

# SURECOM SF401-PLUS Portable CTCSS/DCS Decoder Frequency Counter

## Description

### Introduction:

- The frequency meter capable of measuring the parameters of the frequency of the continuous carrier signal walkie-talkies , with signal strength indicator. it is the tool of choice for maintenance personnel ,test frequency and signal strength of wireless enthusiasts.
- This portable frequency counter is designed for counting continuous wave signal comes from Two-way Radio.
- There are easy ranges for you to choose. The ranges cover most of the frequency of the two way radios you want to measure.
- Its four-button control is easy to use and its small size allows you to carry it anywhere you like.
- Work by TCXO(Temperature Compensate X'tal (crystal) Oscillator) ,In the range of  $-45^{\circ}\text{C} \sim 65^{\circ}\text{C}$  can reach  $\pm 2 \sim \pm 4\text{ppm}$  accuracy
- This include very interesting frequency areas such as 2m HAM radio, all VHF and UHF
- DMR Radio signal e frequency counter.
- Easy Battery level

### Feature & Specification:

- Frequency range: 27Mhz-3000Mhz
- **! Note: (27MHz to 100MHz It can not be guaranteed and the corresponding normal emission appliance)**
- CTCSS/DCS Decoder (must be 136-174/400-520MHz)
- Frequency counter for DMR radio
- Frequency digital 0.000 or 0.0000 (  $\pm 0.001$  )
- Work by TCXO( Temperature Compensate X'tal (crystal) Oscillator) 2 ~ 2.5ppm
- Frequency Response time: 0.2-0.5sec.( CTCSS/CDCSS >0.5-1sec)
- TFT Color Display 240 x 320 ,LCD Dim level setting
- Build-in Li-ion battery
- Net Weight: 113g
- 4 buttons control
- Auto power off 1-9minutes
- Charging battery LED indicator

### Specifications for SF-401 and SF-401 PLUS

<b>FUNTION</b>	<b>SF-401-PLUS</b>
DIGITAL RADIO signal:	DMR
CTCSS/DCS CHECK	136-174 / 400-520MHz
Signal attenuation s.w.	-10db
Battery Built-in:	level ICON
TFT LCD:	320 x 240 pixels
Li-ion Battery build-in :	3.7V 600mah
Current consumption:	10MA
TCXO crystal Oscillator	+ - 2.5ppm
Changer in:	Micro USB +5V
Impedance input:	50 Ohm (BNC)
Weight:	113g
Dimensions size :	70 x 25 x 90mm

### SF-401PLUS



#### Power On/Off

Power On –Press and Hold down the [black key] by 2 second

Power Off –Press and Hold down the [black key] by 4 second of number count down to 0

#### Charging the battery

Plug the Power cord into adaptor , Micro USB connected SF-401, The Led indicating:

\*The RED Led is light - Charging

\* The Green Led is light - Full

How to check Frequency measuring. See PIC.3

The transmitter near the frequency counter antenna , see the signal reception conditions is zone green, you can test. Please see Pic.3

cautions:

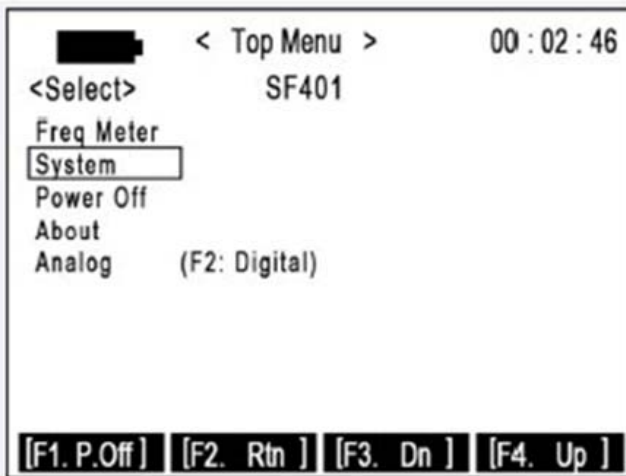
e.g. display 1800.000Mhz , The transmitter distance is too close to the frequency counter will affect the test results, , the signal bar is red .(see Pic.1)

e.g. display 0.000, , The transmitter distance is too far to the frequency counter and signal is weak ,will affect the test results, the signal bar is low .(see Pic.1)

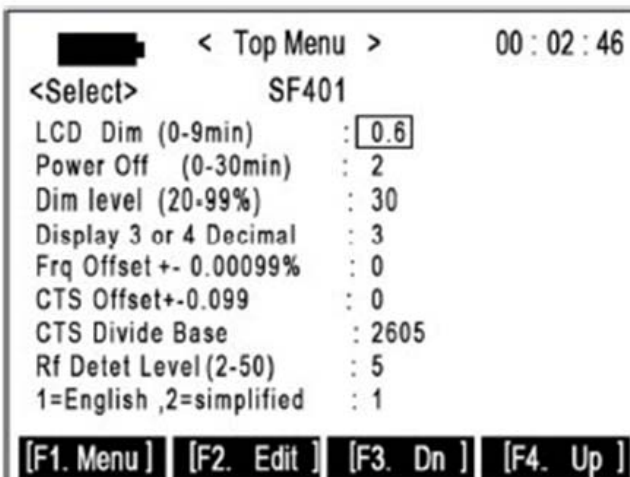
**! Note: (27MHz to 100MHz It can not be guaranteed and the corresponding normal emission appliance) .**



PIC.3



PIC.4



PIC.5

**How to check Frequency of Digital DMR Radio**

Press[ F3 Digital] from Measuring screen mode **See PIC.1**

**Note: Use Digital mode have 3 Decimal only**

**MENU funtion setting and save. See PIC.4**

Press [F1] > into menu Page

Press [F3 down] or [F4 Up] into System and Press [F2 Rtn] into system Page PIC.4

Press[F3 down] or [F4 Up] select funtion ,Press [F2 Edit] > [F3 - ][F4 +] change mode

Press[Menu] > [F1 ]to Exit or [F4 ] to Save and Exit

**How to check CTCSS/DCS code**

1.Radio must be 136-174/400-520MHz

2.Radio must be ANALOG

**CTCSS/DCS Decoder for ANALOG mode**

CTCSS (Hz)			
50.0	97.4	151.4	192.8
55.0	100.0	156.7	196.6
67.0	103.5	159.8	199.5
69.3	107.2	162.2	203.5
71.9	110.9	165.5	206.5
74.4	114.8	167.9	210.7
77.0	118.8	171.3	218.1
79.7	123.0	173.8	225.7
82.5	127.3	177.3	229.1
85.4	131.8	179.9	233.6
88.5	136.5	183.5	241.8
91.5	141.3	186.2	250.3
94.8	146.2	189.9	254.1

**DCSSS for ANALOG mode (N code only)**

Standard(N)	sf401 check	Standard(N)	sf401 check	Standard(N)	sf401 check	Standard(N)	sf401 check
23	23	143	143		266	465	465
25	25		145	271	271	466	466
26	26	152	152		274	503	503
31	31	155	155	306	306	506	506
32	32	156	156	311	311	516	516
	36	162	162	315	315	532	532
43	43	165	165		325	546	546
47	47	172	172	331	331	565	565
51	51	174	174		332	606	606
	53	205	205	343	343	612	612
54	54		212	346	346	624	624
65	65	223	223	351	351	627	627
71	71		225		356	631	631
72	72	226	226	364	364	632	632
73	73	243	243	365	365	654	654
74	74	244	244	371	371	662	662
114	114	245	245	411	411	664	664
115	115		246	412	412	703	703
116	116	251	251	413	413	712	712
	122		252	423	423	723	723
125	125		255	431	431	731	731
131	131	261	261	432	432	732	732
132	132	263	263	445	445	734	734
134	134	265	265	464	464	743	743
						754	754

**Q&A of SF-401 plus Frequency Counter**

Problem: Frequency counter cannot check VHF frequency

Solutions:

- 1) Switch the ATT button into left hand side
- 2) Then change the antenna into VHF or Dual band, as customer are using UHF antenna, but checking VHF band
- 3) If you really using the UHF antenna to check it, please try to slant your radio to the frequency counter, like the following picture



#### **Package Contents**

- 1x SF401 PLUS Frequency Counter**
  - 1 x UHF Antenna**
  - 1x English User Manual**
  - 1x USB charger cable**
  - 1x USB AC adapter 100-240V**
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Note that different frequencies have different sensitivities , if the signal is too weak, to replace the antenna.

# SF-401 PLUS



**Frequency  
Counter**



**SUPRECOM**<sup>®</sup>  
Frequency Counter/Cross Meter

435.5497 MHz  
0.01  
23.7Hz



