

KRATOS | GENERAL MICROWAVE Microwave Electronics Division

Series SM Synthesizer

FAST INDIRECT SYNTHESIZER WITH FREQUENCY MODULATION

Main Features

- High Speed: 1 μ sec
- Wide Frequency Range: 2 to 20 GHz
- Frequency Modulation Span: 1 GHz
- Analog & Digital Modulation
- Internal Reference Crystal Oscillator
- High Reliability



APPLICATIONS

KRATOS General Microwave designed the series SM Fast Indirect Synthesizer, features Frequency Modulation while maintaining synthesizer operation. Designed for applications requiring a fast high performance synthesizer that is capable of Frequency Modulation (FM) while operating in the synthesizer mode. Designed for military and non-military applications, Series SM is ideal for applications such as Electronic Warfare (EW) systems, simulators, test systems, and signal generators. The enhanced performance characteristics place series SM in a class of its own and are unmatched by virtually all other synthesizers available today. In addition, the series SM allows the flexibility to customize performance characteristics to specific application requirements. For military applications this synthesizer requires option G09 to meet MIL STD.

MODEL SM6218 – Typical Modulation Spectrum

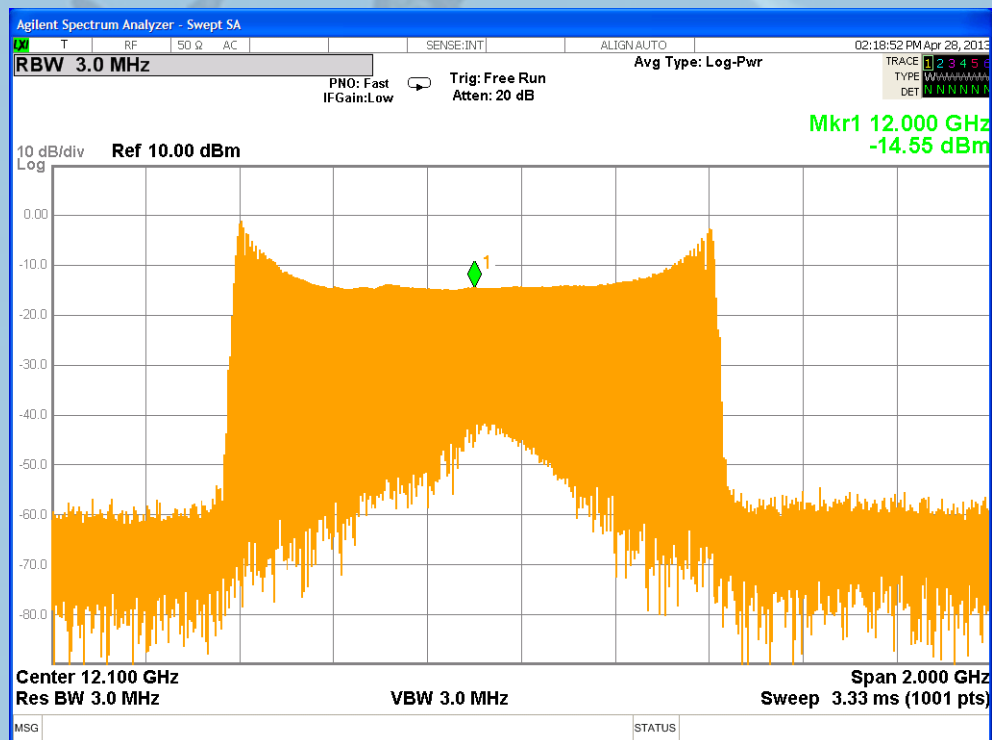


Fig. 1 - 1 GHz Modulation Spectrum using a Sine wave signal

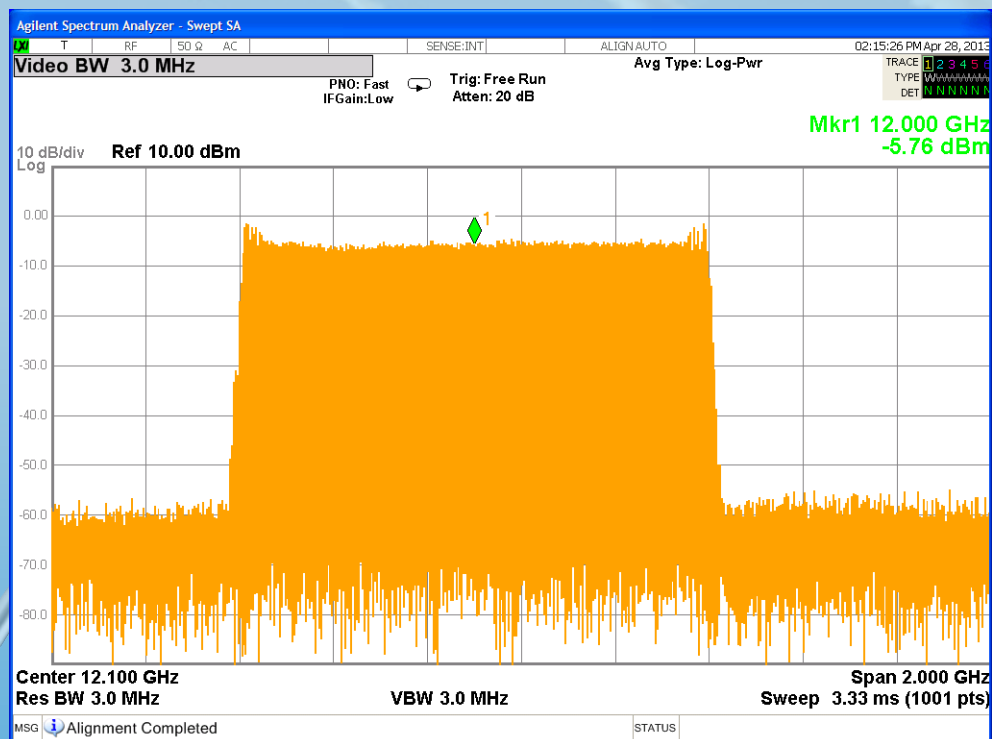


Fig. 2 - 1 GHz Modulation Spectrum using a Triangle signal

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PARAMETER		SPECIFICATION - MODEL		
		SM6218	SM6618	SM6220
1	FREQUENCY RANGE ⁽¹⁾ (GHz)	2 to 18 ⁽¹⁾	6 to 18 ⁽¹⁾	2 to 20 ⁽¹⁾
2	ACCURACY	± 2		
3	FREQUENCY AGING	±2 First year. ±1 per year, after first year		
4	OUTPUT POWER ⁽¹⁾			
4.1	Min. (dBm)	10		
4.2	Variation, over freq. at a given temp., max. (dB)	± 1.5		
4.3	Variation, over temperature, max. (dB)	± 2.5		
5	SETTLING TIME, max. (µsec) ⁽²⁾	1		
6	SSB PHASE NOISE, max (dBc/Hz)			
6.1	@ 100 Hz Offset	-60		-60
6.2	@ 1 kHz Offset	-85		-84
6.3	@ 10 kHz to 1 MHz Offset	-97		-96
6.6	@ 10 MHz Offset	-100		-99
7	HARMONICS, max (dBc)	-30 up to 24 GHz		
8	SUB-HARMONICS, max (dBc)	-55		
9	SPURIOUS, max (dBc) ⁽³⁾	-55		-54
10	FREQUENCY CONTROL (PARALLEL)	18 BITS		
11	FREQ. STEP SIZE, nominal LSB (kHz) ⁽¹⁾	100		
12	REFERENCE OSCILLATOR - EXTERNAL (OPTIONAL) ⁽⁴⁾			
12.1	INPUT FREQUENCY, (MHz) ⁽⁵⁾	100		
12.2	INPUT POWER, (dBm)	0 ±2		
13	MODULATION			
13.1	Bandwidth, (MHz)	DC to 10		
13.2	Frequency Deviation, min. (MHz)	± 500		
13.3	Sensitivity control (3 levels plus Mod. OFF)	2 BITS		
13.4	Digital Sensitivity, nominal (MHz/bit)	1, 1/4, 1/16, Mod. OFF		
13.5	Analog Control, (V)	±1		
13.5	Analog Sensitivity, nominal (MHz/V)	500, 125, 31.25 Mod. OFF		
14	POWER SUPPLY REQUIREMENT, (V)	+12, -12, +5		
15	OPERATING TEMP. (°C) ⁽¹⁾	-20 to +70		
16	OTHER ENVIRONMENTAL PARAMETERS	APPLICABLE FOR AIRBORNE APPLICATIONS		
17	DIMENSIONS, Inches (mm)	6.48 (164.6) x 6.23 (158.2) x 1.24 (31.5)		

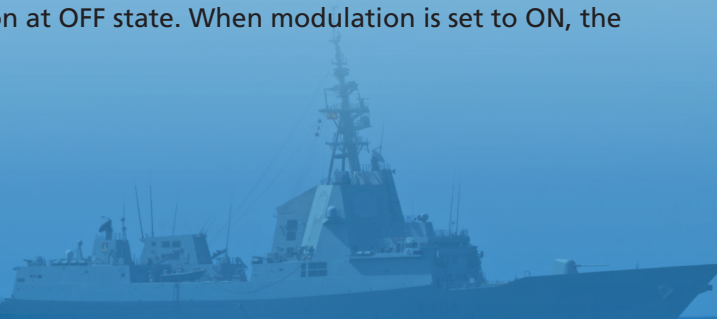
(1) Other values are available, please contact Sales

(2) To within ±1 MHz from the final frequency

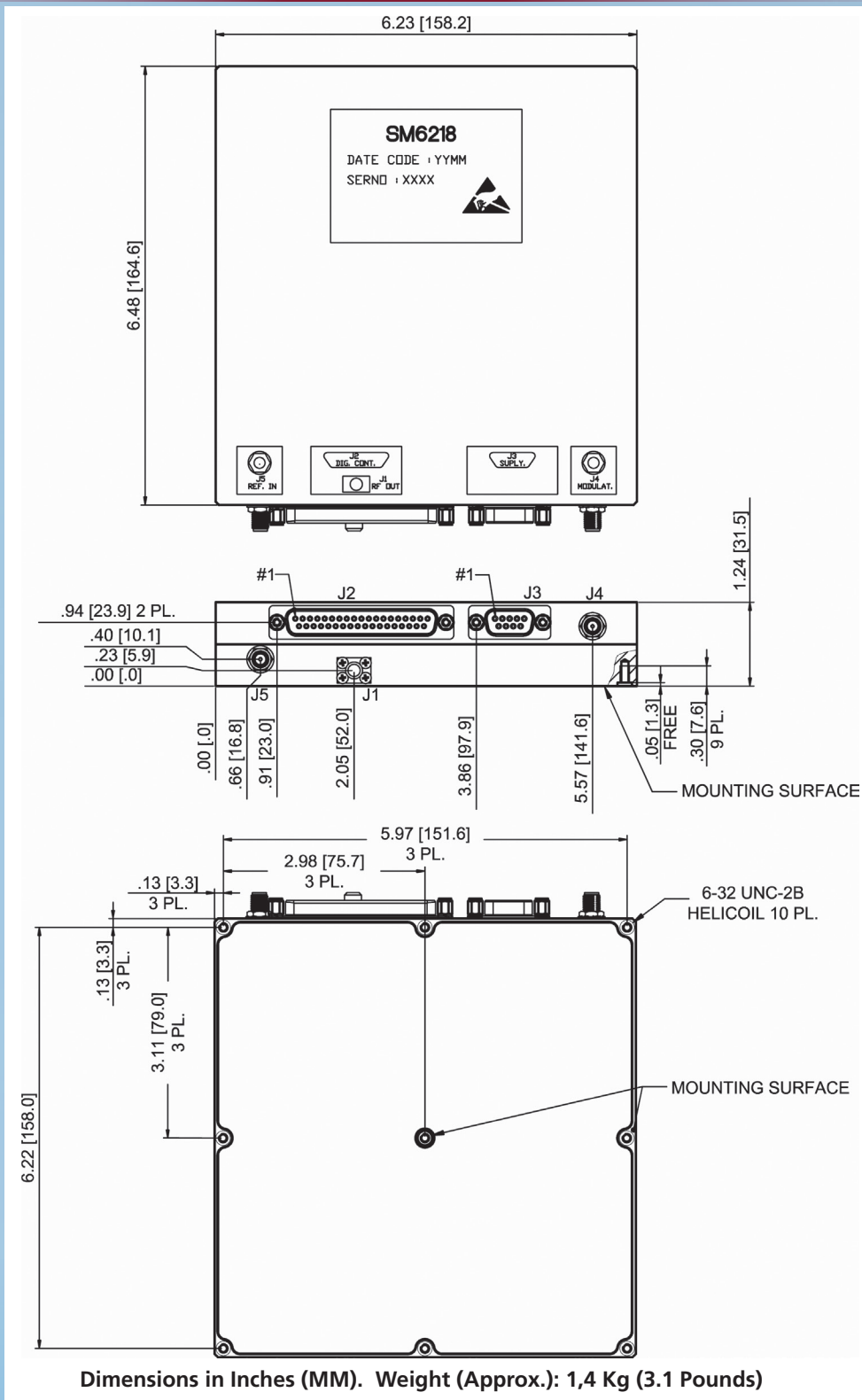
(3) Spurious level is guaranteed during modulation at OFF state. When modulation is set to ON, the spurious level is -50 dBc typical.

(4) Internal Reference Oscillator is optional

(5) 10 MHz Optional



Dimensions and Outline



ISRAEL

JERUSALEM SITE:

20 Pierre Koenig

Jerusalem 9153102

Tel: +972-2-568-9444

kratos-gmi@kratos-med.com

ISRAEL

EYAL SITE:

Kibbutz Eyal

D.N.Hasharon Hatichon 4584000

Tel: +972-9-749-9100

kratos-eyal@kratos-med.com

USA

NEW YORK SITE:

227A Michael Drive

Syosset, New York 11791

Tel: +1-516-802-0900

kratos-gmc@kratosdefense.com

www.kratosmed.com

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