802 AWE
Advanced Wireless Expert

Operation Manual

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. See Page iv for complete details.

Industry Canada / Industrie Canada

This equipment has been tested and found to comply with Industry Canada Standards. See Page v for complete details.

innovative technology to keep you a ***step ahead***

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Putting Innovation Within Reach

Product innovation at Trilithic has always been characterized by one thing: it's practical. It makes life easier for customers. It's the natural result of listening to them. That philosophy has been the driving force behind the company's growth from its beginnings as a two-man engineering team in 1986 to its current position as a global manufacturer with more than 130 employees.

A privately held company, Trilithic broadened its original RF and microwave component product line by acquiring Filters manufacturer Cir-Q-Tel and instruments manufacturer Texscan, adding broadband solutions to the product line. The company also expanded operations to Thailand in 2001, to meet increasing demand for its products in the growing markets of Asia.

As new communications applications continue to emerge, part of Trilithic's business has evolved into managing change—helping customers respond quickly to market opportunities with innovative technology and individualized solutions. But the core value of Trilithic's business approach—listening to customers—hasn't changed. Keeping that focus intact will help provide better products in the long run and ensure continued growth for decades to come.

Trilithic is comprised of two major divisions:

Broadband Instruments

The company is best known for innovations in signal level measurement, leakage detection and reverse path maintenance—like the use of Digital Signal Processing (DSP) technology, which lets field technicians upgrade their signal analyzers by simply downloading firmware.

Emergency Alert Systems

Trilithic's EAS division is a leading supplier of homeland security government-mandated emergency alert systems for broadband and other communication system providers. As the communications industry continues its rapid evolution, Trilithic has begun offering comprehensive systems and services to address a wide variety of emergency alert system needs, including the design and architectural layout of complex analog and digital EAS networks.

FCC Part 15 Compliance

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

Pursuant to FCC 15.21 of the FCC rules, changes not expressly approved by Trilithic, Inc. might cause harmful interference and void the FCC authorization to operate this product.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the device and receiver
- Connect the device into an output on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Industry Canada Compliance

Industry Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation of this device is subject to the following two conditions; 1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

Industrie Canada Conformité

Industrie Canada

Cet appareil est conforme au Cahier des charges sur les normes radioélectriques d'Industrie Canada concernant les appareils radio exempts de licence. Le fonctionnement de cet appareil est soumis aux deux conditions suivantes : 1) cet appareil ne doit pas produire de brouillage et 2) cet appareil doit accepter tout brouillage, y compris celui pouvant causer un mauvais fonctionnement de l'appareil.

Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003.

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802 AWE
Advanced Wireless Expert

Section I: The Basics

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Helpful Website

The following website contains general information which may be of interest to you:

http://www.trilithic.com

Trilithic's website contains product specifications and information, tips, release information, marketing information, frequently asked questions (FAQs), bulletins and other technical information. You can also check this website for product updates.

Trilithic technical support is available Monday through Friday from 8:00 AM to 5:00 PM EST. Callers in North America can dial 1-317-895-3600 or 1-800-344-2412 (toll free). International callers should dial 1-317-895-3600 or fax questions to 1-317-895-3613. You can also e-mail technical support at *support@trilithic.com*.

For quicker support response when calling or sending e-mail, please provide the following information:

- Your name and your company name
- The technical point of contact (name, phone number, e-mail)
- A detailed description of the problem you are having, including any error or information messages
- The serial number of the 802 AWE that you are having problems with

How this Manual is Organized

Thank you for choosing the 802 AWE. This manual is provided with the 802 AWE to help the user become better acquainted with the device and to become productive faster. Each section is written as though the user is familiar with the basic operation of the instrument and is broken into chapters for each function.

This manual is divided into the following sections:

- Section I: The Basics – This section provides Trilithic contact information, describes how this operation manual is structured, and gives an overview of the instrument and its basic features. Before using the instrument, it is recommended that the user read this section for an overview of features, basic commands and other important details.
- Section II: Setup Menu – This section includes instructions on how to use the features shown in the Setup Menu of the instrument.
- Section III: Survey Menu – This section includes instructions on how to use the features shown in the Survey Menu of the instrument.
- Section IV: Troubleshoot Menu – This section includes instructions on how to use the features shown in the Troubleshoot Menu of the instrument.
- Section V: Appendix – This section provides instrument specifications and warranty information.

Conventions Used in this Manual

This manual has several standardized conventions for presenting information:

- Connections, menus, menu options, and user-entered text and commands appear in **bold**.
- Section names, web, and e-mail addresses appear in *italics*.

A NOTE is information that will be of assistance to you related to the current step or procedure.

A CAUTION alerts you to any condition that could cause a mechanical failure or potential loss of data.

A WARNING alerts you to any condition that could cause personal injury.

Precautions

Do not use the instrument in any manner not recommended by the manufacturer.

A strong electromagnetic field may affect the measurement accuracy of the 802 AWE.

Use only the battery charger supplied with the 802 AWE. Use of any other charger may damage the battery.

Damage caused by improper cleaning of the display screen will void the warranty of the 802 AWE.

Never use abrasive pads, paper towels, tissue paper, or clothing to wipe the screen. If you do, these non-ultrasoft materials can cause permanent damage by scratching the screen or stripping the anti-glare coating off the screen.

Never use any type of window cleaner, soap, scouring powder, or any cleanser with solvents such as alcohol, benzene, ammonia, or paint thinner. These chemicals can react with the materials used to construct the display which can lead to hazing, yellowing, brittleness, or other types of damage.

Never spray liquid directly on the display screen as it could run inside the unit and cause damage.

What is the 802 AWE?

Overview

As wireless networks and technologies continue to expand, the new 802 AWE™ Advanced Wireless Test Set from Trilithic is designed to help identify and resolve many problems that are encountered during wireless network deployments.

- Powerful all-in-one Device Designed for Troubleshooting of Wi-Fi (a/b/g/n/ac*), Ethernet (10/100), ZigBee & Bluetooth Networks
- Easily Identify Coverage Problems, Connectivity Issues, Security Risks, Unauthorized/Failed Access Points & Clients in the 2.4 and 5 GHz Bands
- Analyze Overlaps in Wireless Channel Broadcasts to Prevent Interference Between Wi-Fi and ZigBee Wireless Home Security & Automation Networks
- Certify Wi-Fi Installations Using Convenient, One-Touch Survey Apps *(Coming Soon)*

The 802 AWE is ideal for wireless network installation or troubleshooting and features a compact rugged design, easy-to-use color user interface and built-in antenna for testing of Wi-Fi (a/b/g/n/ac*), ZigBee or Bluetooth wireless networks. The device also includes an Ethernet port for connectivity, traceroute, and throughput testing through wired networks.

The 802 AWE offers a superior solution for proactive troubleshooting of wired and wireless networks and is the most cost-effective testing tool available for 2.4 GHz and 5 GHz wireless networks.

Available Functions

The 802 AWE supports a variety of functions, including:

- Multi-User Support
- Multi-Language Support
- Interactive Surveying Apps
- Datalogs and Screen Captures

Simple Yet Powerful

Providing the widest range of standard functions for installation and maintenance technicians available today, the 802 AWE provides you with a total end-to-end testing solution for all of your network installation, verification and troubleshooting needs. With the 802 AWE you can quickly and easily analyze overlaps in wireless channel broadcasts to prevent interference between Wi-Fi and ZigBee wireless home security & automation networks.

802.11ac Survey & Connectivity Support

The 802 AWE provides next generation support for 802.11ac networks using its built-in 802.11 a/b/g/n wireless adapter. As with other wireless standards, the 802.11ac standard provides backwards compatibility with the 802.11n standard. This means that the 802 AWE can be used to detect, find, and connect to 802.11ac access points. Just like with other network devices, the 802 AWE provides information such as channel number, SSID, standard, security, max speed, channel width and number of streams for 802.11ac network devices. The 802 AWE can also connect to 802.11ac access points at 802.11n speeds using 20 or 40 MHz channels with 64 QAM modulation in the 5 GHz frequency band over a 1x1 MIMO stream.

In-Depth Measurements

For the more advanced user, the 802 AWE is a total end-to-end testing solution for all of your network installation, verification, and troubleshooting needs. The 802 AWE provides a wide variety of in-depth measurement tools and a full network test suite for both Ethernet and Wi-Fi networks.

Standard Testing Features

- Wi-Fi Frequency Band Survey
- Wi-Fi Channel Usage
- Zigbee Survey
- Bluetooth Survey
- Client Device Survey
- Client Device Finder
- Ping, Traceroute, & Throughput Measurements (RJ-45)

Standard Measurements

- Signal Level
- Noise Level
- Signal-to-Noise Ratio
- % Channel Usage
- SSID
- Number of Access Points
- Security Type
- Supported Wireless Standards
- Ping
- Traceroute
- Throughput

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Getting to Know Your 802 AWE

Overview

Before using your instrument, take a few minutes to familiarize yourself with the instrument, its basic conventions and its navigational tools. This section provides a brief overview of the instrument's features, buttons, and controls.

Equipment Supplied with the 802 AWE

The 802 AWE comes with the following:

- 802 AWE Advanced Wireless Expert
- Two Built-In Li-Ion Batteries
- Protective Carrying Case with Shoulder Strap
- AC to DC Power Adapter & Battery Charger
- USB Charge & Data Cable (Mini-B to Standard-A Male)
- USB Flash Drive Adapter (Mini-B Male to Standard-A Female)

Replacement Parts

The following replacement parts are available for the 802 AWE:

Part Number	Description
0090048000	Li-ION Replacement Battery (Replacement Requires 2 Batteries)
2131593000	802 AWE Protective Carrying Case with Belt Clip
0320052000	Shoulder Strap
0610169006	AC to DC Power Adapter & Battery Charger with USB Charge & Data Cable
0610169002	AC to DC Power Adapter & Battery Charger
2071585004	USB Charge & Data Cable
2071585050	USB Flash Drive Adapter

Field Accessories

The following accessories are available for the 802 AWE:

Part Number	Description
0610169007	CL-9 Vehicle Power Adapter with USB cable
0610169004	CL-9 Vehicle Power Adapter without USB cable
2071585004	Mini-USB Power/Data Cable (I/O-20)
0610169012	Euro Power Adapter
0610169013	UK Power Adapter
0610169014	Australian Power Adapter