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› FeelTech FY3200S Digital DDS Function Signal Generator User Manual

FeelTech

FeelTech FY3200S Digital DDS Function Signal Generator User Manual

Model: FY3200S 6M

1. INTRODUCTION

The FeelTech FY3200S series is a high-performance, cost-effective function/arbitrary waveform generator that utilizes Direct Digital Synthesis (DDS) technology. It is capable of generating accurate, stable, and low-distortion signals. This dual-channel device offers independent control over each channel, making it suitable for a wide range of applications in electronics testing, education, and research.

This manual provides essential information for the safe and effective operation of your FY3200S function signal generator. Please read it thoroughly before use.



Figure 1.1: Front view of the FeelTech FY3200S Digital DDS Function Signal Generator.

2. PRODUCT FEATURES

- DDS direct digital synthesis technology generates accurate, stable, and low distortion waveforms.
- CH1 and CH2 are two perfectly symmetrical channels; parameters for each channel can be set independently.
- Arbitrary waveform memory depth of 2048*12bits with a 250MSa/s sampling rate.
- The bandwidth is up to 12-bit.
- Minimum signal output amplitude up to 10mVpp, with a maximum of 20Vpp.

3. PRODUCT COMPONENTS AND ACCESSORIES

The standard package for the FY3200S includes the following items:

- FY3200S Function Signal Generator Unit
- Power Cord
- USB-B Data Cable
- BNC-Clip Cables (2)
- BNC-BNC Cable
- User Manual (this document)
- Data CD (containing software and drivers)

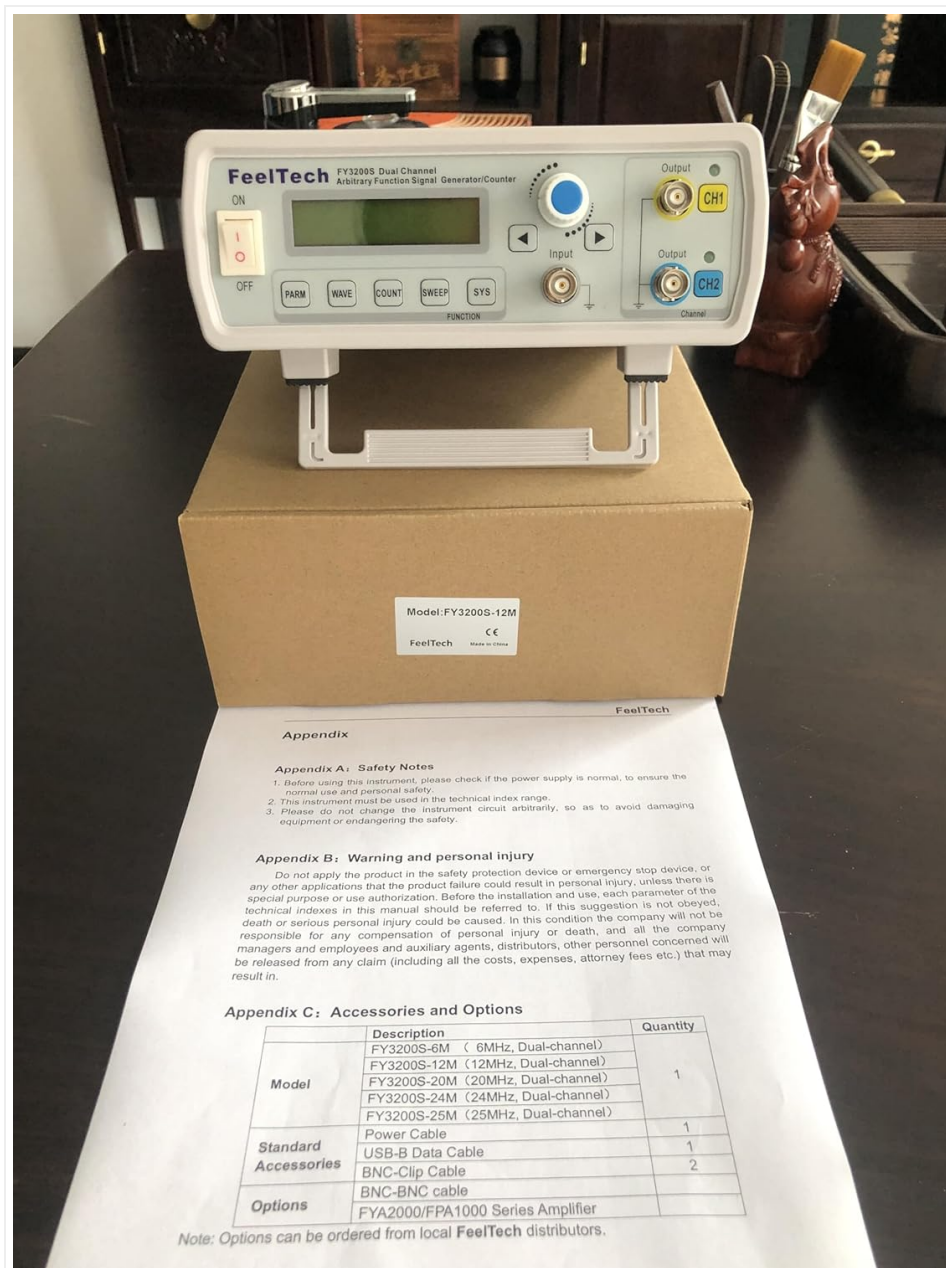


Figure 3.1: FY3200S unit and standard accessories.

4. SETUP

4.1 Power Connection

1. Ensure the power switch on the front panel is in the 'OFF' position.
2. Connect the provided power cord to the AC power input port on the rear panel of the device.
3. Plug the other end of the power cord into a suitable AC power outlet (AC85V~AC260V).

4.2 Signal Output Connections

1. Identify the CH1 (yellow) and CH2 (blue) output BNC connectors on the front panel.
2. Connect the BNC-Clip cables or BNC-BNC cables to the desired output channels.
3. Connect the other end of the cable to your testing equipment (e.g., oscilloscope, frequency counter).

4.3 USB Data Communication

1. Locate the USB port on the rear panel (USB to TTL Series Data Communication Interface).
2. Connect the provided USB-B Data Cable from the device to your computer for software control and data

transfer.

3. Install the necessary drivers and software from the included Data CD or the manufacturer's website.



Figure 4.1: Rear panel connections including power, USB, and TTL outputs.

5. OPERATING INSTRUCTIONS

5.1 Powering On and Basic Operation

1. After connecting power and outputs, switch the 'ON/OFF' toggle on the front panel to 'ON'. The LCD display will illuminate.
2. The display shows current settings for frequency, amplitude, and waveform type.
3. Use the rotary encoder (blue knob) to adjust values and the arrow buttons \leftarrow and \rightarrow to navigate between parameters.

5.2 Waveform Generation

- Press the **WAVE** button to cycle through available waveform types (Sine, Square, Triangle, Arbitrary, Sawtooth, Pulse, Noise, etc.).
- Press the **PARM** button to select parameters such as frequency (MF), amplitude (AMPL), and DC offset (OFFS).
- Rotate the blue knob to change the selected parameter's value. Press the knob to confirm or switch between coarse/fine adjustment.
- The FY3200S supports dual-channel operation. Use the CH1 and CH2 buttons to select which channel's parameters you are adjusting. Each channel can operate independently.

5.3 Advanced Functions

- **COUNT:** Use this button to access the frequency counter function, allowing you to measure external frequencies.
- **SWEEP:** Engage sweep mode for frequency or amplitude sweeps. Configure sweep parameters using the rotary encoder and arrow keys.
- **SYS:** Access system settings, including display contrast, key tone, and other device configurations.

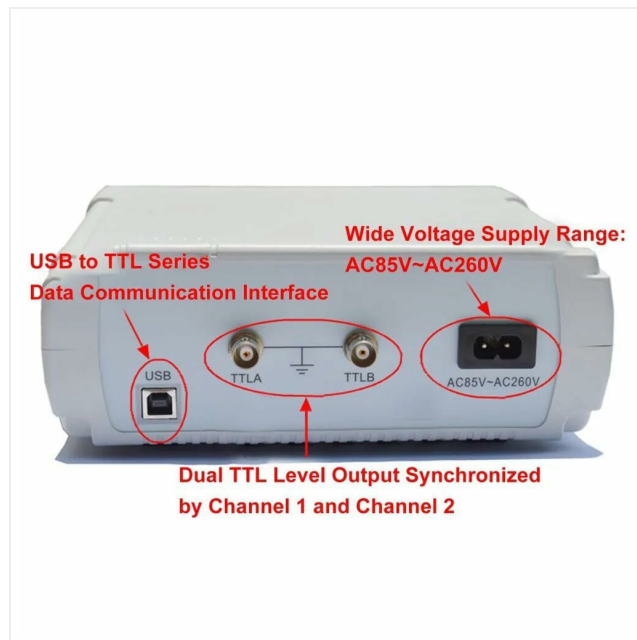


Figure 5.1: Front panel controls and display.

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Video 5.1: An overview of the FeelTech FY3200S Digital DDS Function Signal Generator, demonstrating its features and appearance.

6. MAINTENANCE

6.1 General Care

- Keep the device clean and free from dust. Use a soft, dry cloth for cleaning. Do not use liquid cleaners or aerosols.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Ensure proper ventilation around the unit to prevent overheating.

6.2 Safety Notes

- Before using this instrument, please check if the power supply is normal to ensure the normal use and personal safety.
- This instrument must be grounded.
- Please do not change the instrument circuit arbitrarily, so as to avoid damaging equipment or endangering safety.

7. TROUBLESHOOTING

If you encounter issues with your FY3200S, please refer to the following common troubleshooting steps:

- **No Power:** Ensure the power cord is securely connected to both the device and the power outlet. Check the power switch position.
- **No Signal Output:** Verify that the output cables are correctly connected to the CH1/CH2 BNC ports and to your receiving equipment. Check the amplitude and frequency settings on the device's display. Ensure the output is enabled.
- **Incorrect Waveform:** Confirm that the correct waveform type is selected using the WAVE button. Check frequency and amplitude settings for any anomalies.
- **Display Issues:** If the display is dim or unreadable, adjust the contrast in the SYS menu.

For persistent issues not resolved by these steps, please contact customer support.

8. SPECIFICATIONS

The following tables detail the technical specifications of the FeelTech FY3200S series:

General Specifications

Parameter	Value
Product Dimensions	9.84 x 7.87 x 5.91 inches
Weight	2.2 Pounds
Item Model Number	GT-FY3200S 6M
Manufacturer	FeelTech/FeelElec
Country of Origin	China

Waveform Characteristics

Characteristic	Description/Value
Waveforms	Sine, Square, Triangle (Ramp), Arbitrary, Sawtooth, Pulse, Noise, etc.
Waveform Length	2048 Points
Sampling Rate	250MSa/s
Vertical Resolution	12 Bits
Output Amplitude	≤40Vpp (No load)
Output Impedance	50Ω ±10%
Max Output Power	20W
DC Offset	±10V
Resolution	0.01Hz (10MHz)
Frequency Stability	±5×10 ⁻⁶
Sine Wave Distortion	≤0.8% (reference frequency 1kHz)
Triangle Linearity	≥98% (0.01Hz~10kHz)
Rise or Fall Time of Square Wave	≤30ns
Square Wave Duty Cycle Range	0.1%~99.9%
Pulse Wave Width Range	10ns~1S
TTL Output	Dual-channel TTL electric level synchronize with CH1 and CH2. Phase differences are adjustable.

Characteristic	Description/Value
Electric Level Range	>3.3Vp-p
Fan-out	>20 TTL (Load)
Level Rise Fall Time	≤20ns

Frequency Ranges by Model

Model	FY3200S 6M	FY3200S 12M	FY3200S 20M	FY3200S 24M	FY3200S 25M
Sine wave frequency range	0Hz~6MHz	0Hz~12MHz	0Hz~20MHz	0Hz~24MHz	0Hz~25MHz
Square wave frequency range	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz
Ramp/Triangle	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz
Pulse	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz
TTL/CMOS	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz
Arbitrary wave	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz	0Hz~6MHz

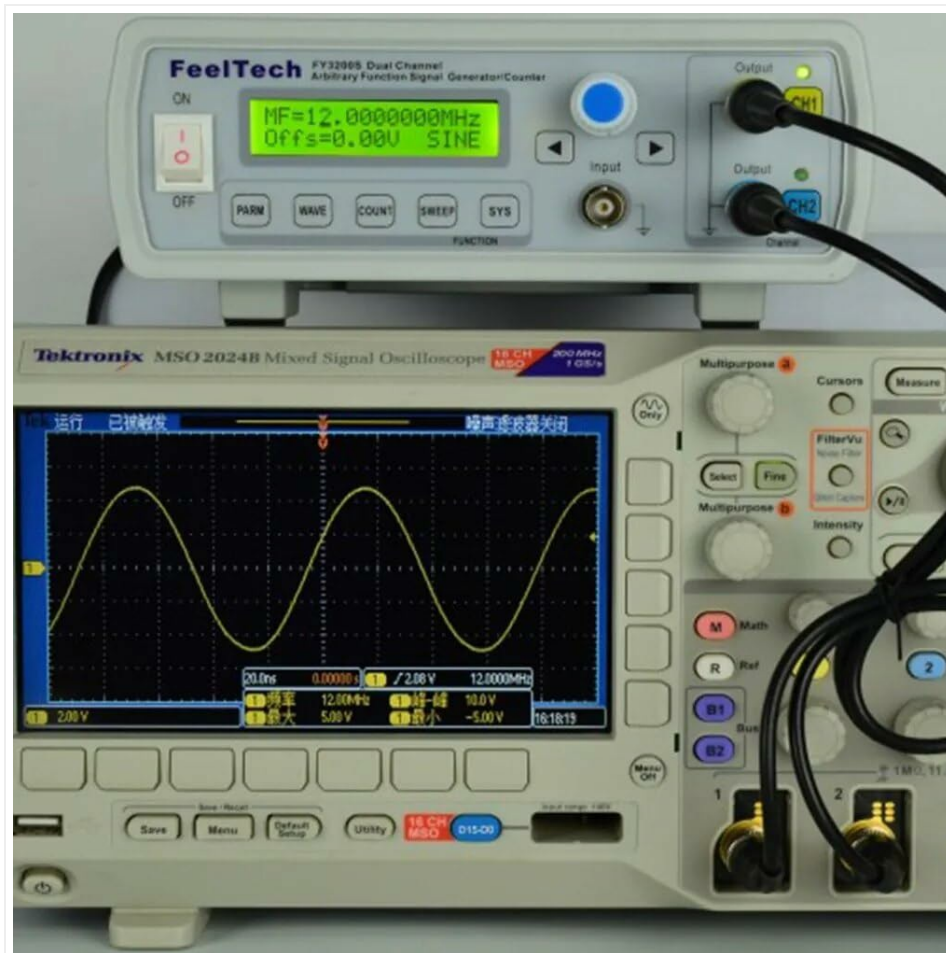


Figure 8.1: Detailed frequency ranges for various FY3200S models.

9. WARRANTY AND SUPPORT

Your FeelTech FY3200S Digital DDS Function Signal Generator is covered by a manufacturer's warranty. Please refer to the warranty card included in your package for specific terms and conditions.

For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact FeelTech customer support through the vendor you purchased the product from or directly via the contact information provided on the manufacturer's official website.

Please have your model number (GT-FY3200S 6M) and purchase details ready when contacting support.