LATNEX FC-3000P

LATNEX FC-3000P Frequency Counter User Manual

Model: FC-3000P | Brand: LATNEX

1. Introduction

The LATNEX FC-3000P is a portable frequency counter designed for measuring continuous wave signals from two-way radios. It provides frequency parameters and signal strength indication, making it a valuable tool for monitoring and testing radio frequencies. This device is suitable for various applications, including 2m HAM radio, VHF, UHF, and DMR radio transceivers.
Key features include a wide frequency range, CTCSS/DCS decoding capabilities, and a clear TFT color display. Its compact size and four-button control ensure ease of use and portability.

2. Product Overview and Features

The FC-3000P is a versatile frequency counter capable of identifying frequencies from 27MHz to 3000MHz. It features a high-sensitivity receiver and includes a built-in CTCSS/DCS decoder. The device operates with a Temperature Compensated X'tal (crystal) Oscillator (TCXO) for enhanced accuracy. The intuitive four-button interface and TFT color display ensure straightforward operation and clear data presentation.

- **Frequency Range:** 27MHz-3000MHz (Note: Performance below 100MHz, specifically 27MHz, may vary and is not guaranteed for all continuous carrier signals).
- **CTCSS/DCS Decoder:** Built-in for identifying sub-audible tones.

- **Display:** TFT Color Display (240 x 320 pixels) with adjustable dim level.
- **Accuracy:** TCXO (Temperature Compensated X'tal Oscillator) provides ±2 to ±4ppm accuracy within -45°C to 65°C.
- **Response Time:** 0.2-0.5 seconds (CTCSS/CDCSS >0.5-1 second).
- **Battery:** Built-in Li-ion battery with charging indicator.
- **Control:** Four-button interface for easy navigation.
- **Auto Power Off:** Adjustable from 1 to 9 minutes.

3. What's in the Box

Upon opening the package, please verify that all the following items are included:

- LATNEX FC-3000P Frequency Counter Unit
- Antenna
- Power Cord (USB charging cable)
- User Manual (this document)

4. Setup

1. **Initial Charging:** Before first use, fully charge the built-in Li-ion battery. Connect the provided USB charging cable to the "Charger in" port on the device and plug the other end into a USB power adapter or computer USB port. The "Charger LED" will indicate charging status.

Figure 1: Bottom view of the FC-3000P showing connection ports.

2. **Attach Antenna:** Screw the provided antenna onto the "Antenna in" BNC connector located on the top of the

device. Ensure it is securely fastened.

3. **Power On:** Press and hold the power button (usually the leftmost button) to turn on the device. The TFT color display will illuminate.
4. **Signal Attenuation:** The device features a signal attenuation switch (0dB / Att 10dB) near the antenna port. For strong signals, you may switch to "Att 10dB" to prevent overload and improve measurement accuracy. For weaker signals, keep it at "0dB".

5. Operating Instructions

Figure 2: FC-3000P display and button layout (PIC.1).

1. **Power On/Off:** Press and hold the power button (leftmost button) to turn the device on or off.
2. **Frequency Measurement:**
    - Ensure the antenna is connected.
    - Place the FC-3000P near the radio transmitting the signal you wish to measure.
    - The device will automatically detect and display the frequency (Freq) on the screen.
    - The "RF Signal Level" bar graph indicates the strength of the detected signal.
3. **CTCSS/DCS Decoding:**
    - When a continuous carrier signal with CTCSS or DCS is detected, the corresponding code will be displayed under "Ctcss" or "Cdcss" on the screen.
    - The "Code Signal Level" bar graph indicates the strength of the detected sub-audible tone.
4. **Mode Selection (Analog/Digital):** Use the navigation buttons (typically the middle two buttons) to switch between "Analog" and "Digital" modes if available. The FC-3000P supports DMR radio signal frequency counting.

5. **Display Dim Level:** Access the settings menu (refer to the specific button functions on your device, usually by pressing a menu button) to adjust the LCD dim level for optimal viewing and battery conservation.
6. **Auto Power Off Setting:** The device can be configured to automatically power off after a period of inactivity (1-9 minutes). Adjust this setting in the device menu to conserve battery life.

6. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Battery Care:**
  - Recharge the battery when the "Battery Level" indicator is low.
  - Avoid fully discharging the battery frequently to prolong its lifespan.
  - If storing the device for an extended period, charge the battery to approximately 50% and store in a cool, dry place.
- **Storage:** Store the device in a dry environment, away from extreme temperatures and direct sunlight.
- **Antenna:** Ensure the antenna is not bent or damaged. Replace if necessary to maintain optimal performance.

7. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Battery is discharged.	Charge the device using the provided USB cable and adapter.
No frequency reading or unstable reading.	Antenna not connected or damaged. Signal too weak or too strong. Device too far from the signal source. Signal is not a continuous carrier wave.	Ensure antenna is securely attached. Adjust "Signal attenuation" switch (0dB for weak, Att 10dB for strong). Move closer to the transmitting radio. Verify the signal source is a continuous carrier wave.
CTCSS/DCS not decoding.	Signal too weak. Signal does not contain CTCSS/DCS. Response time for decoding is longer.	Ensure strong signal reception. Confirm the transmitting radio uses CTCSS/DCS. Allow sufficient time (0.5-1 second) for decoding.
Inaccurate readings on 27MHz.	Device's specified reliable range starts from 100MHz.	While the device can detect signals down to 27MHz, reliable and guaranteed accuracy is for 100MHz and above. Performance at 27MHz may vary.

8. Specifications

LATNEX®

FUNCTION	FC-3000P	FC-2800M
Frequency Range:	27MHz-3000MHz	2MHz-2800MHz
Gate Speeds select:	N/A	0.1 / 0.25 / 0.5 / 1.0 Second
DIGITAL:	3-4	3-6
Input sensitivity	-9dbm	-20dbm to-15dbm
DIGITAL mode :	DMR system	
Distant :	0.3-1M	0.3-9M
Walkie talkie code of CTCSS/DCS:	must be 132-173 / 200-260MHz / 400-519MHz	
Signal attenuation s.w.	-10db by switch	AUTO GAIN
Li-ion Battery Built-in:	600mAH	1500mAH
TFT LCD:	320 x 240 pixels	
Current consumption:	10MA	30-50MA
TCXO crystal Oscillator	+- 2.5ppm	+- 2.5ppm
Charger input:	Micro USB +5V in	
Impedance input:	50 Ohm (BNC)	
Weight:	100g	113g
Dimensions size :	70 x 25 x 90mm (not include antenna & BNC socket)	

Figure 3: FC-3000P Specifications Overview.

Feature	Specification
Frequency Range	27MHz-3000MHz (Note: 27MHz to 100MHz cannot be guaranteed for normal emission appliance)
CTCSS/DCS Decoder	Yes
LCD Display	TFT Color Display 240 x 320 pixels, adjustable dim level
Frequency Digital	0.000 or 0.0000 (+/-0.001)
Oscillator	TCXO (Temperature Compensated X'tal Oscillator) 2~2.5ppm
Frequency Response Time	0.2-0.5 sec (CTCSS/CDCSS >0.5-1 sec)
Built-in Battery	Li-ion battery (600mAh)
Control	4 buttons
Auto Power Off	1-9 minutes adjustable
Charger Input	Micro USB +5V in
Impedance Input	50 Ohm (BNC)
Net Weight	113g (approx. 3.99 ounces)
Dimensions	70 x 25 x 90mm (not including antenna & BNC socket)

9. Warranty and Support

The LATNEX FC-3000P Frequency Counter comes with a **2-year warranty** from the date of purchase. This warranty covers manufacturing defects and ensures the product performs as described under normal use.

For technical support, assistance with setup, operation, or troubleshooting, please contact LATNEX customer service. Support is available via phone and email through Amazon Messages. Please refer to your purchase documentation for specific contact details.

Always refer to this user manual for guidance before contacting support, as many common issues can be resolved by following the instructions provided.