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## FeelTech FY1100-2M

# FeelTech FY1100 Series Single Channel DDS Signal Generator User Manual

Model: FY1100-2M / FY1100-5M

Brand: FeelTech

## 1. INTRODUCTION

This manual provides comprehensive instructions for the operation and maintenance of the FeelTech FY1100 Series Single Channel DDS Signal Generator. The FY1100 series includes models FY1100-2M (maximum output frequency 2MHz) and FY1100-5M (maximum output frequency 5MHz). This device utilizes Direct Digital Synthesis (DDS) technology to produce accurate, stable, and low-distortion output signals, offering various waveform types and TTL level output.

The user-friendly interface features a 2.4-inch TFT color LCD screen (320\*240 resolution) for displaying output signal parameters and current key functions. Shortcut keys simplify complex operations, enhancing instrument usability.

## 2. KEY FEATURES

- DDS direct digital synthesis technology for accurate, stable, and low distortion output.
- Desktop design with ABS plastic shell.
- 2.4-inch (320\*240 pixels) color display for waveform parameters.
- Sampling rate: 150MSa/s, 12-bit vertical resolution.
- High frequency accuracy: up to  $10^2$  orders of magnitude.
- High frequency resolution: 10mHz or 0.01Hz across the full range.
- High amplitude resolution: minimum 10mV or 0.01V.
- DC bias function: -7.5V to +7.5V.
- Supports various waveforms including Sine, Square, COMS, DC, Triangle, Rising Sawtooth, Falling Sawtooth, Step Triangle, Full Wave, Positive Half Wave, Random Noise, AM, and FM.

## 3. SETUP

### 3.1 Unpacking and Inspection

Carefully remove the signal generator from its packaging. Inspect the device for any signs of physical

damage. Ensure all components are present.

### 3.2 Power Connection

The device operates on a 5V DC power supply. Connect the appropriate power adapter to the DC input port on the rear of the unit. Ensure the power adapter matches the local electrical standards.



Figure 3.1: Various power plug types (EU, US, UK) compatible with the FeelTech FY1100 series signal generator.

### 3.3 Connecting Output Cables

Connect BNC cables to the desired output channels (CH1, TTL, Counter) on the front panel. Ensure connections are secure.



Figure 3.2: Front panel of the FeelTech FY1100 signal generator, showing the display, control buttons, and output connectors.

### 3.4 Initial Power On

Press the power button located on the front panel to turn on the device. The 2.4-inch TFT color LCD will illuminate, displaying the initial operating parameters.

## 4. OPERATING INSTRUCTIONS

### 4.1 User Interface Overview

The front panel features a 2.4-inch TFT color LCD display, a set of function buttons, a rotary encoder for parameter adjustment, and output connectors. The display shows real-time waveform parameters such as frequency, amplitude, offset, and duty cycle.



Figure 4.1: Close-up of the FeelTech FY1100 front panel, illustrating the display and button arrangement for parameter control.

## 4.2 Basic Parameter Adjustment

- Selecting Parameters:** Use the dedicated function buttons (e.g., FREQ, AMPL, OFFS, DUTY) to select the parameter you wish to adjust. The selected parameter will be highlighted on the LCD.
- Adjusting Values:** Rotate the large knob on the right side of the panel to increase or decrease the value of the selected parameter. Fine adjustments can often be made by pressing the knob or using specific arrow keys if available.
- Waveform Selection:** Use the waveform buttons (e.g., Sine, Square, Triangle icons) to cycle through or directly select the desired output waveform.
- Channel Output:** Press the "ON/OFF CH1" button to enable or disable the main channel output.

## 4.3 Waveform Types

The FY1100 series supports the generation of various standard and arbitrary waveforms:

- Sine wave
- Square wave (adjustable duty cycle)
- COMS wave (adjustable duty cycle)
- DC wave

- Triangle wave
- Rising sawtooth
- Falling sawtooth
- Step triangle wave
- Full wave
- Positive half wave
- Random noise wave
- AM waveform
- FM waveform

## 5. SPECIFICATIONS

The following table details the technical specifications for the FeelTech FY1100 series signal generators:

FY1100 color screen single channel signal generator.

### FY1100-02M Maximum output frequency 2MHZ

### FY1100-05M Maximum output frequency 5MHZ

Product name	FY1100-5M
Sine wave frequency range	0~5MHz
Square wave frequency range	0~2MHz
Triangle wave frequency range	0~3MHz
TTL digital wave range	0~5MHz
Minimum frequency resolution	10mHz (0.01Hz)
Frequency accuracy	$\pm 5 \times 10^{-6}$
Frequency stability	$\pm 1 \times 10^{-6}$ / 3 hours
Output impedance	50Ω+10% (typical)
Waveform sampling rate	150MSa/s

Figure 5.1: Detailed technical specifications including frequency ranges, resolution, accuracy, and sampling rate for the FY1100-5M model.

### FeelTech FY1100 Series Technical Specifications

Parameter	Specification (FY1100-5M)	Specification (FY1100-2M)
Maximum Output Frequency	5MHz	2MHz
Sine Wave Frequency Range	0~5MHz	0~2MHz
Square Wave Frequency Range	0~2MHz	0~2MHz
Triangle Wave Frequency Range	0~3MHz	0~2MHz (estimated)

Parameter	Specification (FY1100-5M)	Specification (FY1100-2M)
TTL Digital Wave Range	0~5MHz	0~2MHz (estimated)
Minimum Frequency Resolution	10mHz (0.01Hz)	10mHz (0.01Hz)
Frequency Accuracy	$\pm 5 \times 10^{-6}$	$\pm 5 \times 10^{-6}$
Frequency Stability	$\pm 1 \times 10^{-6}$ / 3 hours	$\pm 1 \times 10^{-6}$ / 3 hours
Output Impedance	50Ω +10% (typical)	50Ω +10% (typical)
Waveform Sampling Rate	150MSa/s	150MSa/s
Vertical Resolution	12 bits	12 bits
DC Bias Function	-7.5V ~ +7.5V	-7.5V ~ +7.5V
Power Supply	5V (DC)	5V (DC)
Dimensions (L x W x H)	25 x 20 x 15 cm (approximate, based on product dimensions)	
Weight	1 kilogram (approximate)	

*Note: Specifications for FY1100-2M are estimated based on the FY1100-5M and general product description where specific values for -2M were not explicitly provided, except for maximum frequency. Dimensions and weight are common for the series.*



Figure 5.2: Physical dimensions of the FeelTech FY1100 series signal generator.

## 6. MAINTENANCE

### 6.1 Cleaning

To clean the exterior of the device, use a soft, dry cloth. For stubborn dirt, a slightly damp cloth with mild detergent can be used, ensuring no liquid enters the device. Do not use abrasive cleaners or solvents.

### 6.2 Storage

When not in use, store the signal generator in a cool, dry place, away from direct sunlight and extreme temperatures. Protect it from dust and moisture.

### 6.3 General Care

Avoid dropping the device or subjecting it to strong impacts. Ensure proper ventilation during operation to prevent overheating. Do not block the ventilation slots located on the sides and bottom of the unit.



Figure 6.1: Side view of the signal generator, illustrating the ventilation design.



Figure 6.2: Rear panel of the signal generator, featuring the USB port for potential future connectivity or firmware updates.

## 7. TROUBLESHOOTING

This section addresses common issues you might encounter with your FeelTech FY1100 signal generator.

- **No Power:**

- Ensure the power adapter is correctly connected to the device and a working power outlet.
- Verify the power adapter is supplying the correct 5V DC voltage.
- Check the power button for proper engagement.

- **No Output Signal:**

- Confirm that the output channel (CH1) is enabled via the "ON/OFF CH1" button.
- Check the BNC cable connections for looseness or damage.
- Verify that the amplitude setting is not set to zero.
- Ensure the frequency is within the operational range for the selected waveform.

- **Incorrect Waveform Display:**

- Ensure the correct waveform type is selected.
- Check the frequency, amplitude, and offset settings for appropriate values.
- If using an oscilloscope, ensure its settings (time base, voltage scale) are correctly configured.

If problems persist, consult the manufacturer's support resources or contact customer service.

## 8. WARRANTY AND SUPPORT

The manufacturer provides a 2-year availability for spare parts for this product. For specific warranty terms and conditions, please refer to the documentation provided at the time of purchase or contact FeelTech customer support.

For technical assistance, troubleshooting, or service inquiries, please visit the official FeelTech website or contact their authorized service centers.

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### Related Documents - FY1100-2M

<p>FeelTech</p> <p>FY6600 Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator</p> <p>User's Manual</p>  <p>Rev2.2 July, 2017</p>	<p><a href="#">FeelTech FY6600 Series Dual Channel Function/Arbitrary Waveform Generator User's Manual</a></p> <p>User's manual for the FeelTech FY6600 Series Dual Channel Function/Arbitrary Waveform Generator, covering features, operation, technical specifications, and troubleshooting for models like FY6600-15M, FY6600-30M, FY6600-50M, and FY6600-60M.</p>
<p>FeelTech</p> <p>FY3200S Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator</p> <p>User's Manual</p>  <p>Rev3.0 January, 2018</p>	<p><a href="#">FeelTech FY3200S Series Dual Channel Function/Arbitrary Waveform Generator User's Manual</a></p> <p>Comprehensive user's manual for the FeelTech FY3200S Series Dual Channel Function/Arbitrary Waveform Generator, detailing its features, specifications, and operation.</p>
<p>FeelTech</p> <p>FY3200S Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator</p> <p>User's Manual</p>  <p>Rev3.0 January, 2018</p>	<p><a href="#">FeelTech FY3200S Series Dual Channel Function/Arbitrary Waveform Generator User's Manual</a></p> <p>User's manual for the FeelTech FY3200S Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator, detailing its features, specifications, operation, and safety information.</p>
<p>FeelTech</p> <p>FY2300 Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator</p> <p>User's Manual</p>  <p>Rev1.3 January, 2018</p>	<p><a href="#">FeelTech FY2300 Series Dual Channel Function/Arbitrary Waveform Generator User's Manual</a></p> <p>Comprehensive user manual for the FeelTech FY2300 Series Dual Channel Function/Arbitrary Waveform Generator. Details features like DDS technology, dual-channel output, multiple waveforms, frequency metering, sweep functions, and PC connectivity for electronic engineers and laboratories.</p>

<p>FeelTech</p> <p>FY2300 Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator</p> <p>User's Manual</p>  <p>Rev 1.3 January, 2016</p>	<p><a href="#">FeelTech FY2300 Series User's Manual - Dual Channel Function/Arbitrary Waveform Generator</a></p> <p>Comprehensive user's manual for the FeelTech FY2300 Series Dual Channel Function/Arbitrary Waveform Generator, detailing its features, operation, specifications, and troubleshooting for professional and educational applications.</p>
<p>FeelTech</p> <p>FY6600 Series Fully Numerical Control Dual Channel Function/Arbitrary Waveform Generator</p> <p>User's Manual</p>  <p>Rev 2.9 August, 2017</p>	<p><a href="#">FeelTech FY6600 Series Dual Channel Function/Arbitrary Waveform Generator User's Manual</a></p> <p>Comprehensive user's manual for the FeelTech FY6600 series dual-channel function and arbitrary waveform generator, detailing features, operations, specifications, and troubleshooting for models like FY6600-60M.</p>