

Sefram

SEFRAM 4415

15MHz Function Generator
DDS (Direct Digital Synthesis)
technology

Accuracy, Ergonomy, Easy-to-use

Performances

- DDS technology
- 15MHz max frequency
- Variable amplitude, offset and symmetry
- Lin / Log sweep mode
- AM, FM modulation
- Gate, triggered, modes
- External frequency counter (100MHz)
- Graphic LCD with backlight

Direct Digital Synthesis

The new SEFRAM 4415, using DDS technology, provides very high quality waveforms with frequency stability and low spurious level.

Ease of use

A menu driven front panel with an easy-to-read graphix LCD display makes the SEFRAM 4415 easy to operate. Parameters changes and data entry can be made using the rotary knob. The waveform is displayed on the LCD.



Modulation and sweep mode

The SEFRAM 4415 provides a very convenient sweep mode (linear or log.) where rate, start and stop frequencies are programmable. Signal can be AM or FM modulated, with variable level (0 to 100%). Modulation can be internal (with 4 predefined frequencies), or external.

Frequency counter

The SEFRAM 4415 integrates a 100MHz autoranging frequency counter with up to 8 digit resolution.

Simplified maintenance

The SEFRAM 4415 integrates a "closed case" automatic calibration feature, which makes the maintenance easy and reduces periodic maintenance operation.

Selection guide for SEFRAM Generators

	BK4017B	SEFRAM 4415	SEFRAM 4422	BK4070A	SEFRAM 4463	SEFRAM 4466	SEFRAM 4468	SEFRAM 4468-2
Function Generator	yes, DDS	yes, DDS	yes, DDS	yes, DDS	yes, DDS	yes, DDS	yes, DDS	yes, DDS
Arbitrary Generator	-	-	✓	✓	✓	✓	✓	✓ - 2 channels
Max sampling Freq.	-	-	50Ms./s	40Ms./s	50Ms./s	80Ms./s	125Ms./s	125Ms./s
Arbitrary Memory	-	-	1k points	32k points	500k points	1M points	4M points	4M points
Sine, square & triangle	✓	✓	✓	✓	✓	✓	✓	✓
Max. frequency sinus	10MHz	15MHz	20MHz	21,5MHz	31MHz	40MHz	80MHz	80MHz
Sweep	lin, log	lin, log	lin, log	lin, log	lin, log	lin, log	lin, log	lin, log
Modulation	-	✓	✓	✓	✓	✓	✓	✓
Interface	RS-232	-	RS-232	RS-232	RS-232 and GPIB	RS-232 and GPIB	RS-232 and GPIB	RS-232 and GPIB



SPECIFICATIONS		SEFRAM 4415	
Frequency characteristics		External	5V p-p for 100% modulation 10kohms impedance
Sinus	0,01Hz to 15MHz	FM Modulation (frequency)	
Square	0,01Hz to 15MHz	Internal	400Hz, 800Hz, 1000Hz or 3000Hz
Triangle	0,01Hz to 2MHz	External	5V c-c for 100% deviation 10kohms impedance
Accuracy (frequency)	±0,005% typical	Sweep mode	
Resolution	6 digits, or 10mHz	Type	linear or log
Output characteristics		Sweep time	10ms to 50s
Amplitude	20mVpp to 10 Vc-c under 50 Ohms 40mV to 20Vc-c open circuit	Frequency counter	
Resolution	3 digits (1000 dots)	Range	5Hz to 100MHz (120MHz typical)
Accuracy	±2% ±20mV under 50 ohms	Resolution	up to 8 digit
Platitude	0.5dB to 1MHz, 1dB to 15MHz	Accuracy	±0,02% ± 2 digit
Offset	±4,5V under 50 Ohms	Sensitivity	25mVrms typical
Resolution	10mV steps, with 3 digits display	Coupling	AC
Précision	±2% ±10mV sous 50 ohms	Inputs / Outputs (BNC connectors)	
Output impedance	50 Ohms ± 3%	TRIG input	TTL compatible, with 50ns min. width max. frequency 1MHz 1k ohms impedance
Accuracy	±2% ±10mV under 50 ohms, which amplitude from 1V to 10V	SYNC output	TTL, under 50 ohms
Waveform characteristics		Entrée MOD IN (modulation)	5V p-p for 100% modulation 10k ohms impedance bandwidth from 0 to 20kHz
Harmonic distortion	-50dBc from 0 to 20kHz -45dBc from 20kHz to 100kHz -35dBc from 100kHz to 1MHz -30dBc from 1MHz to 15MHz < -55dBc DC to 1MHz	GENERAL SPECIFICATIONS	
Spurious	< -55dBc DC to 1MHz	Display	LCD, graphic with backlight
Rise time (square)	< 25ns (10% to 90%) under 50 ohms	Supply	90-264V AC, 47Hz to 63Hz, 30VA
Symetry error	< 1%	Operating temperature range	0°C to 50°C
Variable duty cycle	square, from 20% to 80% up to 2MHz, with 1% steps triangle, from 10% to 90%, with 1% steps	Storage temperature range	-20°C to 70°C
Operating modes		Safety	CEI 1010 cat I
Continuous	output continuous at programmed parameters	Dimensions	88 x 210 x 213 mm
Triggered	output quiescent until triggered by an internal or external or manual trigger	Weight	2,5 Kg
Gate	waveform is executed for the duration The last waveform started is completed	Supplied with: User's manual Main cord	
Trigger source	external, manual		
Modulation			
AM Modulation (amplitude)			
Internal	400Hz, 800Hz, 1000Hz or 3000Hz		
Modulation depth	variable from 0% to 100%, with 1% steps		

Specifications subject to change without notice- FT4415A00



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For assistance and ordering