OWON XSA805-TG

OWON XSA805-TG Spectrum Analyzer User Manual
Model: XSA805-TG

1. Introduction

This manual provides comprehensive instructions for the OWON XSA805-TG Spectrum Analyzer. It covers the device's features, setup, operation, and maintenance to ensure safe and efficient use. The XSA805-TG is a high-performance spectrum analyzer designed for various signal analysis applications, featuring a 9-inch LCD, a frequency range of 9 kHz to 500 MHz, and a tracking generator.

2. Safety Information

Please read all safety instructions carefully before operating the device. Failure to follow these instructions may result in injury or damage to the instrument.

- **Power Supply:** Use only the specified power adapter. Ensure the power source matches the voltage requirements of the instrument.
- **Environment:** Operate the device in a dry, well-ventilated area. Avoid exposure to extreme temperatures, humidity, dust, or corrosive gases.
- **Ventilation:** Do not block the ventilation openings on the instrument. Adequate airflow is essential to prevent overheating.
- **Connections:** Ensure all connections are secure before powering on the device. Disconnect power before making or changing connections.
- **Servicing:** Do not attempt to service the instrument yourself. Refer all servicing to qualified service personnel.
- **Cleaning:** Clean the instrument with a soft, dry cloth. Do not use liquid or aerosol cleaners.

3. Product Overview

The OWON XSA805-TG Spectrum Analyzer is equipped with a 9-inch LCD and various interfaces for comprehensive signal analysis. Below are the key components and their functions.

3.1 FRONT PANEL

The front panel features the main display, control buttons, numeric keypad, and input/output ports.

- **Menu Softkeys:** Context-sensitive buttons for menu navigation.
- **Function Keys:** Dedicated buttons for common functions like SPAN, RBW, Trace, etc.
- **Knob:** Rotary encoder for adjusting parameters and navigating menus.
- **Arrow Keys:** For precise cursor movement and parameter selection.
- **Numeric Keypad:** For direct entry of numerical values.
- **Power Key:** To turn the device on or off.
- **USB Host Interface:** For connecting USB storage devices or other peripherals.
- **Earphone Interface:** For audio output.
- **Tracking Generator Output (optional):** Output for the tracking generator function.
- **RF Input Connector:** Main input for RF signals.

3.2 REAR PANEL

Menu Softkeys   Function Keys

Power Key   Earphone Interface   Tracking Generator Output(optional)   RF Input Connector

USB Host Interface   Numeric Keypad

Knob

Arrow Keys

Handle

Security Lock Hole

HDMI Interface

USB Device Interface

Trigger Input Connector

Reference Clock in/out

LAN Interface

AC Power Connector

Weight:Approx 3.7kg(main device)
Dimensions:37.5cm(W)*18.5cm(H)*12cm(D)

The rear panel provides additional connectivity options and power input.

- **HDMI Interface:** For connecting an external display.
- **USB Device Interface:** For connecting the analyzer to a computer.
- **Trigger Input Connector:** For external trigger signals.
- **Reference Clock In/Out:** For external clock synchronization.
- **LAN Interface:** For network connectivity.
- **AC Power Connector:** For connecting the power cord.
- **Security Lock Hole:** For securing the device.

4. Setup

Follow these steps to set up your OWON XSA805-TG Spectrum Analyzer.

1. **Unpacking:** Carefully remove the spectrum analyzer and all accessories from the packaging. Inspect for any signs of damage.
2. **Power Connection:** Connect the provided AC power cord to the AC Power Connector on the rear panel and then to a suitable power outlet.
3. **Initial Power On:** Press the Power Key on the front panel to turn on the device. The system will boot up and display the main measurement interface.

4. **External Connections (Optional):**
    - **USB Devices:** Connect USB storage or other peripherals to the USB Host Interface.
    - **Computer Connection:** Use a USB cable to connect the USB Device Interface to your computer for data transfer or remote control.
    - **External Display:** Connect an HDMI cable to the HDMI Interface for an external monitor.
    - **Network:** Connect an Ethernet cable to the LAN Interface for network access.

5. Operating Instructions

This section details the primary functions and operational modes of the XSA805-TG Spectrum Analyzer.

5.1 BASIC MEASUREMENT

Upon startup, the analyzer displays the default spectrum measurement screen. Use the function keys and softkeys to adjust parameters such as Center Frequency, Span, Resolution Bandwidth (RBW), and Video Bandwidth (VBW).

- **Center Frequency:** Sets the center frequency of the displayed spectrum.
- **Span:** Defines the frequency range displayed around the center frequency.
- **RBW (Resolution Bandwidth):** Determines the frequency resolution of the measurement. A smaller RBW provides better resolution but increases sweep time.
- **VBW (Video Bandwidth):** Controls the bandwidth of the video filter, affecting trace smoothing.

5.2 QUICK CAPTURE FUNCTION

The quick capture function allows for rapid analysis of ASK/FSK modulated signals, directly providing center frequency, power, and offset parameters. This is particularly useful for analyzing signals from devices like car remote keys, TRMS tire pressure modules, and small wireless modules.

Quick capture function

Car remote keys，TRMS tire pressure modules and small wireless modules usually use ASK/FSK Modulation,XSA800 can complete the capture of ASK/FSK signals,and directly obtain its center frequency,power and offset parameters.
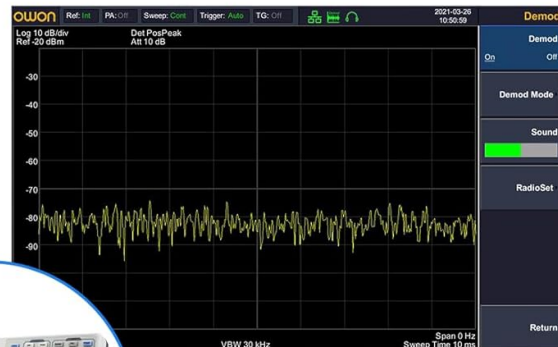

1 Hz minimum resolution bandwidth (RBW)
effectively distinguishing the nearby signals

Car remote keys

small wireless modules usually

TRMS tire pressure modules
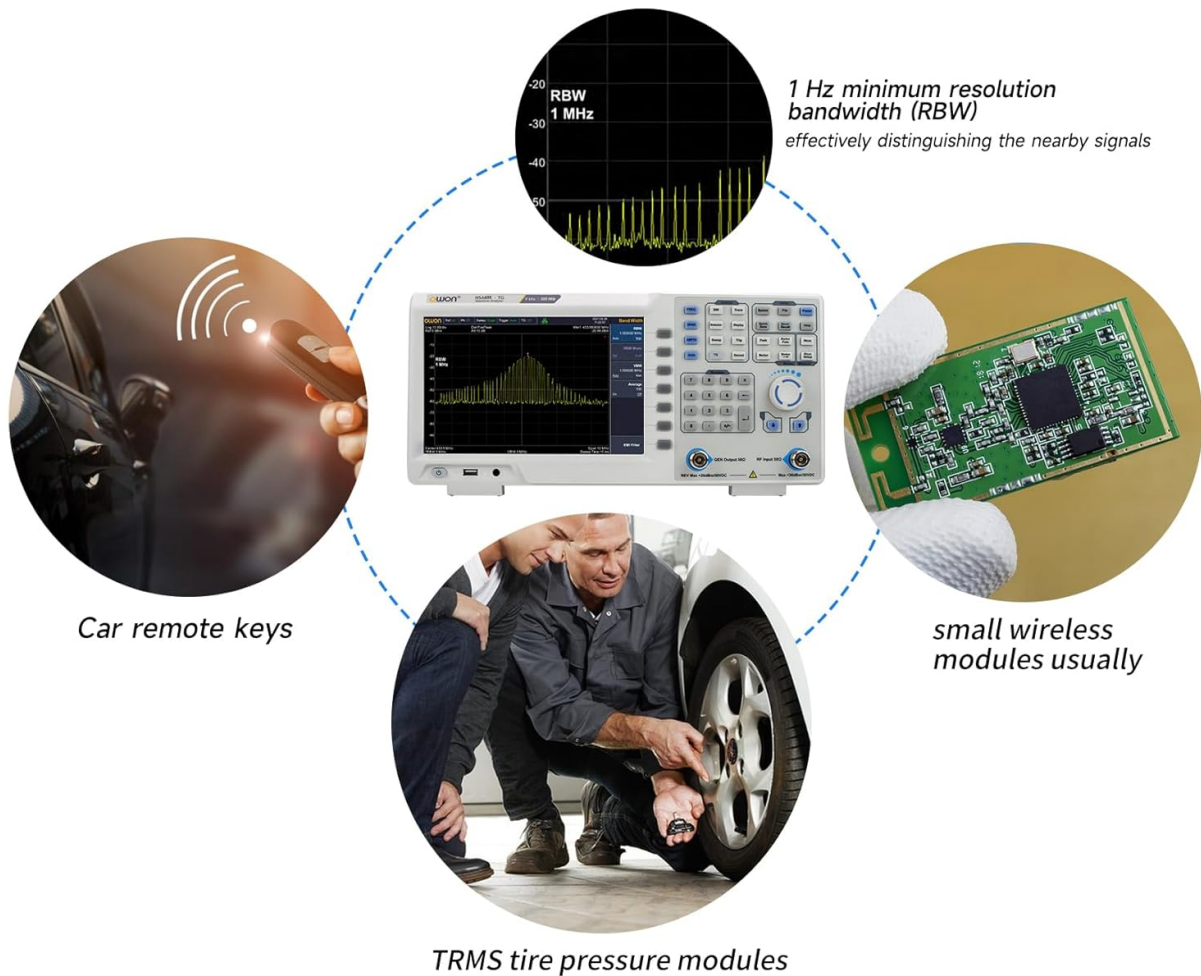
The image above illustrates the application of the quick capture function for various wireless devices.

Provide Multiple Extended Function Modes

Standard modulation signal quality analysis, audio demodulation, filed strength measurement, channel measurement and frequency counter, ect. Multiple general and extended test functions.
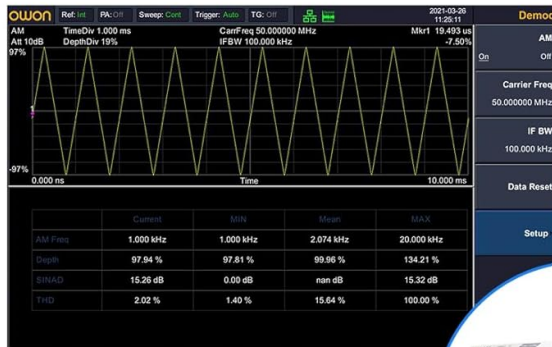
Modulation signal quality analysis

Audio demodulation

Channel measurement

Frequency counter

This image highlights the 1 Hz minimum resolution bandwidth (RBW) capability, which effectively distinguishes nearby signals, crucial for detailed analysis in quick capture mode.

5.3 EXTENDED FUNCTION MODES

The XSA805-TG offers multiple extended function modes for advanced analysis, including modulation signal quality analysis, audio demodulation, field strength measurement, channel measurement, and frequency counter.

Provide EMC Test Function（requires optional software)

Built-in more than 200 mainstream EMC test standards and regulations templates. The user selects the correspondingtemplate, and the software automaticaly sets the spectrum analyzer and records the test data. The data and requlationscan be compared on the same screen, Users can also customize regulations for comparative analysis.
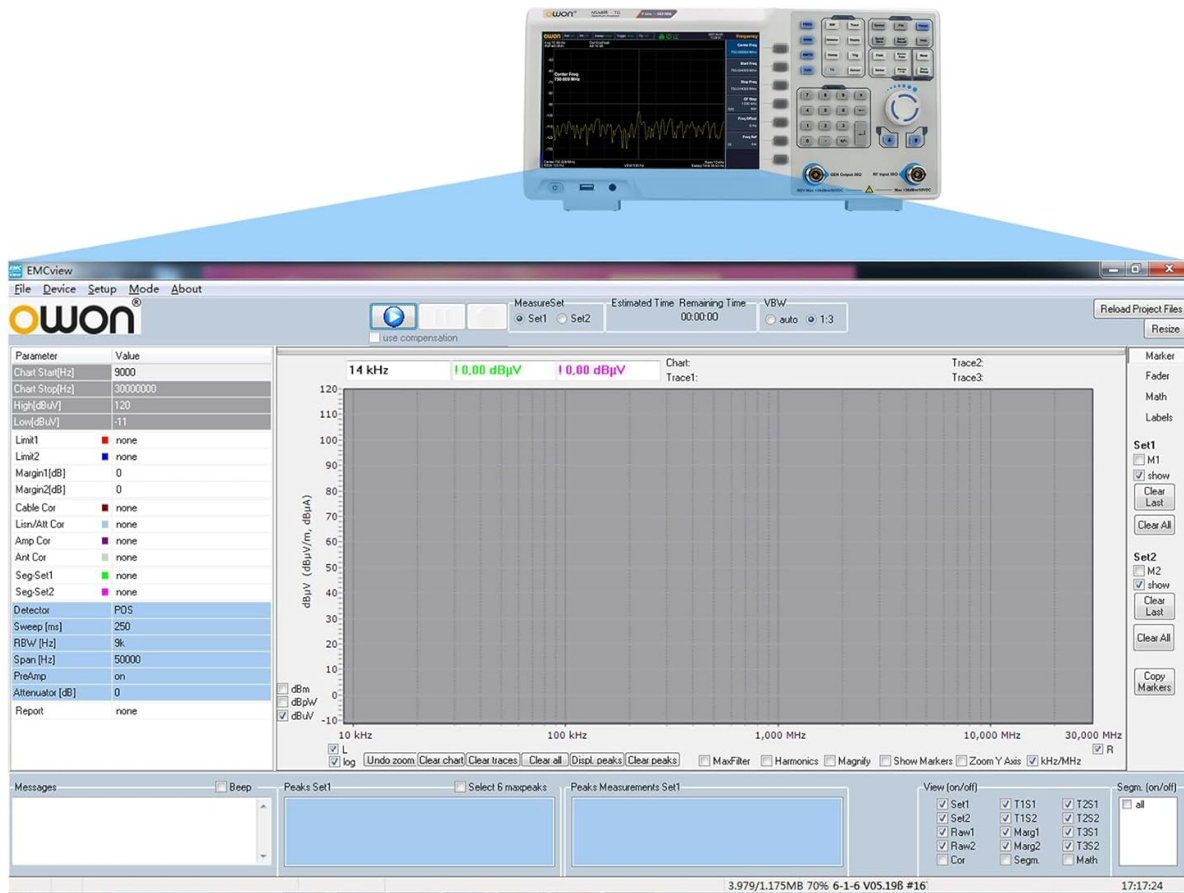
The image above shows the interface for modulation signal quality analysis and audio demodulation.

XSA800 series
Spectrum Analyzer

Model No.	XSA805(-TG)	XSA810(-TG)	XSA815(-TG)
Frequency			
Frequency Range	9kHz - 500MHz	9kHz - 1GHz	9kHz - 1.5 GHz
Frequency Resolution	1Hz		
Frequency Span Range	0 Hz, 100 Hz to the max. frequency range		
Aging Rate	<1ppm/year		
Frequency Counter Resolution	1Hz, 10 Hz, 100 Hz, 1 kHz		
Resolution Bandwidth (-3 dB)	1Hz to 1MHz @ 1 - 10 step, 1MHz, 3MHz		
Video Bandwidth (-3 dB)	1Hz to 1MHz		
Phase Noise (20 ℃ to 30 ℃, c = 1GHz)			
Phase noise	<-80 dBc/Hz @ 10 kHz offset		
	<-100 dBc/Hz @ 100 kHz offset		
	<-115 dBc/Hz @ 1 MHz -500MHz offset		
Level Unit	dBm, dBuW, dBpW, dBmV, dBuV, W, V		
Trace Detectors	positive-peak, negative-peak, sample, normal, RMS, average, quasi-peak		
Trace Functions	clear write, max hold, min hold, view, blank, average, trace math		
VSWR	300 kHz to 1.5 GHz when input ≥ 10 dB		
	nominal when input <1.5dB		
Tracking Generator(optional)			
Frequency Range	100 kHz to 1.5 GHz		
Power Level Range	-40 dBm to 0 dBm		
Power Level Resolution	1dB		
General			
Display	9'' 1280 x 800 pixels TFT LCD		
Communication Interface	USB host, USB device, LAN, earphone port, HDMI		

This image displays the interfaces for channel measurement and the frequency counter, demonstrating the versatility of the analyzer.

5.4 EMI TEST FUNCTION (OPTIONAL SOFTWARE REQUIRED)

The device supports EMI pre-compliance testing with an optional software package. It includes over 200 mainstream EMC test standards and regulation templates. This allows users to select corresponding templates, and the software automatically configures the spectrum analyzer and records test data. Data and regulations can be compared on the same screen, and users can customize regulations for comparative analysis.
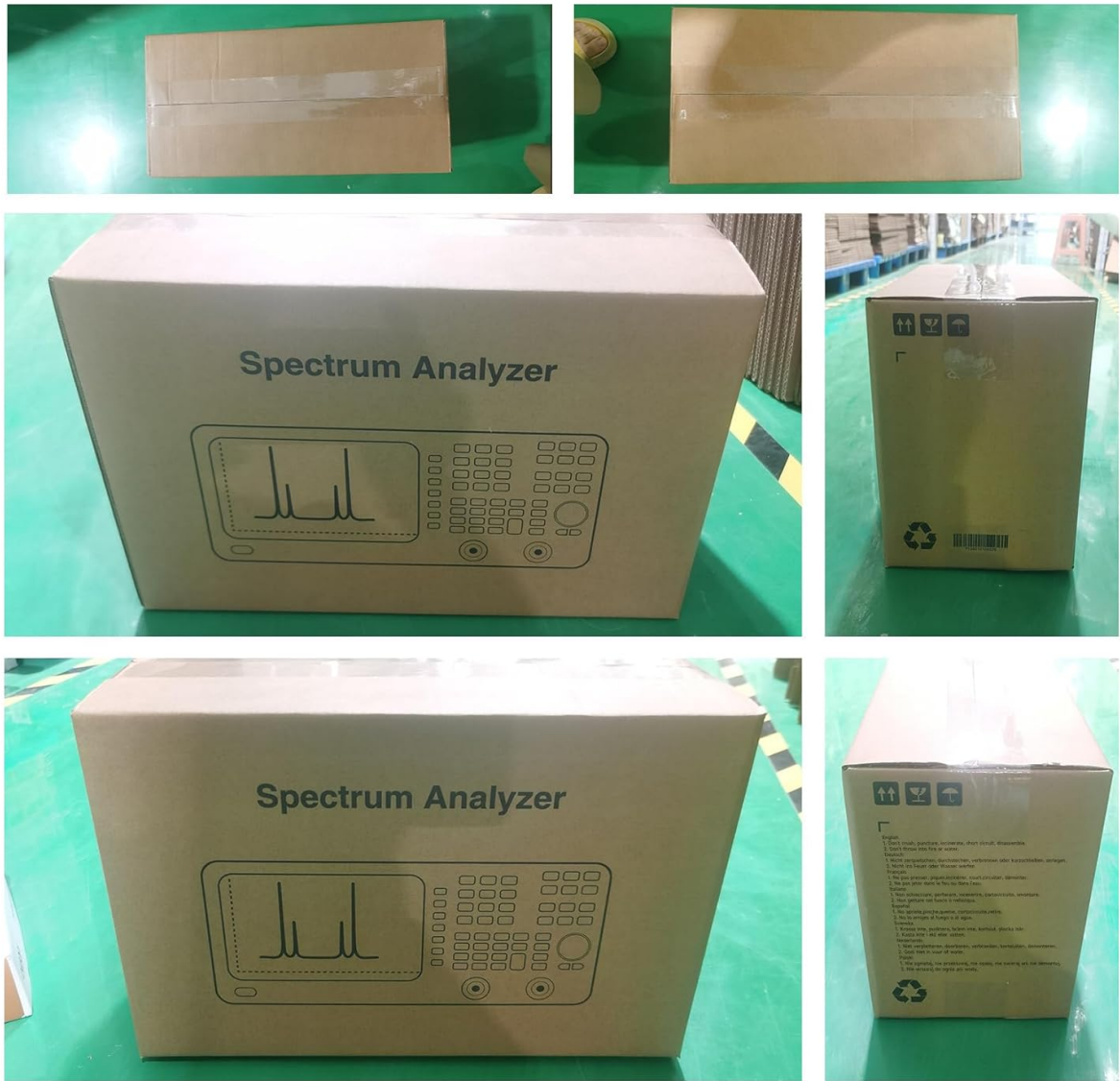
The image illustrates the EMI test software interface, showing measurement parameters and a graphical display of test results.

6. Specifications

The following table outlines the key technical specifications for the OWON XSA805-TG Spectrum Analyzer.

This image provides a detailed comparison of specifications across the XSA800 series, including the XSA805-TG model.

General Specifications

Feature	Specification
Product Dimensions	20.28 x 10.43 x 13.78 inches
Weight	11.02 Pounds
Display	9-inch LCD, 1280x800 Pixels
Frequency Range	9 kHz - 500 MHz
Displayed Average Noise Level (DANL)	-160 dBm
Phase Noise	-80 dBc/Hz @ 1 GHz and offset at 10 kHz
Minimum Resolution Bandwidth (RBW)	1 Hz
Interfaces	USB Host, USB Device, LAN, Earphone, HDMI

7. Maintenance

Proper maintenance ensures the longevity and optimal performance of your spectrum analyzer.

- **Cleaning:** Regularly clean the exterior of the instrument with a soft, dry, lint-free cloth. Do not use abrasive cleaners or solvents. For the display, use a screen-specific cleaner if necessary, applied to the cloth, not directly to the screen.
- **Storage:** When not in use, store the analyzer in a clean, dry environment, away from direct sunlight and extreme temperatures. Use the original packaging or a protective case if available.
- **Calibration:** For critical measurements, periodic calibration by qualified service personnel is recommended to maintain accuracy.
- **Software Updates:** Check the OWON official website for any available firmware or software updates to ensure your device has the latest features and bug fixes.

8. Troubleshooting

This section provides solutions to common issues you might encounter with your OWON XSA805-TG.

Problem	Possible Cause	Solution
Device does not power on	Power cord not connected; Power outlet faulty; Device fault.	Check power cord connection; Test power outlet; Contact support if issue persists.
No signal displayed	Input signal cable disconnected; Input signal too weak; Incorrect frequency settings.	Verify signal cable connection; Ensure signal source is active; Adjust Center Frequency and Span.
Screen frozen or unresponsive	Software error; Temporary glitch.	Restart the device by holding the power button; If persistent, check for firmware updates.

Problem	Possible Cause	Solution
USB device not recognized	USB device incompatible; Faulty USB port.	Try a different USB device; Use a different USB port; Ensure device is formatted correctly.

If you encounter problems not listed here or if the suggested solutions do not resolve the issue, please contact OWON customer support.

9. Warranty and Support

OWON provides a limited warranty for its products. Please refer to the warranty card included with your product or visit the official OWON website for detailed warranty terms and conditions.

For technical support, service, or inquiries, please contact OWON customer service through the following channels:

- **OWON Official Website:** www.owon.com (Check for support contact information, FAQs, and software downloads)
- **Authorized Service Centers:** A list of authorized service centers may be available on the OWON website.

When contacting support, please have your product model number (XSA805-TG) and serial number ready.

Related Documents - XSA805-TG

Анализатор спектра со следящим генератором OWON XSA815-TG Руководство по эксплуатации	[Руководство пользователя анализатора спектра OWON XSA815-TG с генератором слежения](#) Данное руководство пользователя содержит подробные инструкции и спецификации для анализатора спектра OWON XSA815-TG с генератором слежения, охватывая настройку, эксплуатацию, измерения и устранение неполадок.
OWON Metro SDS1102+ Digital Oscilloscope with Function Generator Oscilloscope, and more 100MHz Bandwidth 1GSa/s Sampling rate 10K Record Length 30 Automatic measurements	[Owon SDS1102+ Digital Oscilloscope with Function Generator](#) Detailed specifications and features of the Owon SDS1102+ Digital Oscilloscope, including its bandwidth, sampling rate, record length, automatic measurements, and waveform generator capabilities. The document also lists included accessories.

[OWON HDS200 Series SCPI Command Protocol Reference](#)

This document details the Standard Commands for Programmable Instruments (SCPI) protocol for the OWON HDS200 Series oscilloscopes, covering horizontal settings, acquisition, channel configuration, triggering, measurements, and function generator control.

[OWON HDS200 Dual Channel Series Handheld Oscilloscope Quick Guide](#)

A quick guide for the OWON HDS200 Dual Channel Series Handheld Oscilloscope, covering safety information, general inspection, oscilloscope and multimeter usage, waveform generator functionality, troubleshooting, maintenance, and accessories. Includes model numbers HDS272(S), HDS242(S), and HDS2102(S).

[Owon PCT523-W-TY Wi-Fi Smart Thermostat Quick Start Guide](#)

A quick start guide for installing and setting up the Owon PCT523-W-TY Wi-Fi Smart Thermostat, covering safety, installation steps, wiring diagrams, app setup, and basic thermostat operation.

[Owon SPF-1010-WB-TY Smart Pet Feeder Quick Start Guide](#)

Get started with the Owon SPF-1010-WB-TY Smart Pet Feeder. This guide provides setup instructions, features, and technical specifications for automated pet feeding.

Documents - OWON – XSA805-TG