

6.0 GHz,with TCXO, micro SD card datalogger, Bench type

FREQUENCY COUNTER

Model : FC-6000SD

ISO-9001, CE, IEC1010

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02-2389-0101



Frequency Range: 10 Hz to 6 GHz

Resolution: Varies by gate time; as low as 0.1 Hz.

Sensitivity:

6 GHz: ≤ 30 mVrms (950 MHz to 6 GHz)

1 GHz: ≤ 30 mVrms (10 MHz to 1 GHz)

10 MHz & Period: ≤ 15 mVrms

Time Base Stability: 1 PPM (-20 to 70°C)

SD memory card. 1 GB to 256 GB.

RS 232/USB PC computer interface



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The Art of Measurement

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FEATURE

- * TCXO (temperature compensated crystal oscillator) time base, high stability & accuracy.
- * High sensitivity for the VHF & UHF frequency measurement, useful for the CB amateur.
- * Wide measuring range up to 6.0 GHz.
- * Used the exclusive Microprocessor IC offered the intelligent function: Frequency, Period, Clock Width & Duty Multi resolution, Data hold, Relative measurement, Data record (Max., Min., Average reading).
- * 4.3 " TFT LCD .
- * 0.1 Hz resolution for 10 MHz.
- * LCD display for low power consumption & clear read-out even in bright ambient light condition.
- * Power supply from battery or AC to DC 9V adapter.
- * RS 232 PC serial interface.

GENERAL SPECIFICATION

Circuit	4.3 " TFT LCD 480 x 272 Dots.	
Measurement	Frequency, Data hold, Relative, Memory (max., min., average), Period, Clock Width & Duty	
Range	6.0 GHz	950 MHz to 6000 MHz (INPUT A)
	1 GHz	10 MHz to 1 GHz.(INPUT B)
	10 MHz & Period	10 Hz to 10 MHz(INPUT C)
	Clock width&Duty	10 Hz to 100 KHz(INPUT C)
Resolution Sampling Time	Ref. the following "Table for Resolution & Sample Time".	
Sensitivity (0 dB Function)	6 GHz	≤ 30 mVrms(950 MHz to 6 GHz).
	1 GHz	≤ 30 mVrms(10 MHz to 1 GHz).
	10 MHz & Period	≤ 15 mV rms.(10 Hz to 10 MHz)
Max. functional signal input (Sensitivity set to -20 dB position)	6 GHz	≤ 1 Vrms(950 MHz to 1.5 GHz) ≤ 4 Vrms(1.6 GHz to 6 GHz)
	1 GHz	≤ 4 V rms
	10 MHz ,Period ,	≤ 15 Vrms
	Clock width & Duty	3Vpp ~ 5 Vpp
Over-input (Max. signal will not hurt the circuit)	6.0 GHz & 1 GHz range :Max.4 V rms.	
	10 MHz & Period, Max. 15 Vrms	
Time Base Stability vs. Temp.	1 PPM (- 20 to 70 °C).	
Frequency Accuracy	$\pm (2 \text{ PPM reading} + 1 \text{ d})$ * at 23 ± 5 °C	
Width/Duty Accuracy	$\pm (3 \% \text{ reading} + 20 \text{d})$ * at 23 ± 5 °C	
Time Base circuit	20 MHz, TCXO (temperature compensated crystal oscillator).	
Input Connector	6 GHz range : N coaxial connector.	
	1 GHz range : N coaxial connector.	
	10 MHz & Period range : BNC connector.	
Case	Durable & strong ABS-plastic housing with handle.	
Datalogger Sampling Time Setting range	Auto	1 to 3600 sec. @ Sampling time can set to 1 second, but memory data may loss.
	Manual	Push the data logger button once will save data one time. @ Set the sampling time to 0 second.

		@ Manual mode, can also select the 1 to 99 position (Location) no.
Data error no.	≤ 0.1 % no. Of total saved data typically.	
Memory Card	SD memory card. 1 GB to 256 GB.	
Advanced setting	* Set clock time (Year/Month/Date,Hour/Minute/ Second) * Set sampling time * Auto power OFF management * Set beep Sound ON/OFF * Decimal point of SD card setting * SD memory card Format	
Data Hold	Freeze the display reading.	
Memory Recall	Maximum & Minimum value.	
Sampling Time of Display	Approx. 1 second.	
Data Output	RS 232/USB PC computer interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.	
Operating Temp.	0 to 50 °C (32 to 122 °F).	
Operating Humidity	Less than 80%.	
Power Supply	6 x 1.5 V AA (UM-3) battery (Alkaline or Heavy Duty) or AC to DC 9V Linear power adapter.	
Power Consumption (-20 dB position)	6 GHz : Approx. DC 310 mA	
	1 GHz : Approx.DC 220 mA.	
	10 MHz & Period range	
	Approx. DC 150 mA.	
AC Adapter Power Input	Optional, Linear AC to 9V DC , 800 mA rating,central positive for socket.	
Dimension	295 x 236 x 98 mm (11.6 x 9.3 x 3.9 inch).	
Weight	1465 g/3.23 LB (without battery).	
Standard Accessories	Instruction Manual 1 PC.	
Optional Accessories	PB-21	Direct probe with BNC connector & alligator clip pairs, available for 10 MHz range
	BB-22	Direct probe with double BNC connector, available for 100 MHz & 10 MHz range.
	NN-23	Direct probe with double N coaxial connector, available for 1000, 6000 MHz range.
	NB-24	N coaxial connector to BNC connector adapter.
	UPCB-02	Isolated RS232 cable.
	AC-AA110V9	Linear AC to 9V DC , 800 mA rating
	AC-AG220V9	Linear AC to 9V DC , 800 mA rating

TABLE FOR RESOLUTION & SAMPLE TIME

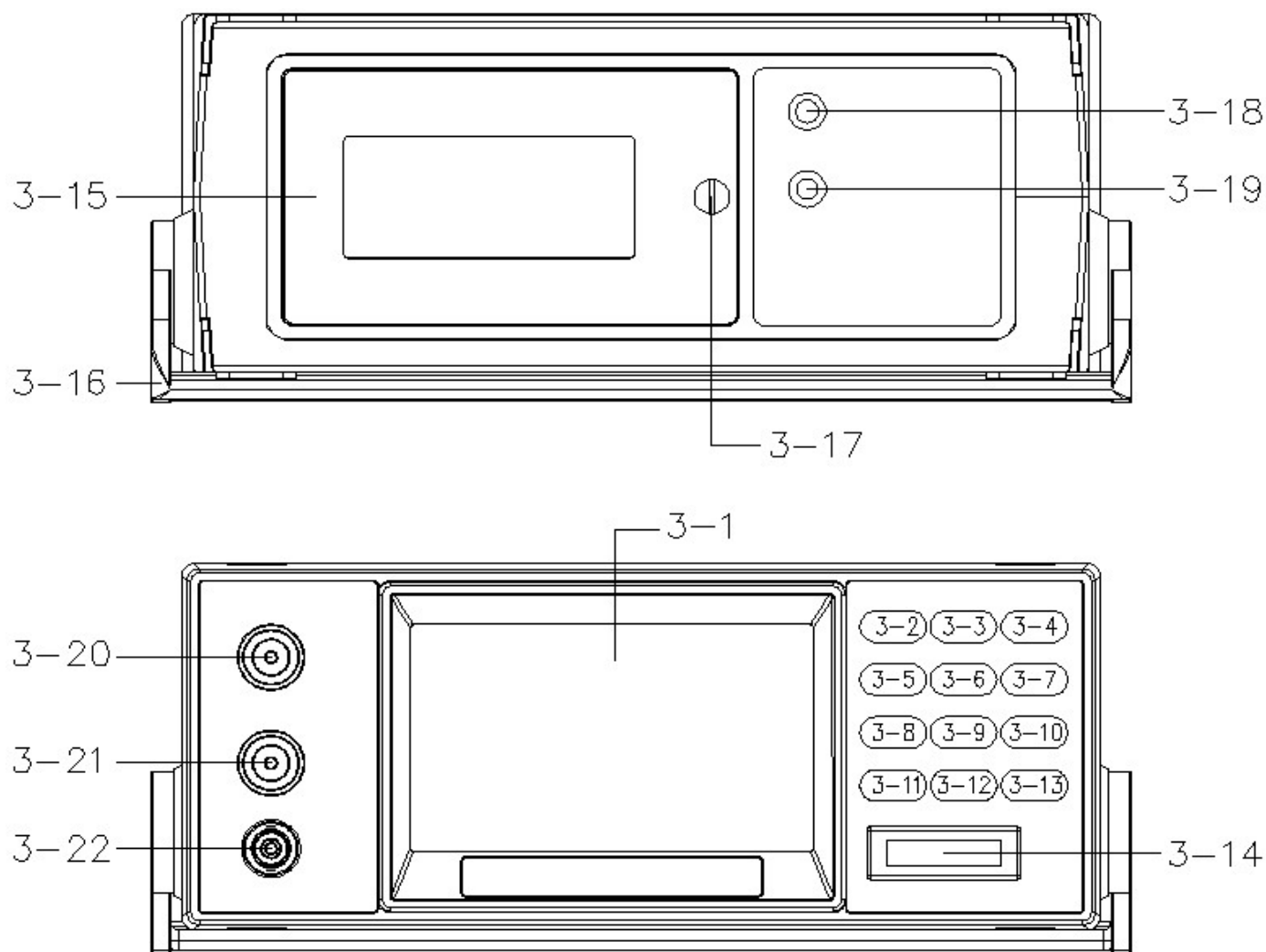
Range	Gate Time Select	Resolution
6000 MHz (6.0 GHz)	0.5 SEC	1000 Hz
	6.5 SEC	100 Hz
	4 SEC	200 Hz
	2 SEC	500 Hz
1000 MHz (1 GHz)	1 SEC	100 Hz
	9 SEC	10 Hz
	8 SEC	20 Hz
	3 SEC	50 Hz
10 MHz	0.5 SEC	10 Hz

1.5 SEC	1 Hz
6 SEC	0.2 Hz
11 SEC	0.1 Hz

* Appearance and specifications listed in this brochure are subject to change without notice.

FC-6000SD+240205A

FRONT PANEL DESCRIPTION



3-1.Display	3-12.HOLD key button
3-2.FREQ/REL key button	3-13.ENTER/SETUP key button
3-3.PERIOD key button	3-14.SD card socket
3-4.WIDTH/DUTY key button	3-15.Battery Cover/Battery compartment
3-5.INPUT key button	3-16.Handle
3-6.REC/LOG key button	3-17.Battery Cover Screw
3-7.RESO key button	3-18.RS232 socket
3-8.▲ key button	3-19.DC 9V power adapter socket
3-9.Power/Backlight key button	3-20.6000 MHz(RF, INPUT A) input, N type Socket
3-10.▼ key button	3-21.1000 MHz(RF, INPUT B) input, N type Socket
3-11.EXIT/ 0/20 dB key button	3-22.10 MHz(LF, INPUT C) input, BNC Socket

EXCEL data screen (for example)

Position	Date	Time	FREQ.	Unit	Period	Unit	Width	Unit	Duty	Unit
1	2022/8/24	13:56:33	5	Hz	179.79	mS	94.59	mS	52.26	%
1	2022/8/24	13:56:35	100	Hz	10	mS	5	mS	50	%
1	2022/8/24	13:56:37	200	Hz	5	mS	2.5	mS	50	%
1	2022/8/24	13:56:39	299	Hz	3.34	mS	1.67	mS	50	%
1	2022/8/24	13:56:41	500	Hz	2	mS	1	mS	50	%
1	2022/8/24	13:56:43	1000	Hz	1002.49	uS	501.07	uS	49.98	%
1	2022/8/24	13:56:45	5009	Hz	199.62	uS	99.68	uS	49.93	%
1	2022/8/24	13:56:47	10020	Hz	99.8	uS	49.77	uS	49.86	%
1	2022/8/24	13:56:49	50100	Hz	19.96	uS	9.85	uS	49.34	%
1	2022/8/24	13:56:51	100300	Hz	9.97	uS	4.86	uS	48.74	%

The 16 digits data stream will be displayed in the following format :

D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0

D15	(02) Start Word		
D14	2		
D13	1 CH = 1		
D12 & D11	Frequency for Display		
	Hz=31	MHz = 67	%=03
	KHz=33	μS= 75	mS= 74
	S= 76	nS= H3	
D10	Polarity 0 = Positive 1 = Negative		
D9	Decimal Point(DP), position from right to the left 0 = No DP, 1= 1 DP, 2 = 2 DP, 3 = 3 DP		
D8 to D1	Display reading, D1 = LSD, D8 = MSD For example : If the display reading is 1234, then D8 to D1 is : 00001234		
D0	(0D) End Word		

RS232 setting

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit

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