

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

**Artisan Technology Group**
(217) 352-9330 | sales@artisantg.com | artisantg.com

**Full-service, independent repair center**
with experienced engineers and technicians on staff.

**We buy your excess, underutilized, and idle equipment**
along with credit for buybacks and trade-ins.

**Custom engineering**
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

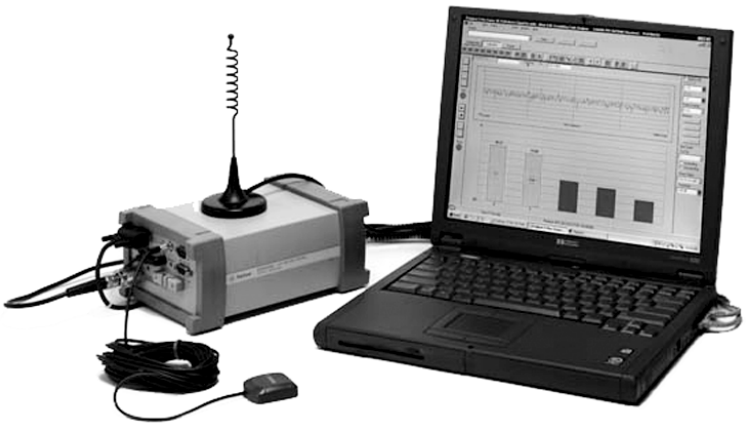
**Expert team | Trust guarantee | 100% satisfaction**

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Keysight / Agilent E6450B* at our website: ***Click HERE***

# Agilent
# E7476A W-CDMA (UMTS) Drive Test System with E6455C IMT2000 Digital Receiver

## Configuration Guide



The Agilent E7476A W-CDMA (UMTS) drive test system is used to obtain RF coverage measurements for wireless communications networks using W-CDMA (UMTS) 3GPP technologies. A PC interfaces with an Agilent digital RF receiver. The system can control up to four receivers simultaneously.

The Agilent E7476A W-CDMA drive test system is offered in the following configuration:

- ❏ Receiver-based systems

The purpose of this configuration guide is to assist you in ordering the correct system configuration for your application. It is designed to be used in conjunction with the Agilent E7476A Data Sheet (literature number 5980-3027EN) which describes the features and functionality in detail. This document is divided into four parts:

- ❏ Part 1: Basic description of product configuration
- ❏ Part 2: Software options
- ❏ Part 3: Receiver hardware options
- ❏ Part 4: Accessories
- ❏ Part 5: Upgrading existing systems
- ❏ Part 6: Ordering examples

Agilent Technologies

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

## Part 1: Basic description of product configuration

The system is made up of software, receiver hardware, and accessories. To order a system you:

1. Choose the software functionality that you want (option numbers in the 100s)
2. Choose the receiver hardware that you want (Agilent E6455C digital receiver)
3. Choose the accessories that you want (Agilent 86154A drive test system accessories)

Each system requires an Agilent digital receiver (E6455C). The system also requires a PC with Windows® 95, 98 or NT® running the measurement software. A GPS receiver and GPS antenna is required in order to log the position information. A GPS receiver is supplied internal to the Agilent digital receiver for convenience. However, the positioning data can also be supplied by a customer's GPS.

Figures 1 and 2 illustrate the process of choosing the specific options to order with your Agilent E7476A system.

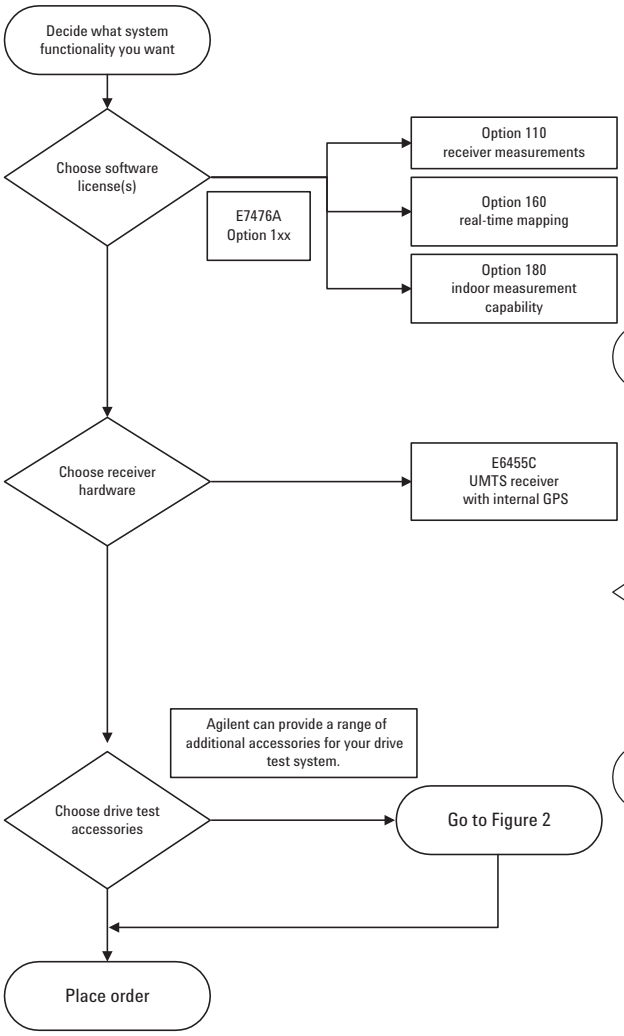



**Figure 1. Ordering decision process - new systems**

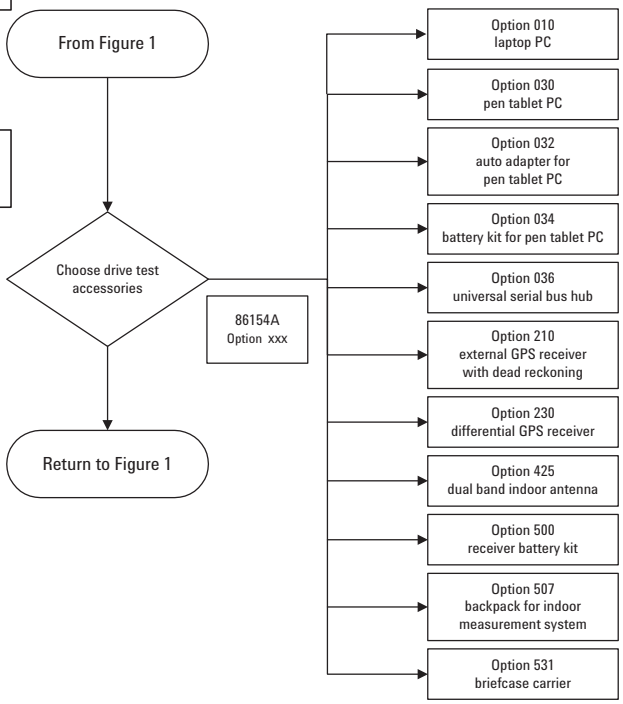



**Figure 2. Ordering decision process - accessories for new systems**

**IMPORTANT**: At least one E7476A option must be ordered for the product configuration to be valid. This does not apply to 86154A accessory options.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

## Part 2: Software options

This part of the document assumes that you are creating a new system. If you are adding functionality to an existing system, refer to Part 5: Upgrading existing systems.

The following software options are available on the Agilent E7476A:

- ❑ Option 110: W-CDMA receiver-based system software license
- ❑ Option 160: Real-time mapping software license
- ❑ Option 180: Indoor measurement capability

Use Table 1 below to determine which software option(s) you require for your application. For a detailed description of the functionality, please refer to the Agilent E7476A Data Sheet (literature number 5980-3027EN).

Each software order includes the following components:

- ❑ CD with software and documentation
- ❑ Getting Started Guide
- ❑ Software license key. Two software key configurations are provided: PC parallel port or USB port configurations. The user selects the desired PC configuration for the software license key

| Desired functionality | Software option(s) required |
|---|---|
| ❑ Receiver-based drive system measurements (up to 4 receivers) | ❑ 110 |
| ❑ Real-time mapping capability (can be combined with all other software functionality) | ❑ 160 (can be combined with any or all other software option numbers) |
| ❑ Indoor measurement capability (can be combined with all other software functionality) | ❑ 180 (can be combined with any or all other software option numbers) |

**Table 1. Software functionality**

## Part 3: Receiver hardware options

This part of the document assumes that you are creating a new system. If you are adding functionality to an existing system, refer to Part 5: Upgrading existing systems.

The following digital receiver hardware needs to be used in conjunction with the software options above:

- ❑ E6455C IMT2000 band digital receiver with internal GPS receiver

Software Option 110 is required to operate Agilent receivers. One software package can control up to four receivers.

When selecting a measurement receiver you have the option of using the GPS internal to the receiver. Internal GPS provides portability and simplifies system configuration. If you require dead reckoning with your GPS, you need to use an external GPS. Agilent RF receivers with internal GPS can be configured to be used with an external GPS. Agilent offers an external GPS with dead reckoning capability. Refer to Part 4: Accessories.

For receiver specifications and a detailed description of the receiver functionality, please refer to the Agilent E7476A Data Sheet (literature number 5980-3027EN).

Each receiver includes the following components:

- Magnetic-mount RF antenna for the corresponding frequency band
- TNC-to-typeN adapter for RF antenna
- RS-232 cable for connection to PC
- Cable for connecting in multiple receiver configuration
- AC/DC power supply
- DC power cord – cigarette lighter type
- Mounting kit (brackets and screws for mounting receiver in a vehicle)
- Magnetic-mount GPS antenna with cable



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

## Part 4: Drive test accessories

The following accessories for E7476A are ordered using the Agilent 86154A model number. The 86154A model number provides an easy way to order accessories for all Agilent drive test products.

Table 2 lists the accessories that are applicable for the Agilent E7476A. Items in column 1 would typically be ordered along with an E7476A system. Items in column 2 would typically only be ordered as replacement parts, as these elements are included with the E7476A system.

| E7476A optional system accessories | | E7476A replacement accessories | |
|---|---|---|---|
| Agilent 86154A | | Agilent 86154A | |
| ❑ Option 010: | Laptop PC | ❑ Option 020: | Socket I/O ruggedized dual serial port PCMCIA card |
| ❑ Option 210: | Trimble Placer GPS 455 with dead reckoning | ❑ Option 099: | Multiple receiver interconnect kit |
| ❑ Option 230: | Differential GPS receiver | ❑ Option 450: | W-CDMA band magnetic-mount RF antenna |
| ❑ Option 531: | Briefcase carrier | ❑ Option 500: | Vehicle mounting kit |

**Table 2. Accessories**

For a detailed description of these accessories, please refer to Agilent E7476A Data Sheet (literature number 5980-3027EN).

Table 3 lists the optional indoor accessories for the E7476A.

| E7476A optional indoor accessories | |
|---|---|
| Agilent 86154A | |
| ❑ Option 030: | Fujitsu pen tablet computer |
| ❑ Option 032: | Pen tablet auto adapter |
| ❑ Option 034: | Pen tablet battery kit |
| ❑ Option 036: | Universal serial bus hub |
| ❑ Option 425: | Dual band indoor antenna |
| ❑ Option 507: | Measurement system backpack |
| ❑ Option 500: | Receiver battery kit |

**Table 3. Accessories intended for indoor use**

For a detailed description of the optional indoor accessories, please refer to the Agilent Indoor Wireless Measurement System Product Overview (literature number 5968-8691E).

Important: A pen tablet is highly recommended for indoor measurements. Order 86154A Option 030.

Please note: Indoor receiver-based pilot channel analysis is limited due to difficulty with GPS timing. Please refer to E7476A Data Sheet (literature number 5980-3027EN) for a detailed description of the indoor W-CDMA measurements.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

## Part 5: Upgrading existing systems

The Agilent E7476A is a scaleable system. You can start with one set of capability and integrate additional capability later. For example, you can:

- Start with an outdoor drive test system and upgrade to include indoor measurement capability.

The system is made up of software, receiver hardware, and accessories. Upgrading a system is similar to ordering a new system. You simply order those system elements that you need. To upgrade a system:

1. Decide what system capability you want
2. Identify the capability you currently have
3. Choose the software options that you want (option numbers in the 100s), refer to Part 2: Software options.
4. Choose the hardware options that you want (option numbers in the 300s), refer to Part 3: Receiver hardware options
5. Choose the accessories that you want (Agilent 86154A and E7476A drive test system accessories), refer to Part 4: Accessories

Figures 3 and 4 illustrate the process of choosing the specific options to order when you are upgrading an Agilent E7476A system.

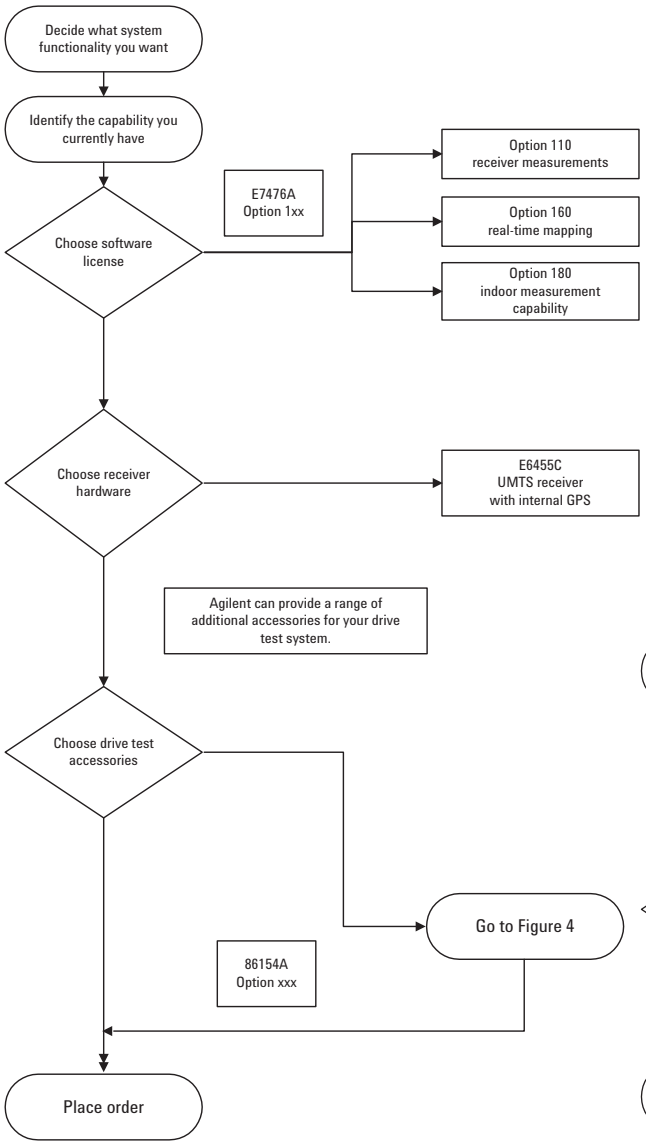



**Figure 3. Ordering decision process - upgrades**

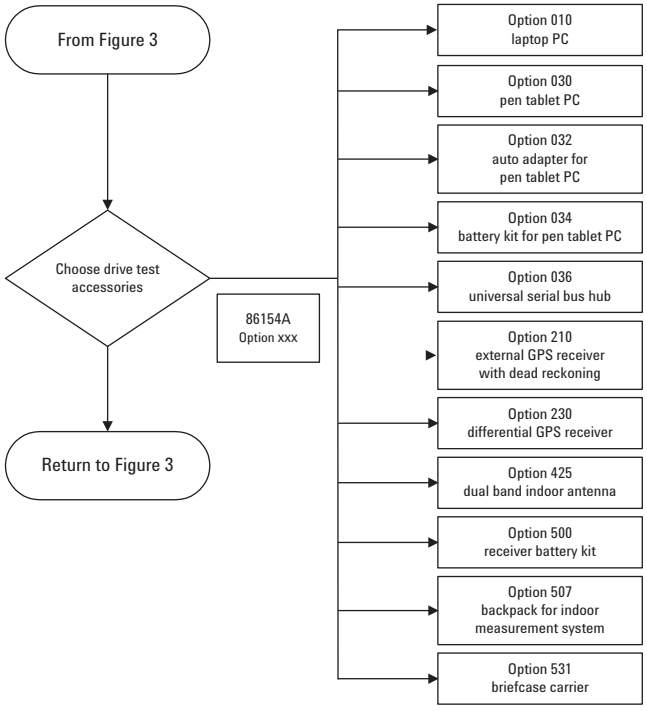



**Figure 4. Ordering decision process - accessories for upgrades**



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

## Part 6: Ordering examples

Table 4 lists several typical E7476A system configurations along with the products and options that need to be ordered for each configuration. This is not a complete list of all possible configurations, but it uses typical configurations to illustrate the ordering process.

| Desired system capability | What to order | Description | Quantity |
|---|---|---|---|
| Receiver-based measurement system for the W-CDMA band with a carrying case for the system. You will provide your own GPS and laptop. | Agilent E7476A | Drive test system | 1 |
| | Option 110 | Receiver measurement software | 1 |
| | Agilent E6455C | W-CDMA receiver with internal GPS | 1 |
| | Agilent 86154A | Drive system accessories | 1 |
| | Option 531 | Briefcase carrier | 1 |
| Receiver-based measurement system for the W-CDMA band with internal GPS with a carrying case for the system. You will provide your own laptop. | Agilent E7476A | Drive test system | 1 |
| | Option 110 | Receiver measurement software | 1 |
| | Agilent E6455C | W-CDMA receiver with internal GPS | 1 |
| | Agilent 86154A | Drive system accessories | 1 |
| | Option 531 | Briefcase carrier | 1 |
| Receiver-based measurement system for the W-CDMA band with dead reckoning and a carrying case for the system. You want the GPS included with the system. You will provide your own laptop. | Agilent E7476A | Drive test system | 1 |
| | Option 110 | Receiver measurement software | 1 |
| | Agilent E6455C | W-CDMA band RF digital receiver | 1 |
| | Agilent 86154A | Drive system accessories | 1 |
| | Option 210 | External GPS with DR | 1 |
| | Option 531 | Briefcase carrier | 1 |

**Table 4. Typical ordering configurations**



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

## Product Literature

**Configuration guides**

*E7473A CDMA Drive Test System Configuration Guide* . . . . . 5968-5553E
*E7474A TDMA Drive Test System Configuration Guide* . . . . . 5968-5861E
*E7475A GSM Drive Test System Configuration Guide*. . . . . 5968-5563E
*E7477A cdma2000 Drive Test System Configuration Guide*. . . . . 5980-2308E
*E7478A GPRS Drive Test System Configuration Guide*. . . . . 5988-1505EN
*E7490A CDMA BTS Maintenance Tool Configuration Guide* . . . . . 5968-8696E

**Technical specifications/data sheets**

*E7473A CDMA Drive Test System Data Sheet*. . . . . 5968-5555E
*E7474A TDMA Drive Test System Data Sheet*. . . . . 5968-5556E
*E7475A GSM Drive Test System*. . . . . 5968-5564E
*E7476A W-CDMA (UMTS) Drive Test System Data Sheet* . . . . . 5980-3027EN
*E7477A cdma2000 Drive Test System Data Sheet* . . . . . 5980-2306EN
*E7478A GPRS Drive Test System Data Sheet* . . . . . 5988-1506EN
*E7490A CDMA Over-Air Maintenance Tool Data Sheet* . . . . . 5968-8687E
*Wireless Data Measurement Data Sheet*. . . . . 5988-1507EN

**Product overviews**

*E7475A GSM Drive Test Product Overview*. . . . . 5980-0439E
*E7476A W-CDMA (UMTS) Drive Test System Product Overview*. . . . . 5980-2132E
*E7477A cdma2000 Drive Test System Product Overview* . . . . . 5980-2131E
*E7478A GPRS Drive Test System Product Overview* . . . . . 5980-2375E
*E7480A CDMA Post Processing Software Product Overview*. . . . . 5968-1549E
*Indoor Wireless Measurement System Product Overview* . . . . . 5968-8691E
*Wireless Data Measurement Product Overview* . . . . . 5980-2310E

**Application/product notes**

*CDMA Drive Test Product Note* . . . . . 5968-5554E
*Optimizing Your CDMA Wireless Network Today and Tomorrow Using Drive Test Solutions Application Note 1345*. . . . . 5968-9916E
*Optimizing Your GSM Network Today and Tomorrow Using Drive Testing to Troubleshoot Coverage, Interference, Handover Margin, and Neighbor Lists Application Note 1344* . . . 5980-0218E
*Optimizing Your TDMA Network Today and Tomorrow Interference Identification for IS-136 TDMA Wireless Networks Application Note 1342* . . . . . 5980-0219E
*Spectrum and Power Measurements Using the Agilent CDMA, TDMA, and GSM Drive Test Systems* . . . . . 5968-8598E



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

For the latest news, product and support information, and application literature, visit our Web site at:

**www.agilent.com/find/networks**

**Agilent Technologies' Test and Measurement Support, Services, and Assistance**

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

**Our Promise**

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

**Your Advantage**

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

**By internet, phone, or fax, get assistance with all your test and measurement needs.**

**Online assistance:**

**www.agilent.com/find/assist**


**Phone or Fax**
**United States:**
(tel) 1 800 452 4844

**Canada:**
(tel) 1 877 894 4414
(fax) (905) 282-6495

**China:**
(tel) 800 810 0189
(fax) 1 0800 650 0121

**Europe:**
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

**Japan:**
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

**Korea:**
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

**Latin America:**
(tel) (305) 269 7500
(fax) (305) 269 7599

**Taiwan:**
(tel) 080 004 7866
(fax) (886 2) 2545 6723

**Other Asia Pacific Countries:**
(tel) (65) 375 8100
(fax) (65) 836 0252
Email:
tm_asia@agilent.com


**Product specifications and descriptions in this document subject to change without notice.**


**© Agilent Technologies, Inc. 2001**


**Printed in USA July 9, 2001**
**5980-2307E**


**Agilent Technologies**


Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

**Artisan Technology Group** is an independent supplier of quality pre-owned equipment

## Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

## We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

## Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP