

# Dual Mode Frequency Synthesizer/DTO Module



Model:  
MW 15100-9.85-18-D/S



- Very Low Phase Noise
- High Switching Speed
- Wide Frequency Range
- Low Harmonics
- Low Spurious
- Compact Size



## Preliminary Specification: 9.8 to 18 GHz DTO Synthesizer

Dual mode frequency source, operated as a Synthesizer or DTO. High Switching speed, very low phase noise and wide frequency range are the hallmarks of the MW15100-9.85-10-D/S.

No.	Description	Specification	Notes
1	<b>Output frequency range</b>	9.85 to 18GHz	
2	<b>Frequency resolution</b>	167.14 KHz	
3	<b>Frequency settling time Within +100 KHz of final frequency</b>	2.5 $\mu$ sec @ DTO mode 50 $\mu$ sec @ Synthesizer mode	See Note 1
4	<b>Frequency accuracy stability over temperature range</b>	< $\pm$ 25 PPM	When using the internal reference oscillator
5	<b>Aging</b>	<+ 0.5 PPM /1 Year < $\pm$ 2 PPM /10 Years	
6	<b>Output impedance</b>	50 ohm	
7	<b>RF Power output (over frequency and temperature range)</b>	+11 to 16 dBm	
8	<b>Reference clock frequency</b>	100 MHz	
9	<b>Reference clock modes External - when external reference is used and inputted through connector J1. Internal - when internal reference is used and outputted through connector J1.</b>	Input power: -5 to +3 dBm Output Power: -5 dBm minimum	
10	<b>Phase noise @ synthesizer mode</b>	< 1.3 $^{\circ}$ RMS SSB integrated over 10KHz to 10MHz offset from carrier -82 dBc/Hz @ 10KHz -90 dBc/ Hz @ 100KHz -100 dBc/ Hz @ 1MHz -122 dBc/ Hz @ 10MHz	See Note 1



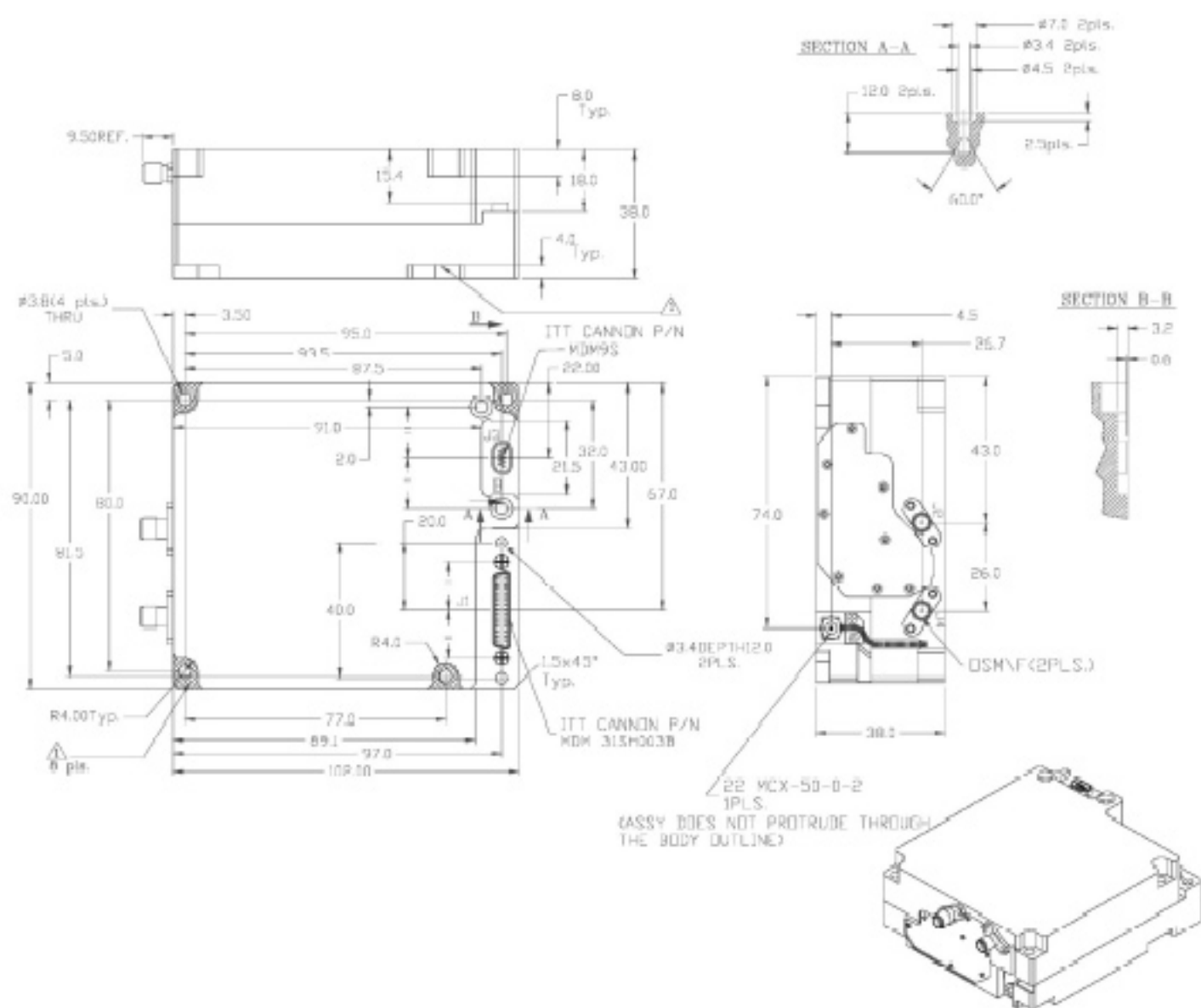
No.	Description	Specification	Notes
11	Noise floor	< -145 dBc/ Hz	
12	Load VSWR	1.5:1 max.	
13	Harmonics and sub harmonics	-45 dBc max	Up to 24 GHz
14	Spurious @ Offset > 10MHz (2-18 GHz) @ Offset < 10MHz (around f <sub>0</sub> )	-65 dBc -40 dBc	See Note 1
15	Supply DC Voltage and Currents:	+5V 1000 mA +15V 1300 mA -15V 300 mA +28V 3000 mA	
16	Connectors		
	RF	J2 - RF Out SMA female J4 - Test Out SMA female J5- Ref In/Out MCX female	
	DC and control	Unit Connector: J1 – MDM 31SH003B J3 – MDM 9SH003	Mating Connector: MDM-31PH003B MDM-9PH003B
17	Control	The control shall be parallel Control input Standard TTL	
18	Data format	24 bit set-up data format	Data format and timing diagrams will be supplied on demand
19	Size	102 x 90 x 38 mm	

**Note:** 1. Trade off is possible between settling time, phase noise and spurious performance. Contact Elisra for detailed.  
2. When using an external reference oscillator accuracy is defined by it.



# Dual Mode Frequency Synthesizer/DTO Module

## OUTLINE DRAWING



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