

FS100-10 Operating Instructions



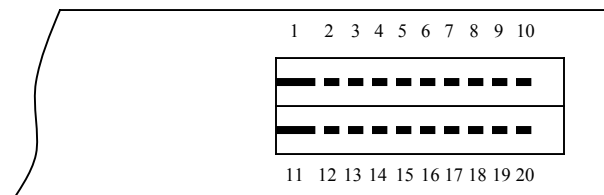
Description

The FS100-10 is a high performance multiplying synthesizer. The 10 MHz input signal is multiplied by ten to generate a 100 MHz output signal. This output signal can be bandpass filtered and amplified if specified. The FS100-10 is provided as a board level module and the following precautions should be observed to obtain optimum performance. The DC voltage to operate the device should be +12 VDC. The positive DC should be applied to the third pin of the card edge connector located on the back of the multiplier; the VDC GND should be connected to the first pin. **The input signal level must be greater than +11 dBm**, please contact SDI if the signal level is lower than 11 dBm, otherwise the synthesizer will not function properly and noise performance will be seriously degraded. The multiplying synthesizer is not a linear device therefore the output power does not vary linearly with input power. The absolute maximum specifications should be observed to obtain the optimum performance and ensure reliability.

Absolute Maximum Ratings

Input power: +16 dBm Maximum
 Reverse Power: +20 dBm Maximum
Do not apply DC voltage on the input!
 Output DC Voltage: 50 VDC Maximum
 DC Supply Voltage: +15 VDC Maximum
 Storage Temperature: -10 to +75 °C
 Operation Environment: 0 to +50 °C

Rearview of the Multiplier





FS100-10 Specifications

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Output power	+13 dBm input	-	10	-	dBm
Impedance	Input Output	- -	50 50	- -	Ohms
Return loss	Input (S11) Output (S22)	- -	-15 -15	- -	dB
Spurious		-	-55	-50	dBc
Harmonic distortion	+10 dBm output	-	-55	-50	dBc
Phase noise referred to 10 MHz input	1 Hz 1 kHz 10 kHz	- - -	-143 -170 -176	-140 -167 -173	dBc/Hz
Temperature-delay coefficient	0 - 50 °C	-	45	50	ps/°C

Warranty

The FS100-10 is warranted to be free of defects under normal operating conditions, as specified, for one year from date of original shipment from SpectraDynamics, Inc (SDI). SDI's obligation and liability under this warranty is expressly limited to repairing or replacing, at SDI's option, any product not meeting the said specifications. This warranty shall be in effect for one (1) year from the date an FS100-10 is sold by SDI. SDI makes no other warranty, express or implied, and makes no warranty of the fitness for any particular purpose. SDI's obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay. Any improper use, operation beyond capacity, substitution of parts not approved by SDI, or any alteration or repair by others in such manner as in SDI's reasonable judgment affects the product materially and adversely shall void this warranty. No employee or representative of SDI is authorized to change this warranty in any way or grant any other warranty.