Any step size
- Low spurious
- Lock indication
- Temperature sensor
- Reverse and transient protection

APPLICATIONS

- RF sources
- Radar simulators
- EW simulators
- Electronic Warfare Applications
- Built in testers

GENERAL SPECIFICATIONS

Frequency Range	0.5 - 18 GHz (0.5 - 20 GHz Optional)
RF Output Power	8-13 dBm
RF Power Variations	±1.5 dBm
Output Impedance	50 Ohm
Load VSWR	1.5:1 Max
Harmonics	-20 dBc Typ. (-50 dBc is optional with external filter bank)
Spurious	-60 dBc Typ.
Modulation Frequency	0.1-10 MHz
Modulation sensitivity	50-150 MHz/v (100±10 MHz Option)
Frequency Deviation	±250 MHz Max
Operating Temperature	-20° C to 70° C

GENERAL SPECIFICATIONS

Frequency Pulling	± 100 KHz max
Frequency Pushing	± 200 KHz/V max
Non Operating Temp	-40° C to 80° C
Dimensions	186 X 115 X 50 (mm)
Humidity	95% No Condensation
Power Requirements	+15 VDC/2.5 A, max -15 VDC/0.5 A, max 28 VDC/2.0 A for Heaters
Operating Temperature	-20° C to 70° C
Non Operating Temp	-40° C to 80° C
Humidity	95% No Condensation
Dimensions	186 X 115 X 50 (mm)
Frequency Pulling	± 100 KHz max
Frequency Pushing	± 200 KHz/V max

Note: Specifications are subject to change without notice.

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SYNTHESIZER MODE SPECIFICATIONS

Frequency Resolution	10 Hz		
Freq. Settling Time	100 µSec Typ.		
Accuracy (int. Ref.)	±2.0 PPM		
Phase Noise [dBc/Hz]	2 GHz	10 GHz	18 GHz
	10 KHz	-96	-82 -78
	100 KHz	-100	-98 -95
	1 MHz	-124	-119 -114
Tuning Control	3 Wire Serial bus (Data, Clock, Enable)		
Internal Band selection	5 bits		
External Reference	50 MHz or 100 MHz		
Parallel Control	Up to 24 bits		

DTO MODE SPECIFICATIONS

Linear Tuning Control	12 bits	
Internal Band selection	4 bits	
Tuning Linearity Error	±1 MHz max	
Frequency Resolution (LSB)	<250 KHz	
Frequency Change VS Temp.	<10 MHz full bands	
Freq. Settling time (in 1 µSec)	<±1 MHz full bands	
Post Tuning Drift (in 1 sec)	<±1 MHz full bands	
Phase Noise	@10 KHz	-60 dBc/Hz full bands
	@100 KHz	-80 dBc/Hz full bands
	@1 MHz	-103 dBc/Hz full bands
Residual FM	100 KHz max	

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