# 6.0 GHz, with TCXO, micro SD card datalogger, Bench type **FREQUENCY COUNTER** ISO-9001, CE, IEC1010

# Model : FC-6000SD







The Art of Measurement

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

# **FREQUENCY COUNTER**

## Model : FC-6000

### FEATURES

* 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,						
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 & Electrical Specifications (23 ±5 ℃)

480 x 272 Dots.       Measurement     Frequency, Data hold, Relative, Memory (max., min., average), Period.       Range     6.0 GHz     500 MHz to 6000 MHz       800 MHz     10 MHz to 800 MHz.       10 MHz     10 HHz to 10 MHz       Period     10 Hz to 10 MHz       Resolution     Ref. the following "Table for Resolution & Sampling Time     Sample Time".       Sensitivity     10 MHz     30 mV rms. (10 Hz to 10 MHz)     (10 Hz to 9 MHz)       Sensitivity     10 MHz     30 mV rms. (10 Hz to 9 MHz)     (10 Hz to 9 MHz)       set to high position )     800 MHz     50 mV rms. (10 Hz to 9 MHz)     (10 Hz to 10 MHz)       Kax. functional     10 MHz     50 mV rms. (100 Hz to 800 MHz)     (100 Hz to 800 MHz)       6.0 GHz     50 mV rms. (100 Hz to 1 GHz)     Typical : 10 mV rms. (100 Hz to 6 GHz)     (10 Hz to 6 GHz)       Max. functional signal input (Sensitivity     10 MHz     15 V rms.     (15 V rms.		4.3 " TFT LCD				
Memory ( max., min., average ), Period.       Range     6.0 GHz     500 MHz to 6000 MHz       800 MHz     10 MHz to 800 MHz.       10 MHz     10 Hz to 10 MHz       Period     10 Hz to 10 MHz       Resolution     Ref. the following "Table for Resolution & Sampling Time       Sensitivity     10 MHz       30 mV rms.     (10 Hz to 10 MHz)       ( Sensitivity Sw.     Period       set to high     (10 Hz to 10 MHz)       position )     800 MHz       800 MHz     30 mV rms.       (10 Hz to 10 MHz)       ( Sensitivity Sw.       set to high     (10 Hz to 9 MHz)       position )     800 MHz       800 MHz     50 mV rms.       (10 Hz to 100 MHz)       Typical : 25 mV rms.       (100 Hz to 800 MHz)       6.0 GHz     50 mV rms.       (100 Hz to 1 GHz)       Typical : 10 mV rms.       (10 Hz to 1 GHz)       Typical : 10 mV rms.       (10 Hz to 6 GHz)       Max. functional     10 MHz       signal input     &       (Sensitivity     Period <td></td> <td colspan="5"></td>						
Memory ( max., min., average ), Period.       Range     6.0 GHz     500 MHz to 6000 MHz       800 MHz     10 MHz to 800 MHz.       10 MHz     10 Hz to 10 MHz       Period     10 Hz to 10 MHz       Resolution     Ref. the following "Table for Resolution & Sampling Time       Sensitivity     10 MHz     30 mV rms.       (Sensitivity Sw.     Period     Typical : 15 mV rms.       set to high     (10 Hz to 9 MHz)       position )     800 MHz     50 mV rms.       (10 Hz to 10 MHz)     800 MHz       B00 MHZ     50 mV rms.       (10 Hz to 10 MHz)     10 Hz to 100 MHz)       for Hz to 100 MHz     10 Hz to 100 MHz)       6.0 GHz     50 mV rms.       (100 Hz to 800 MHz)     6.0 GHz       6.0 GHz     50 mV rms.       (100 Hz to 1 GHz)     Typical : 10 mV rms.       (100 Hz to 6 GHz)     Typical : 15 V rms.       (10 Gerad)     15 V rms.       (10 Gerad)     15 V rms.	Measurement					
800 MHz   10 MHz to 800 MHz.     10 MHz   10 Hz to 10 MHz     Period   10 Hz to 10 MHz     Resolution   Ref. the following "Table for Resolution &     Sampling Time   Sample Time".     Sensitivity   10 MHz   30 mV rms.     (Sensitivity Sw.   %   (10 Hz to 10 MHz)     Period   Typical : 15 mV rms.     (Sensitivity Sw.   9eriod   Typical : 15 mV rms.     (10 Hz to 9 MHz)   800 MHz   50 mV rms.     (10 Hz to 100 MHz)   Typical : 25 mV rms.     (100 Hz to 800 MHz)   6.0 GHz   50 mV rms.     (100 Hz to 100 Hz)   Typical : 10 mV rms.     (100 Hz to 160 MHz)   Typical : 10 mV rms.     (100 Hz to 600 MHz)   6.0 GHz   50 mV rms.     (100 Hz to 16Hz)   Typical : 10 mV rms.     (100 Hz to 16Hz)   Typical : 10 mV rms.     (100 Hz to 6 GHz)   15 V rms.     signal input   %   Period						
10 MHz     10 Hz to 10 MHz       Period     10 Hz to 10 MHz       Period     10 Hz to 10 MHz       Resolution     Ref. the following "Table for Resolution & Sample Time".       Sensitivity     10 MHz       10 MHz     30 mV rms. (10 Hz to 10 MHz)       ( Sensitivity Sw. set to high position )     Period       800 MHz     50 mV rms. (10 Hz to 100 MHz)       Typical : 25 mV rms. (100 Hz to 800 MHz)       6.0 GHz     50 mV rms. (100 Hz to 1 GHz)       Typical : 10 mV rms. (100 Hz to 6 GHz)       Max. functional signal input (Sensitivity     10 MHz       10 MHz     15 V rms.	Range	6.0 GHz				
Period     10 Hz to 10 MHz       Resolution     Ref. the following "Table for Resolution & Sampling Time     Sample Time".       Sensitivity     10 MHz     30 mV rms.       &     (10 Hz to 10 MHz)       (Sensitivity Sw.     %     (10 Hz to 10 MHz)       set to high     0 MHz     50 mV rms.       yobsition )     800 MHz     50 mV rms.       (10 Hz to 100 MHz)     Typical : 15 mV rms.       (10 Hz to 100 MHz)     10 Hz to 100 MHz)       for Hz to 100 MHz     50 mV rms.       (100 Hz to 300 MHz)     6.0 GHz       6.0 GHz     50 mV rms.       (100 Hz to 1 GHz)     Typical : 10 mV rms.       (100 Hz to 6 GHz)     Typical : 10 mV rms.       (1VGHz to 6 GHz)     15 V rms.       signal input     %       (Sensitivity     Period		800 MHz	10 MHz to 800 MHz.			
Resolution Sampling Time Ref. the following "Table for Resolution & Sample Time".   Sensitivity 10 MHz 30 mV rms.   (Sensitivity Sw. 10 MHz 30 mV rms.   (Sensitivity Sw. Period Typical : 15 mV rms.   (10 Hz to 10 MHz ) 9 MHz )   position ) 800 MHz 50 mV rms.   (10 Hz to 100 MHz ) 10 Hz to 9 MHz )   position ) 800 GHz 50 mV rms.   (10 Hz to 100 MHz ) 10 Hz to 100 MHz )   Typical : 25 mV rms. (100 Hz to 800 MHz )   6.0 GHz 50 mV rms.   (100 Hz to 1 GHz ) Typical : 10 mV rms.   (100 Hz to 6 GHz ) 10 MHz   signal input &   (Sensitivity Period		10 MHz				
Sampling Time Sample Time".   Sensitivity 10 MHz 30 mV rms.   (Sensitivity Sw. 8 (10 Hz to 10 MHz )   (Sensitivity Sw. Period Typical : 15 mV rms.   set to high (10 Hz to 9 MHz )   position ) 800 MHz 50 mV rms.   (10 Hz to 100 MHz ) 7ypical : 25 mV rms.   (100 Hz to 800 MHz ) 6.0 GHz 50 mV rms.   (100 Hz to 1 GHz ) Typical : 10 mV rms.   (100 Hz to 6 GHz ) Typical : 10 mV rms.   (10 Genz in 10 MHz in 10 MLz in 10 Mz in		Period	10 Hz to 10 MHz			
Sensitivity     10 MHz     30 mV rms.       (Sensitivity Sw.     8     (10 Hz to 10 MHz )       yeriod     Typical : 15 mV rms.       (10 Hz to 9 MHz )     (10 Hz to 9 MHz )       position )     800 MHz     50 mV rms.       (10 Hz to 100 MHz )     10 Hz to 100 MHz )       6.0 GHz     50 mV rms.       (100 Hz to 800 MHz )     6.0 GHz       6.0 GHz     50 mV rms.       (100 Hz to 1 GHz )     Typical : 10 mV rms.       (100 Hz to 6 GHz )     110 MHz       signal input     8       (Sensitivity     Period	Resolution					
Image: Non-Section (Sensitivity Sw. set to high position )     & (10 Hz to 10 MHz )       8     (10 Hz to 10 MHz )       9     Period       10 Hz to 9 MHz )     10 Hz to 9 MHz )       800 MHz     50 mV rms. (10 Hz to 100 MHz )       10 Hz to 100 MHz )     Typical : 25 mV rms. (100 Hz to 800 MHz )       6.0 GHz     50 mV rms. (100 Hz to 1 GHz )       10 MHz     10 mV rms. (10 GHz to 6 GHz )       Max. functional signal input (Sensitivity     10 MHz Period	Sampling Time	Sample Time".				
Sensitivity Sw.     Period     Typical : 15 mV rms.       set to high     (10 Hz to 9 MHz)       position )     800 MHz     50 mV rms.       (10 Hz to 100 MHz)     Typical : 25 mV rms.       (100 Hz to 800 MHz)     6.0 GHz       6.0 GHz     50 mV rms.       (100 Hz to 1 GHz)     Typical : 10 mV rms.       (100 Hz to 6 GHz)     Typical : 10 mV rms.       (100 Hz to 6 GHz)     Typical : 10 V rms.       (10 GHz to 6 GHz)     15 V rms.       (11 GHz to 6 GHz)     15 V rms.       (12 Gensitivity     Period	Sensitivity	10 MHz	Iz 30 mV rms.			
set to high position )     (10 Hz to 9 MHz )       800 MHz     50 mV rms. (10 Hz to 100 MHz )       Typical : 25 mV rms. (100 Hz to 800 MHz )       6.0 GHz     50 mV rms. (100 Hz to 1 GHz )       Typical : 10 mV rms. (100 Hz to 1 GHz )       Typical : 10 mV rms. (100 Hz to 6 GHz )       Max. functional signal input (Sensitivity     10 MHz Period		& (10 Hz to 10 MHz )				
position )     800 MHz     50 mV rms. (10 Hz to 100 MHz )       Typical : 25 mV rms. (100 Hz to 800 MHz )     50 mV rms. (100 Hz to 800 MHz )       6.0 GHz     50 mV rms. (100 Hz to 1 GHz )       Typical : 10 mV rms. (100 Hz to 1 GHz )       Typical : 10 mV rms. (1VGHz to 6 GHz )       Max. functional signal input (Sensitivity     10 MHz       8	( Sensitivity Sw.	Period	Typical : 15 mV rms.			
(10 Hz to 100 MHz )       Typical : 25 mV rms. (100 Hz to 800 MHz )       6.0 GHz     50 mV rms. (100 Hz to 1 GHz )       Typical : 10 mV rms. (100 Hz to 6 GHz )       Max. functional signal input (Sensitivity     10 MHz Period	set to high		(10 Hz to 9 MHz)			
(10 Hz to 100 MHz)       Typical : 25 mV rms. (100 Hz to 800 MHz)       6.0 GHz     50 mV rms. (100 Hz to 1 GHz)       Typical : 10 mV rms. (100 Hz to 6 GHz)       Max. functional signal input (Sensitivity     10 MHz Period	position)	800 MHz	50 mV rms.			
Typical : 25 mV rms. (100 Hz to 800 MHz)       6.0 GHz     50 mV rms. (100 Hz to 1 GHz) Typical : 10 mV rms. (1VGHz to 6 GHz)       Max. functional signal input (Sensitivity     10 MHz Period	1 /		(10 Hz to 100 MHz)			
(100 Hz to 800 MHz)       6.0 GHz     50 mV rms. (100 Hz to 1 GHz)       Typical : 10 mV rms. (1VGHz to 6 GHz)       Max. functional signal input (Sensitivity     10 MHz Period						
(100 Hz to 1 GHz )       Typical : 10 mV rms.       (1VGHz to 6 GHz )       Max. functional     10 MHz       signal input     &       ( Sensitivity     Period						
Typical : 10 mV rms. (1VGHz to 6 GHz )   Max. functional signal input (Sensitivity 10 MHz   4 15 V rms.		6.0 GHz	50 mV rms.			
(1VGHz to 6 GHz )   Max. functional 10 MHz   signal input &   ( Sensitivity Period			(100 Hz to 1 GHz)			
Max. functional 10 MHz 15 V rms. signal input & ( Sensitivity Period			Typical : 10 mV rms.			
signal input & ( Sensitivity Period			(1VGHz to 6 GHz)			
(Sensitivity Period	Max. functional	10 MHz	15 V rms.			
	signal input	&	×			
	set to 20 Db					
position ) 6.0 GHz 4 V rms.	position )	6.0 GHz				
( 400 MHz to 6.0 GHz )						
		10 MHz & Period range :				
(Max. signal Max.15 V rms.						
5		6.0 GHz & 100 MHz range :				
	/	Max. 4 V rms.				
		1.5 PPM ( 10 to 30 °C ).				
Stability vs. Temp.						
		$\pm (2 \text{ PPM} + 1 \text{ d})$				
Time Base circuit 20 MHz, TCXO (temperature		23± 5 °C, after calibration.				
	Time base circuit	compensated crystal oscillator).				
Input Connector 10 MHz & Period range : BNC connector.	Input Connector	10 MHz & Period range : BNC connector				
800 MHz range : N coaxial connector.						
6000 MHz : N coaxial connector.						
Case Durable & strong ABS-plastic housing	Case					
with handle.						
Datalogger Auto 1,2,,5,10,30,60,120,300,600,1800,3600 sec.	Datalogger	Auto	1,2,,5,10,30,60,120,300,600,1800,3600 sec.			
Sampling Time @ Sampling time can set to 1 second,						
Setting range but memory data may loss.	Setting range					
Manual Push the data logger button		Manual F				
once will save data one time.		1 1				
@ Set the sampling time to		0	@ Set the sampling time to			
0 second.						
@ Manual mode, can also select the						
1 to 99 position (Location) no.		0	@ Manual mode, can also select the			

Data error no.	< 0.1 %	6 no. Of total saved data typically.				
Memory Card	$\leq 0.1$ % no. Of total saved data typically. SD memory card. 1 GB to 16 GB.					
Advanced		ock time (Year/Month/Date,Hour/Minute/ Second )				
setting	* Set sampling time					
Setting		power OFF management				
		eep Sound ON/OFF				
		hal point of SD card setting				
Data Hala	* SD memory card Format					
Data Hold	Freeze the display reading.					
Memory Recall	Maximum & Minimum value.					
Sampling Time	Approx. 1 second.					
of Display						
Data Output		USB PC computer interface.				
		nect the optional RS232 cable				
		B-02 will get the RS232 plug.				
		* Connect the optional USB cable				
		-01 will get the USB plug.				
Operating Temp.	0 to 50 °C ( 32 to 122 °F ).					
Operating	Less than 80%.					
Humidity						
Power Supply	6 x 1.5 V AA ( UM-3 ) battery					
	or AC to	or AC to DC 9V adapter.				
Power	6000 MHz : Approx. DC 167 mA					
Consumption	800 MHz : Approx.DC 157 mA.					
	10 MHz & Period range					
	Approx. DC 90 mA.					
AC Adapter	Optional, 9V DC , 300 to 500 mA rating,					
Power Input	central positive for socket.					
Dimension	280 x 210 x 90 mm ( 11.0 x 8.3 x 3.5 inch ).					
Weight	1200 g/0.27 LB (including battery).					
Standard	Instruction Manual 1 PC.					
Accessories	-					
Optional	PB-21	Direct probe with BNC connector &				
Accessories		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 800, 6000				
		MHz range.				
	NB-24	N coaxial connector to BNC				
		connector adapter.				
	UPCB-	Isolated RS232 cable.				

#### TABLE FOR RESOLUTION & SAMPLE TIME

Range	Gate Time Select	Resolution	Sampling Time	
	FAST	10 Hz	0.5 SEC	
	SLOW	1 Hz	1.25 SEC	
10 MHz	SLOW (select 1)	0.2 Hz	6 SEC	
	SLOW (select 2)	0.1 Hz	11 SEC	
	FAST	100 Hz	0.75 SEC	
	SLOW	10 Hz	6 SEC	
800 MHz	SLOW (select 1)	20 Hz	5 SEC	
	SLOW (select 2)	50 Hz	1.5 SEC	
	FAST	1000 Hz	0.5 SEC	
6000 MHz	SLOW	100 Hz	2.75 SEC	
(6.0 GHz)	SLOW (select 1)	200 Hz	1.5 SEC	
	SLOW (select 2)	500 Hz	0.75 SEC	