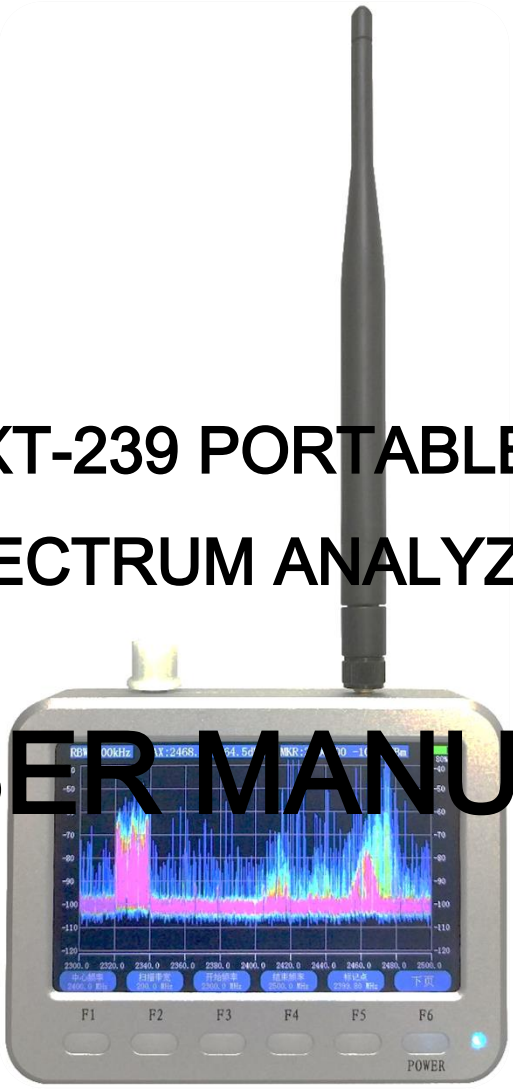
XT-239 PORTABLE SPECTRUM ANALYZER

USER MANUAL



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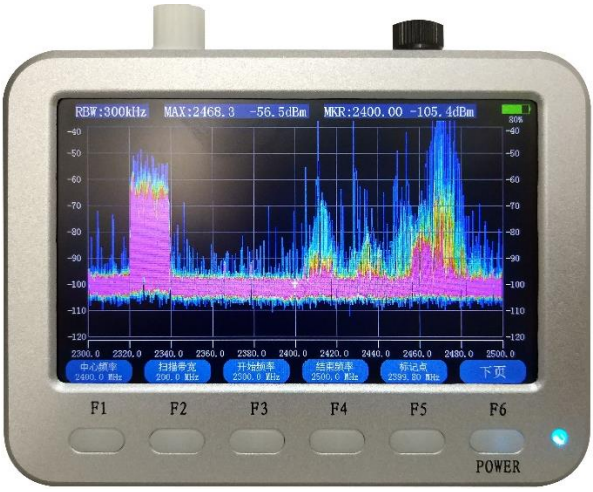
1. PORTABLE SPECTRUM PROFILE



At the scene of the RF test, wireless optimization, cloth net, interfere with the application process, including often need to test signal spectrum distribution; Field measurement needs to be portable, and Europe and the United States of the portable spectrometer is 3 kg, field test is not convenient.

1.1 PRODUCT FEATURES

- Real-time spectrum analysis functions: real-time spectrum scan SPAN/RBW/CENT/MARKER function，MAXHLOD function，Maximum power automatic detection。
- Frequency chromatogram function: show a period of time the whole time and frequency spectrum characteristics of recycled record all spectrum distribution within 5 minutes, facilitate the frequency interference to or launch leakage and other problems
- Heat map function: l spectrum shows that over a period of time spectrum overlap density contour, repetitions show tend to be more red, more facilitate spectrum statistical characteristics of analysis for a period of time.

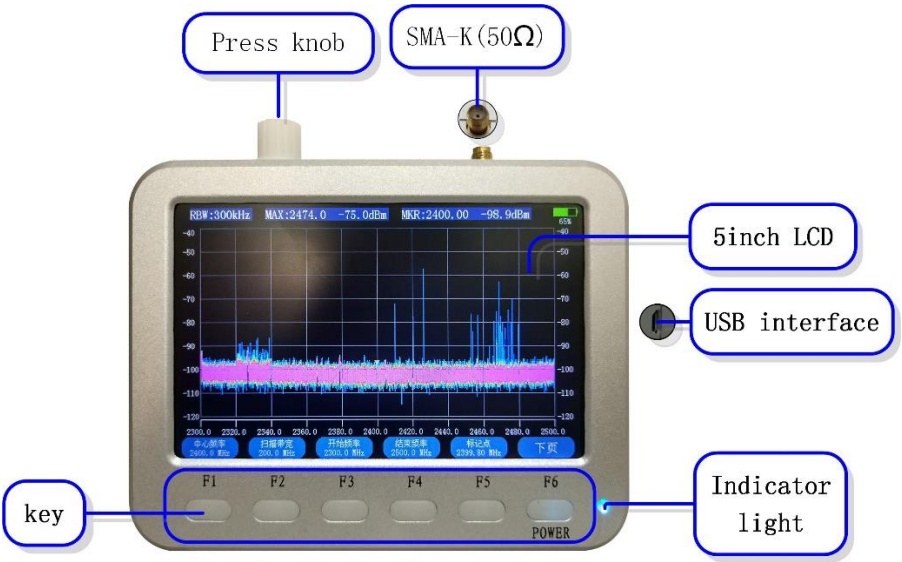
1.1 S11 Test pattern

1.2 PORTABLE SPECTRUM ANALYZER

PROJECT	PARAMETER
model	XT-239
S11 （typical value)	-20dB
Frequency range	2.3~2.9GHz
In-band flatness	0.5dB
RBW	20、30、50、100、200 and 300kHz
DANL	-110dBm（typical value）
Amplitude precision	+-1dBm
Sweep time	200ms
MAXHOLD function	Support
Reference level is ADJ	Support
Display refresh rate	5Hz
LCD resolution	TFT 800×480
LCD size	5 inch

RF interface[	SMA-K
Spectrogram mode	Support
Thermal spectrum mode	Support
Built-in RTC clock	Support
Battery capacity	3300mAh（typical）
Battery type	Panasonic 18650 lithium batteries
Charging time	4～5 h
Charging interface	Micro USB interface
Battery life	9 h
Overall dimensions	135mm*101mm*30mm（Do not include the knob and the antenna height）
Working temperature	-20～45°
Storage temperature	-20～70°
Signal measurement range	-100 ~ -15dBm （Large signal attenuator to enter）

2. INTRODUCTION TO THE BUTTONS, PORTS, AND FUNCTION



2.1 The port is introduced

2.1 INTRODUCTION TO THE PORT AND INDICATOR LIGHTS

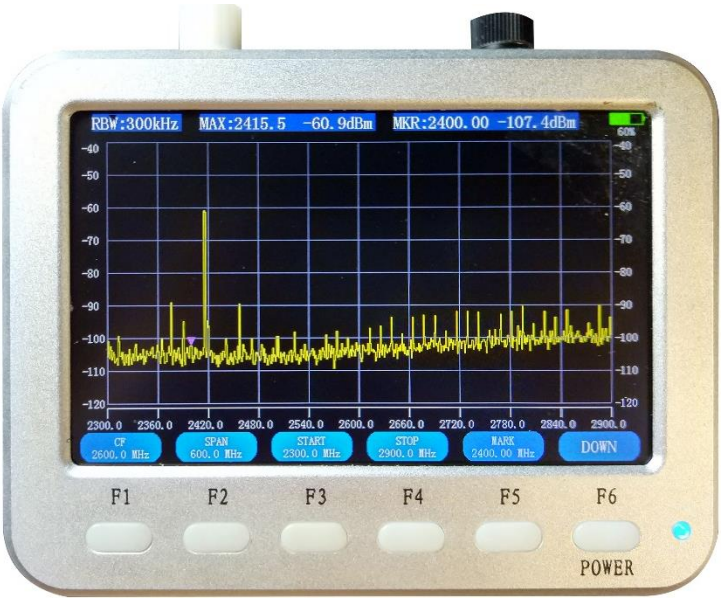
1. Light blue light in the normal boot, bright red when charging, the charging light green.
2. USB interface for Micro USB, the use of power is 5V / 1 A.
3. Antenna interface is the instrument for the standard SMA female head (SMA - K outside screw hole) should be with standard male head (SMA) - J internal screw needle. Note that SMA interface normal service life of about 1000 times (more than life, signal loss bigger or contact unstable), frequent replacement of antenna or using radio frequency cable, SMA connector should be used the original life of interface.

2.2 FUNCTION AND USE

KEYS FUNCTION GENERAL INTRODUCTION：

1. F1~F6 function keys (F1) with the LCD menu label one-to-one correspondence, select it and press respectively into the corresponding function;
2. POWER (F6) key is on/off key, long press the POWER (F6) key to turn it off. (Note: shutdown operation under the return to the main interface is effective, other interface to return to the main interface operation).

2.2.1 REAL-TIME SPECTRUM FUNCTION



2.2 Real-time spectrum mode (UP page)）

For the instrument at the top of the rotary encoder, rotating around the adjustable corresponding numerical size, confirm function press the knob.

1. F1 key corresponding setting function of center frequency (Note: Frequency setting range of 2.3 ~ 2.9 GHz) :

2.3 Center frequency setup submenu

1) F3 corresponding Settings adjust step precision for 10;

2) F4 corresponding Settings adjust step precision for 1;

3) F5 corresponding Settings adjust step precision is 0.1;

4) F6 corresponding returns on an interface.

2. The F2 key corresponding setting function of scanning bandwidth (Note: set the range 0 to 210 MHz bandwidth, specific operation with the center frequency setting).

3. The F3 key corresponding setting start frequency function (Note: Set the starting frequency range 2.3 GHz ~ the end frequency and specific operation with the center frequency setting).

4. The F4 keys corresponding to set the end frequency function (Note: Set the starting frequency range start frequency ~ 2.9 GHz, specific operation with the center frequency setting).
5. F5 key corresponding to the setting function markers (Note: Frequency measurement range start frequency to the end frequency) .

2.4 Mark point setup submenu

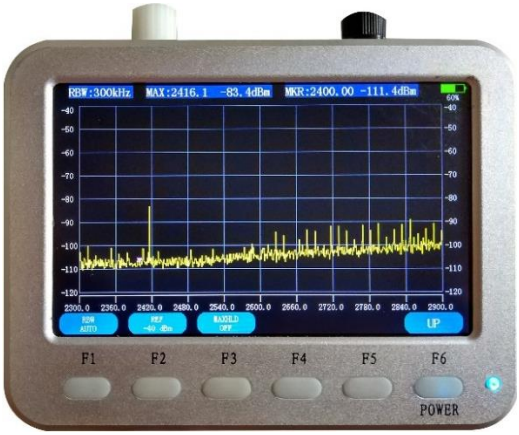
1) F2 corresponding setting test frequency input tag (Note: Specific operation with the center frequency setting).

2) F3 corresponding tag set point frequency to the center frequency;

3) the F4 corresponding to set the maximum frequency to the center frequency;

4) F6 corresponding returns on an interface.

6. The F6 corresponding set to switch to the on the next page.



2.5 Real-time spectrum mode (DOWN page)）

7. F1 correspond to set the resolution function (Note: Set the range resolution 20, 30, 50, 100, 200, 300 KHz) .

2.6 Resolution settings interface

1) F1 corresponding Settings manually enter the resolution (Note: Manually after will be manual

mode) .

2.7 The resolution of the input interface

- Can be directly through the knob in 20, 30, 50, 100, 200 and 300 KHz switching.

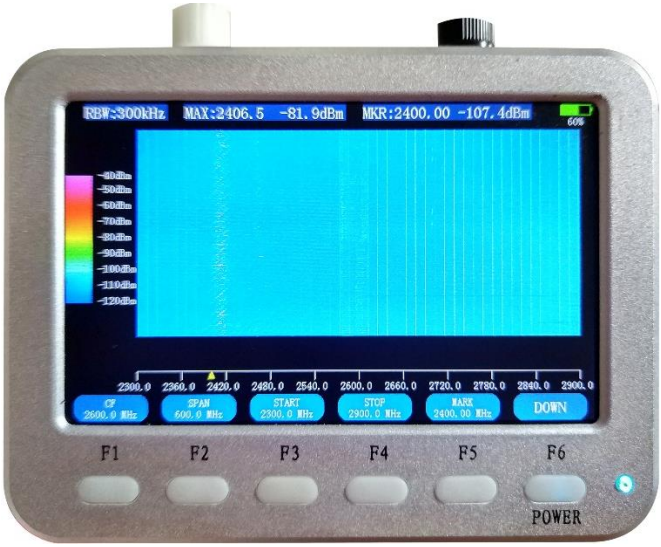
2) F3 corresponding set automatically set the resolution mode.

3) F6 corresponds to return to the interface of a function.

8. F2 key corresponding to the reference level set function (Note: The reference level range - 120 ~ 0 dBm, specific operation with the center frequency setting).

9. Set the maximum keep the F3 key function turned on or off.

2.2.2 SPECTROGAM FUNCTION



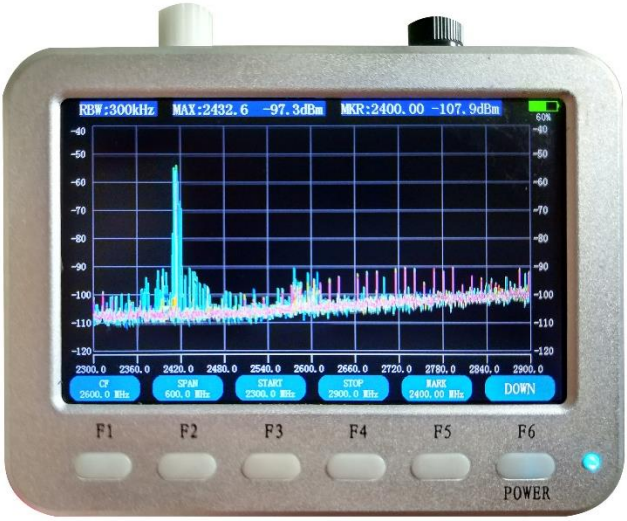
2.8 Spectrogram mode (UP page)

Center frequency, scanning bandwidth, start frequency, end, resolution and reference level operation frequency, marked points and functionality as above (real-time spectrum interface).

2.9 Spectrogram mode (DOWN page)

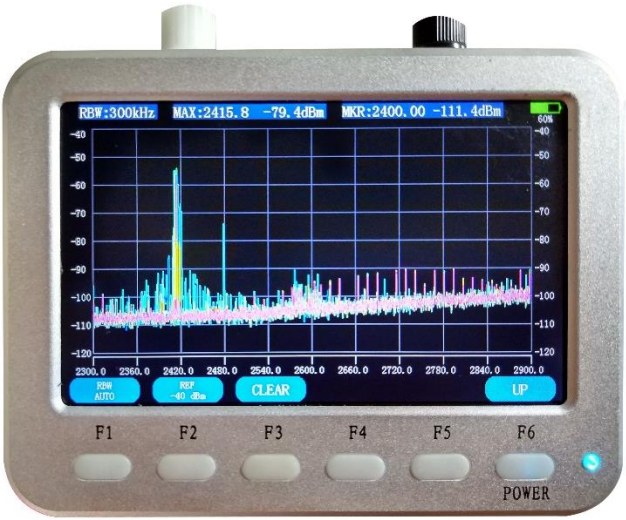
1. Set the F3 key chromatography update to stop or start, chromatogram can be stop update at any time, with detailed analysis of the overall distribution (Note: In this mode, only the marked points and stop and start function is available).

2.2.3 THERMAL SPECTRUM FUNCTION



2.10 Thermal spectrum mode (UP page)

Center frequency, scanning bandwidth, start frequency, end, resolution and reference level operation frequency, marked points and functionality as above (real-time spectrum interface).



2.11 Thermal spectrum mode (DOWN page)

1. Set the F3 key manually screen clearing.

2.2.4 SET THE INTERFACE

2.12 SET UP

F1, F2, F3 and F4 keys even display Settings. As defined by the knob corresponds to the function of rotating around the adjustable corresponding numerical values. Long press F6. Key corresponding to return to the interface of a function.

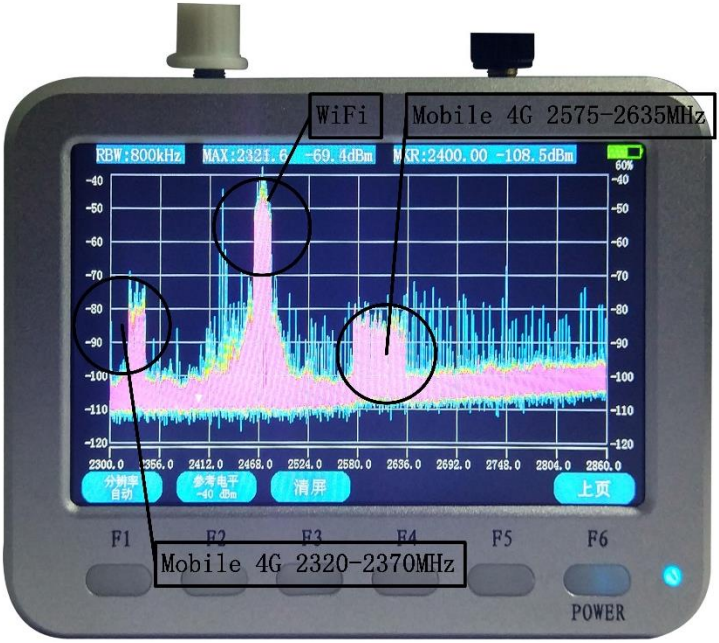
1. The dormancy Settings, select by knob to adjust time, after can be determined by identifying key after

adjustment. (Note: The range of 1 ~ 60 minutes and set to never automatic shutdown).

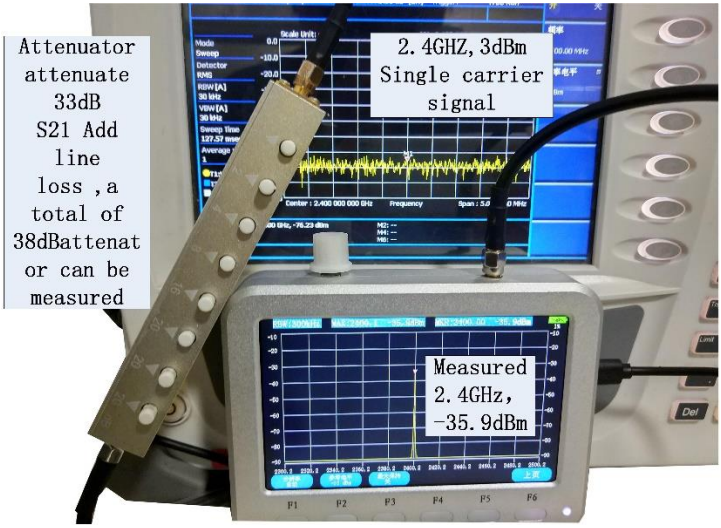
2. The time Settings, F1 ~ F6 and when (date) (month) (year) minutes respectively, set up after the completion of the unified according to the identification of key.
3. Brightness Settings, select can adjust brightness, through the knob after adjusted can be determined by identifying key.(note: the relative brightness range 0 ~ 100%)
4. After selecting language Settings, can choose the language through the knob, after the completion of the language selection can be determined by identifying key.(note: the language types in English Chinese)

3. TYPICAL APPLICATIONS

Can be used to test the single carrier, mobile, unicom 4 g 4 g signal, telecommunications, 4 g signals, WiFi, 2.5 ~ 2.7 GHz unmanned aerial vehicle (UAV), etc.



3.1 Signal figure



3.2 Add 2.4 GHz attenuator test, 3 DBM single carrier signal

4. USER INFORMATION AND MAINTENANCE

4.1 NORMAL USE

- Note that large signal coverage not to exceed bid, so as not to damage the instrument to receive the front end. When installing the antenna or RF cable, screw thread, but do not be too hard to avoid slippery silk.
- Should maintain adequate power, in order to avoid shutdown without electricity;
  USB interface is fragile, plug not too hard, also avoid lateral force.

- Pay attention to the storage temperature and temperature range, such as exposure do not put in the car.
- Long-distance transportation should be put in boxes or suitcase, conventional scratch the LCD panel to avoid hard objects.
- It is recommended to use connector, life in order to increase the original interface
- RF connectors cleaning once every 3 month, using alcohol.

4.2 APPLICATION OF ENVIRONMENTAL CONSIDERATIONS

- Instrument, shake the water sound or other obvious abnormal, do not use.
- A thunderstorm do not test the outdoor equipment, including installation of surge arrester outdoor

equipment.

- Normal warranty period is one year, such as touch, and to remove the water, not in the warranty scope.
- From outdoor enter a indoor of central heating in winter, avoid instrument internal condensation, such as condensation should be after drying in the boot.

4.3 BATTERY MATTERS NEEDING ATTENTION

- Instrument commissioning or charging should stay away from flammable items, pay attention to ventilation, instruments and shall not cover other things on the charger.
- In order to protect the battery, please recharge instruments frequently, try not to lack of electrical warning in charging, etc.
- Ban floating for a long time, if the instrument is used for a long time to continuous charging work, please don't

please under the intermittent use of batteries in order to increase the battery life.

- Instrument for a long time need not, should be charged after storage. During storage at least once every three months with elect.