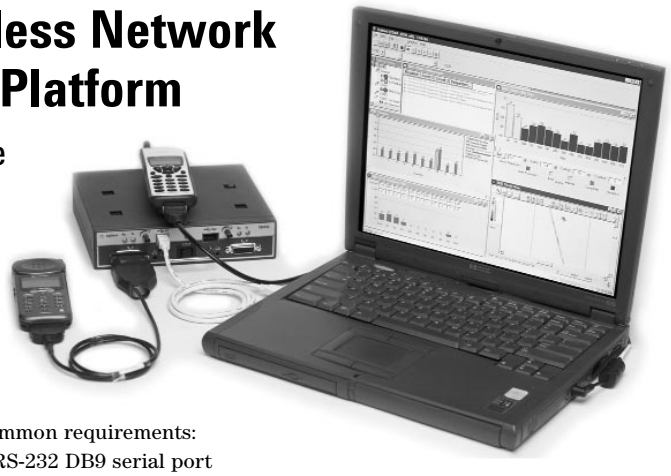
Agilent E6474A Wireless Network Optimization Platform

Configuration Guide



The Agilent E6474A wireless network optimization platform is used to obtain RF coverage measurements and service performance measurements for wireless communications networks that use cdmaOne, cdma2000, GSM, UMTS, TDMA, iDEN and GPRS technologies. The system software runs on a PC that interfaces with an Agilent digital RF receiver and/or scanner. The system software also simultaneously interfaces with a cdmaOne, cdma2000, GSM, GPRS, GAIT, UMTS, TDMA and/or iDEN phone. The system can be configured to include receivers or scanners and/or phones from one or various technologies. The system can control up to four phones simultaneously (two phones for simultaneous trace/data measurements).

The Agilent network optimization drive test solution can be ordered through part numbers E6473A, E6473B, E6474A, E6450C, E6451C, E6452C, E6453C, E6454C, E6455C, E6456C, E6457C, E6478C, E7456C, E7462A through E7469A, 86154A, and 86156A. These part numbers are described in the following configuration guide.

The Agilent E6474A is available in the following configuration:

- **Phone-based systems**
- **Receiver/scanner-based systems**
- **Combination phone and receiver/scanner-based systems**

Single technology or multiple technology configurations can be made with any of the above combinations.

The purpose of this configuration guide is to assist you in ordering the correct system configuration for your application.

This document is divided into several parts:

Part 1: Basic description of product configuration

Part 2: Software options

Part 3: Receiver and scanner hardware options

Part 4: Accessories

Minimum PC specifications:

Processor / memory requirements:

Single phone

- Windows® 98, 2000 and ME
- Minimum: 330MHz PIII, 128MB RAM
- Recommended: 500MHz PIII, 256MB RAM

Multiple phone

- Windows® 98, 2000 and ME
- Minimum: 450MHz PIII, 128MB RAM
- Recommended: 600MHz PIII, 256MB RAM

Common requirements:

- RS-232 DB9 serial port
- Parallel port
- Two PCMCIA slots or a USB connection (for multiple phone operation)
- 90 MB disk space for software installation
- 200 MB disk space recommended for data
- CD-ROM drive recommended
- 1024 x 768 display resolution minimum

Part 5: Upgrading existing systems

Part 6: Ordering examples

Part 7: Support Options

Part 1: Basic description of product configuration

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

1. Select your technology
   E6474A-1x0 -- CDMA
   E6474A-1x1 -- cdma2000
   E6474A-2x0 -- GSM
   E6474A-4x0 -- iDEN
   E6474A-5x0 -- TDMA
   E6474A-6x0 -- GPRS
2. Choose your desired level of functionality
   E6474A-x0x -- Phone
   E6474A-x1x -- Receiver
   E6474A-x2x -- Combination system
3. Select data test functionality if needed
   E6474A -700 -- Client data measurement
   E6474A-710 -- Server data measurement software
4. Select any platform level software add-on needed
   E6474A-010 -- Multiple phones
   E6474A-020 and E6474A-030 -- Mapping options
5. Select desired scanner or receiver
   E746xA -- Scanners
   E645xC, E7456C -- Receivers
6. Select desired phone interface cable
   E6473B-8xx
7. Select desired Agilent high speed direct hub and hub kit
   E6473B-015 and kit E6473B-02x
8. Select desired GPS options
   E6473B-03x

Agilent Technologies

Each system requires an Agilent digital receiver or scanner, a mobile phone, or a combination of a receiver/scanner and phone. The system also requires a PC with Windows® 98, ME or 2000 running the measurement software. An optional GPS receiver and GPS antenna are required in order to log the position information and provide timing for certain receiver measurements.

IMPORTANT: At least one option must be ordered for the product configuration to be valid.

Figure 1 illustrates the process of choosing the specific options to order with your Agilent network optimization drive-test system.

Figure 1: E6474A software license option matrix

All software options are of the form E6474A-xxx, where xxx is assigned dependent on technology and license description from the table below.

	Technology							
License Description	**cdmaOne**	**cdma2000**	**GSM**	**GAIT**	**W-CDMA /UMTS**	**iDEN**	**TDMA**	**GPRS**
Phone measurements	100	101	200	250	300	400	500	600
Receiver/scanner measurements	110	111	210		310	410	510	
Receiver/scanner and phone measurements combination	120	121	220	270	320	420	520	620
TechTool phone measurements	130	131	230			430	530	

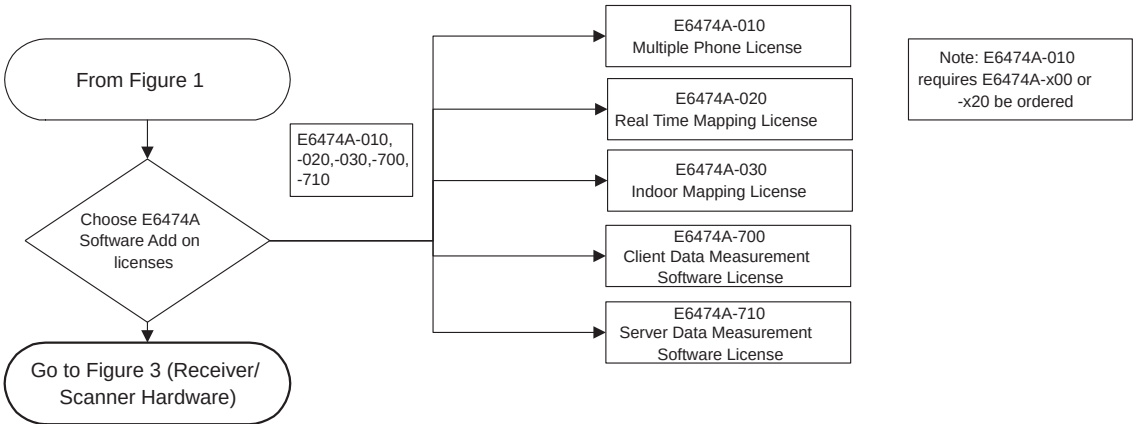
Note: A UMTS Rx software to Ph/Rx Combo software upgrade license is available through E6474A-315

Process:

- Decide which technology is required
- Decide what software measurement capability is required
- Select appropriate E6474A option xxx numbers from the above table

For further technology-independent software options, go to Figure 2.
For receiver/scanner hardware options, go to Figure 3.
For phone and interfacing hardware options, go to Figure 4.

Figure 2. Ordering decision process - software add on licenses for new systems



Part 2: Software options

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

The E6474A is the system model number used for software licenses for the wireless network optimization platform. The following software options are available on the Agilent E6474A:

Agilent E6474A

- **E6474A-010:** Multiple phone software license
- **E6474A-020:** Real time mapping software license
- **E6474A-030:** Indoor measurement capability software license
- **E6474A-070:** TechTool data logging and GPS
- **E6474A-071:** TechTool alarming capability
- **E6474A-072:** CDMA/cdma2000 TechTool CAI messaging
- **E6474A-073:** GSM TechTool L2/L3 messaging
- **E6474A-075:** iDEN TechTool L3/RALP messaging
- **E6474A-076:** TDMA TechTool L3 messaging
- **E6474A-090:** Platform software CD only
- **E6474A-100:** cdmaOne phone-based system software license
- **E6474A-101:** cdma2000 phone-based system software license
- **E6474A-110:** cdmaOne receiver/scanner-based system software license
- **E6474A-111:** cdma2000 receiver/scanner-based system software license
- **E6474A-120:** cdmaOne combination phone- and receiver/scanner-based software license
- **E6474A-121:** cdma2000 combination phone- and receiver/scanner-based software license
- **E6474A-126:** cdma2000 phone-based measurement software upgrade
- **E6474A-130:** cdmaOne TechTool measurement software license
- **E6474A-131:** cdma2000 TechTool measurement software license
- **E6474A-150:** CDMA Over-the-air base station testing
- **E6474A-151:** cdma2000 Over-the-air base station testing upgrade
- **E6474A-200:** GSM phone-based system software license
- **E6474A-210:** GSM scanner-based system software license
- **E6474A-220:** GSM combination phone- and scanner-based software license
- **E6474A-230:** GSM TechTool measurement software license
- **E6474A-250:** GAIT/GPRS phone-based system software license
- **E6474A-270:** GAIT/GPRS combination phone- and Rx/scanner-based software license
- **E6474A-300:** W-CDMA/UMTS phone-based system software license
- **E6474A-310:** W-CDMA/UMTS receiver-based system software license
- **E6474A-315:** W-CDMA/UMTS receiver to phone/Rx software upgrade license
- **E6474A-320:** W-CDMA/UMTS combination phone and receiver-based system software license
- **E6474A-400:** iDEN phone-based system software license
- **E6474A-410:** iDEN scanner-based system software license
- **E6474A-420:** iDEN combination phone- and scanner-based software license
- **E6474A-430:** iDEN TechTool Measurement SW License
- **E6474A-500:** TDMA phone-based system software license
- **E6474A-510** TDMA receiver/scanner-based system software license
- **E6474A-520:** TDMA combination phone and receiver/scanner-based software license
- **E6474A-530:** TDMA TechTool Measurement SW License
- **E6474A-600:** GPRS phone-based system software license
- **E6474A-620:** GPRS combination phone- and GSM receiver/scanner-based software license
- **E6474A-700:** Data Measurement Software License
- **E6474A-710:** Data Measurement Server Software License

Note: E6474A-710 is a "server" application and requires to be run on a separate PC platform from the optimization software. Refer to the Wireless Data Measurements data sheet for further details (literature number 5988-1507EN).

Use Table 1 to determine which software option(s) are required for your application.

Table 1. Software functionality

Desired functionality	Required software option(s)
cdmaOne configurations	
cdmaOne phone-based drive system measurements (single phone)	E6474A-100
cdmaOne phone-based drive system measurements (up to four phones)	E6474A-100 and E6474A-010
cdmaOne receiver/scanner-based drive system measurements (up to one scanner)	E6474A-110
cdmaOne phone-based drive system measurements (single phone) and cdmaOne receiver/scanner-based drive system measurements (up to one scanner)	E6474A-120
cdmaOne phone-based drive system measurements (up to four phones) and cdmaOne receiver/scanner-based drive system measurements (up to four receivers and one scanner)	E6474A-120 and E6474A-010
cdmaOne TechTool measurement software: Phone-based drive system measurements (single phone) without the ability to log data, set alarms, or view layer 3 messages (basic system monitoring tool)	E6474A-130
CDMA/cdma2000 over-the-air base station test measurements (enables receiver code domain power and base station spectrum analyzer functionality). Refer to the CDMA Over-Air Maintenance Tool Configuration Guide for more information.	E6474A-150
cdma2000 configurations (includes CDMA)	
cdma2000 phone-based drive system measurements with RLP data (single phone)	E6474A-101
cdma2000 phone-based drive system measurements with data (up to four phones)	E6474A-101 and E6474A-010
cdma2000 receiver/scanner-based drive system measurements (up to four receivers, or one scanner)	E6474A-111
cdma2000 phone-based drive system measurements with data (single phone) and cdma2000 receiver/scanner-based drive system measurements (up to four receivers, or one scanner)	E6474A-121
cdma2000 phone-based drive system measurements with data (up to four phones) and cdma2000 receiver/scanner-based drive system measurements (up to four receivers, or one scanner)	E6474A-121 and E6474A-010
cdma2000 phone based drive system measurement with RLP data (single phone) – Upgrade from CDMA	E6474A-126
cdma2000 TechTool measurement software: Phone-based drive system measurements (single phone) without the ability to log data, set alarms, or view layer 3 messages (basic system monitoring tool)	E6474A-131
CDMA/cdma2000 over-the-air base station test measurements (enables receiver Code Domain Power and Base Station Spectrum Analyzer functionality) Refer to the CDMA Over-Air Maintenance Tool Configuration Guide for more information.	E6474A-150
cdma2000 over-the-air basestation testing upgrade – Provides upgrade to enable receiver cdma2000 Code Domain power and Base Station Spectrum Analyzer functionality for customers upgrading from an E74xx drive test solution. Refer to the CDMA Over-Air Maintenance Tool Configuration Guide for more information.	E6474A-151
cdma2000 phone-based drive system measurements and cdma2000 receiver-based drive system measurements (up to four receivers) and wireless data measurements (Agilent Client: Server)	E6474A-121, -700 and -710
GSM configurations	
GSM phone-based drive system measurements (single phone)	E6474A-200
GSM phone-based drive system measurements (up to four phones)	E6474A-200 and E6474A-010
GSM scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-210
GSM phone-based drive system measurements (single phone) and GSM scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-220
GSM phone-based drive system measurements (up to four phones) and GSM scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-220 and E6474A-010
GAIT/GPRS configuration	
GAIT/GPRS phone-based drive system measurements (single phone)	E6474A-250
GAIT/GPRS phone-based drive system measurements (up to four phones)	E6474A-250 and E6474A-010
GAIT/GPRS phone-based drive system measurements (single phone) and GSM850 Rx/scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-270

Table 1. Software functionality (continued)

W-CDMA (UMTS) configurations

W-CDMA (UMTS) phone-based drive system measurements (single phone)	E6474A-300
W-CDMA (UMTS) receiver-based drive system measurements (up to four receivers)	E6474A-310
W-CDMA (UMTS) receiver to Ph/Rx combination upgrade software (up to four receivers)	E6474A-315
W-CDMA (UMTS) phone-based drive system measurements (single phone) and UMTS receiver-based drive system measurements (up to four receivers)	E6474A-320
W-CDMA (UMTS) phone-based drive system measurements and W-CDMA (UMTS) receiver-based drive system measurements (up to four receivers) and wireless data measurements (Agilent Client: Server)	E6474A-320, -700 and -710

iDEN configurations

iDEN phone-based drive system measurements (single phone)	E6474A-400
iDEN phone-based drive system measurements (up to four phones)	E6474A-400 and E6474A-010
iDEN receiver/scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-410
iDEN receiver/scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-420
iDEN receiver/scanner-based drive system measurements (up to four receivers or one scanner)	E6474A-420 and E6474A-010
iDEN TechTool measurement software: Phone-based drive system measurements (single phone) without the ability to log data, set alarms, or view layer 3 messages (basic system monitoring tool)	E6474A-430

TDMA configurations

TDMA phone-based drive system measurements (single phone)	E6474A-500
TDMA phone-based drive system measurements (up to four phones)	E6474A-500 and E6474A-010
TDMA receiver/scanner-based drive system measurements (up to four receivers, or one scanner)	E6474A-510
TDMA phone-based drive system measurements (single phone) and TDMA receiver/scanner-based drive system measurements (up to four receivers, or one single or dual-band scanner)	E6474A-520
TDMA phone-based drive system measurements (up to four phones) and TDMA receiver/scanner-based drive system measurements (up to four receivers, or one single or dual-band scanner)	E6474A-520 and E6474A-010
TDMA TechTool measurement software: Phone-based drive system measurements (single phone) without the ability to log data, set alarms, or view layer 3 messages (basic system monitoring tool)	E6474A-530

GPRS configurations

GPRS phone-based drive system measurements (single phone) and real time mapping	E6474A-600 and E6474A-020
GPRS phone-based drive system measurements (single phone) and wireless data measurements (Agilent Client: Server)	E6474A-600, E6474A-700 and E6474A-710
GPRS phone-based drive system measurements (single phone) and commercial server data measurements	E6474A-600 and E6474A-700
GPRS phone-based drive system measurements (up to four phones)	E6474A-600 and E6474A-010
GPRS phone-based drive system measurements (single phone) and GSM scanner-based drive system measurements (up to four receivers or one scanner).	E6474A-620
GPRS phone-based drive system measurements (up to four phones) and GSM scanner-based drive system measurements (up to four receivers or one scanner) and real time mapping and wireless data measurements (Agilent Client: Server)	E6474A-620,-010, -020, -700 and -710

Multi-technology example configurations

GSM phone-based drive system measurements (up to four phones) and GSM receiver/scanner-based drive system measurements and UMTS receiver-based drive system measurements (up to four receivers or one scanner)	E6474A-220, 310 and 010
cdmaOne phone-based drive system measurements and GSM phone-based drive system measurements (up to four phones system total) and cdmaOne receiver/scanner-based drive system measurements and GSM receiver/scanner-based drive system measurements (up to one scanner or four receivers total)	E6474A-120 and E6474A-220 and E6474A-010

Additional add-on licensing

Multiple phone license (can be combined any phone license software functionality)	E6474A-010 (one (1) order of E6474A-010 covers all multi-phone, multi-technology needs per system)

Indoor measurement capability (can be combined with all other software functionality)	E6474A-030 (can be combined with any or all soft-ware option numbers)
Data logging and GPS for TechTool	E6474A-070 (can be combined with any TechTool option)
Alarming capability for TechTool	E6474A-071 (can be combined with any TechTool option)
CDMA/cdma2000 CAI messaging capability for TechTool	E6474A-072 (may only be used with TechTool options E6474A-130 and -131)
GSM L2/L3 messaging capability for TechTool	E6474A-073 (may only be used with TechTool option E6474A-230)
iDEN L3/RALP messaging capability for TechTool	E6474A-075 (may only be used with TechTool option E6474A-430)
TDMA L3 messaging capability for TechTool	E6474A-076 (may only be used with TechTool option E6474A-530)

Table 1. Software functionality

Use Table 2 to determine which options can or can not be combined when configuring E6474A system. E6474A-020 and E6474A-030 can be combined with any other option set.
E6474A-070 should not be ordered stand-alone. E6474A-070 should only be ordered with options E6474A-130, -131, -230, -430, or -530. E6474A-070 should not be ordered with any option other than the aforementioned options.
E6474A-071 should not be ordered stand-alone. E6474A-071 should only be ordered with options E6474A-130, -131, -230, -430, or -530. E6474A-071 should not be ordered with any option other than the aforementioned options.
E6474A-072, -073, -075, and -076 should only be ordered with their respective technology counterparts. Order option E6474A-072 with -130 or -131 only. Order option E6474A-073 with -230 with -230 only. Order option E6474A-075 with -430 only. Order option E6474A-076 with -530 only.
E6474A-120 should not be ordered along with E6474A-100 or -110. E6474A-120 has all of the functionality of E6474A-100 and -110 combined.
E6474A-121 should not be ordered along with E6474A-101 or -111. Option 121 has all of the functionality of Options 101 and Option 111 combined.
E6474A-220 should not be ordered along with E6474A-200 or -210. E6474A-220 has all of the functionality of E6474A-200 and -210 combined.
E6474A-270 should not be ordered along with E6474A-250. E6474A-270 has all of the functionality of E6474A-250.
E6474A-320 should not be ordered along with E6474A-300 or -310. E6474A-320 has all of the functionality of E6474A-300 and -310 combined.
E6474A-420 should not be ordered along with E6474A-400 or -410. E6474A-420 has all of the functionality of E6474A-400 and -410 combined.
E6474A-520 should not be ordered along with E6474A-500 or -510. E6474A-520 has all of the functionality of E6474A-500 and -510 combined.
E6474A-620 should not be ordered along with E6474A-600, as -620 has all of the functionality of -600.
E6474A-010 should only be ordered along with E6474A-100, -120, -101, -121,-200, -220, -400, -420, -500, -520, -600, or -620 or by a customer who already has E6474A-100, -120, -101, -121, -200, -220, -400, -420, -500, -520, -600, or -620.
E6474A-130, -131, -430, and -530 should not be ordered with E6474A-100, -101, -400, or -500. E6474A-130, -131, -430, and -530 offer limited functionality based on E6474A-100, -101, -400, and -500.
E6474-700 Data Measurement option can be used on it's own to provide some basic measurements on FTP and http transactions for a single mobile but should be ordered with E6474A-710 (server option) to give comprehensive TCP/UDP and delay measurements on transmit and receive paths. Multiple E6474A-700's may be served by a single E474A-710, limited by network bandwidth.

Table 2. Option exceptions

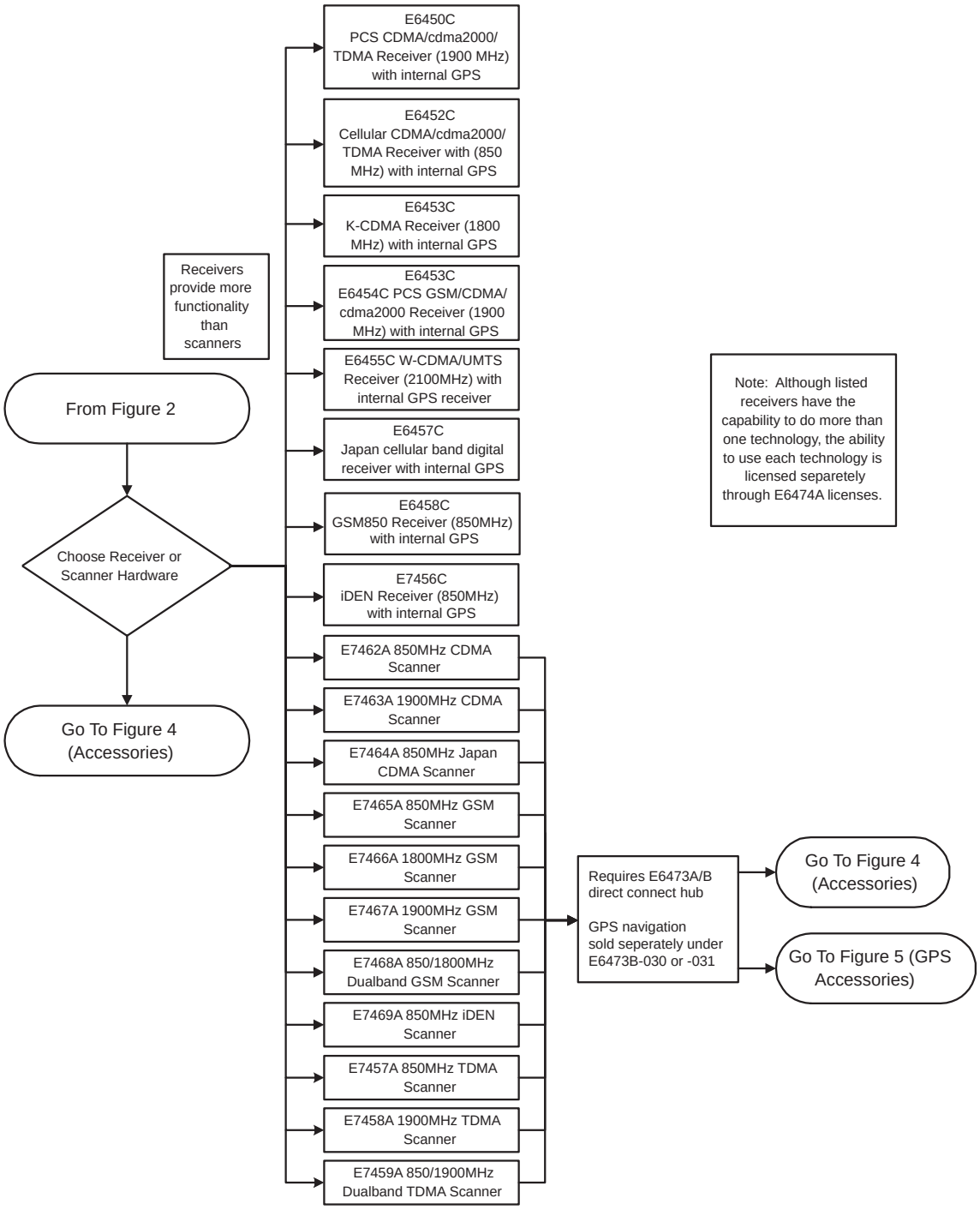
Each software order includes the following components:

- CD with software and documentation
- Getting Started Guide
- Parallel port software license key (includes licenses on this key)
- USB license key (initialized but no licenses on this key)

Software orders for phone or combo licenses (E6474A-100, -101, -120, -121, -200, -220, -400, -420, -500, -520, -600 and -620) and multiple phone license E6474A-010 come with the following additional components:

- PCMCIA dual socket I/O card

Figure 3. Ordering decision process - receiver/scanner hardware for new systems



Part 3: Receiver/scanner hardware options

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

The following digital receiver hardware options are available on for use with the E6474A:

Digital Receivers

❏ E6450C : CDMA/TDMA PCS band digital receiver with internal GPS
❏ E6451C : GSM 900MHz band receiver with internal GPS
❏ E6452C : CDMA/TDMA Cellular band digital receiver with internal GPS
❏ E6453C : Korea PCS band digital receiver with internal GPS
❏ E6454C : CDMA/GSM PCS band receiver at 1.9 GHz with internal GPS
❏ E6455C : UMTS (W-CDMA)/cdma2000 IMT2000 band receiver at 2.1GHz (with internal GPS)
❏ E6456C : UMTS(W-CDMA)/cdma2000 IMT2000 band receiver at 1.9GHz with internal GPS
❏ E6457C : Japan cellular band digital receiver with internal GPS
❏ E6458C : GSM 850 receiver at 850MHz with internal GPS
❏ E7456C : iDEN receiver at 850MHz with internal GPS

Agilent receivers require related receiver/scanner measurement software as described in Part 2: Software options.

If you require dead reckoning with your GPS, you need to use an external GPS. Agilent RF receivers with internal GPS cannot be used with an external GPS. Agilent offers an external GPS with dead reckoning capability. The exception to this are the E64xxC receivers which includes an internal GPS receiver but can still use an external GPS unit if desired.

You need to select the receiver that covers the frequency band in which you want to make measurements. If you need to make measurements in more than one band, you need to order two measurement receivers.

If you are using multiple receivers in your system, only one GPS receiver is used for timing and location. Other GPS receivers are ignored. For example, if two receivers with internal GPS are connected, only one GPS from one of the receivers is used for data logging and recording.

Each receiver includes the following components:

- Magnetic-mount RF antenna for the corresponding frequency band
- TNC-N 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
- Receiver to direct connect hub interface cable
- Direct connect hub to second receiver power cable
- Receiver mounting plate
- Receiver mounting strap
- Appropriate frequency antenna (to be used with portable direct connect hub configuration
- Antenna cable adapter, N-male to sma-f

Scanners

E7457A: TDMA scanner at 850 MHz

E7458A: TDMA scanner at 1900 MHz

E7459A: TDMA scanner at 850/1900 MHz

E7462A: CDMA scanner at 850 MHz

E7463A: CDMA scanner at 1900 MHz

E7464A: Japan CDMA scanner at 850 MHz

E7465A: GSM scanner at 850 MHz

E7466A: GSM scanner at 1800 MHz

E7467A: GSM scanner at 1900 MHz

E7468A: GSM dual-band scanner at 850/1800 MHz

E7469A: iDEN scanner

Each listed scanner comes with the following components:

- Scanner housing for DTI scanner
- Magnetic-mount RF antenna for the corresponding frequency band
- Freestanding antenna (more than one antenna if dual-band scanner)
- Necessary connectors, adapters, and cabling (including cable from scanner to USB hub)

The CDMA scanners (E7462A, E7463A, E7464A) also include the following components:

- GPS magnetic mount antenna
- GPS antenna

Any listed scanner must have certain E6474A software options to operate the receiver:

- Scanners E7462A, E7463A, E7464A will work with E6474A-110 or -120.
- Scanners E7465A, E7466A, E7467A, and E7468A will work with E6474A-210 or -220.
- Scanner E7469A requires either software E6474A-410 or -420.

One software package can control up to one scanner (single or dual-band scanner).

GPS is required for data logging and positioning. When selecting a measurement scanner, you may need to also order external GPS units since scanners do not have internal GPS as an option. The CDMA scanners E7462A, E7463A, E7464A include an internal GPS receiver that is used for CDMA timing purposes only. An external GPS unit for data logging and positioning is still required. Agilent offers GPS units for use with scanners.

NOTE: Each scanner requires a direct connect hub to provide connections and power to the scanner. Please refer to *Part 4: Accessories* for the required direct connect hub.

You need to select the scanner that covers the frequency band in which you want to make measurements.

Only one scanner can be used with the system. Multiple scanners are not supported.

Figure 4. Ordering decision process - accessories for new systems

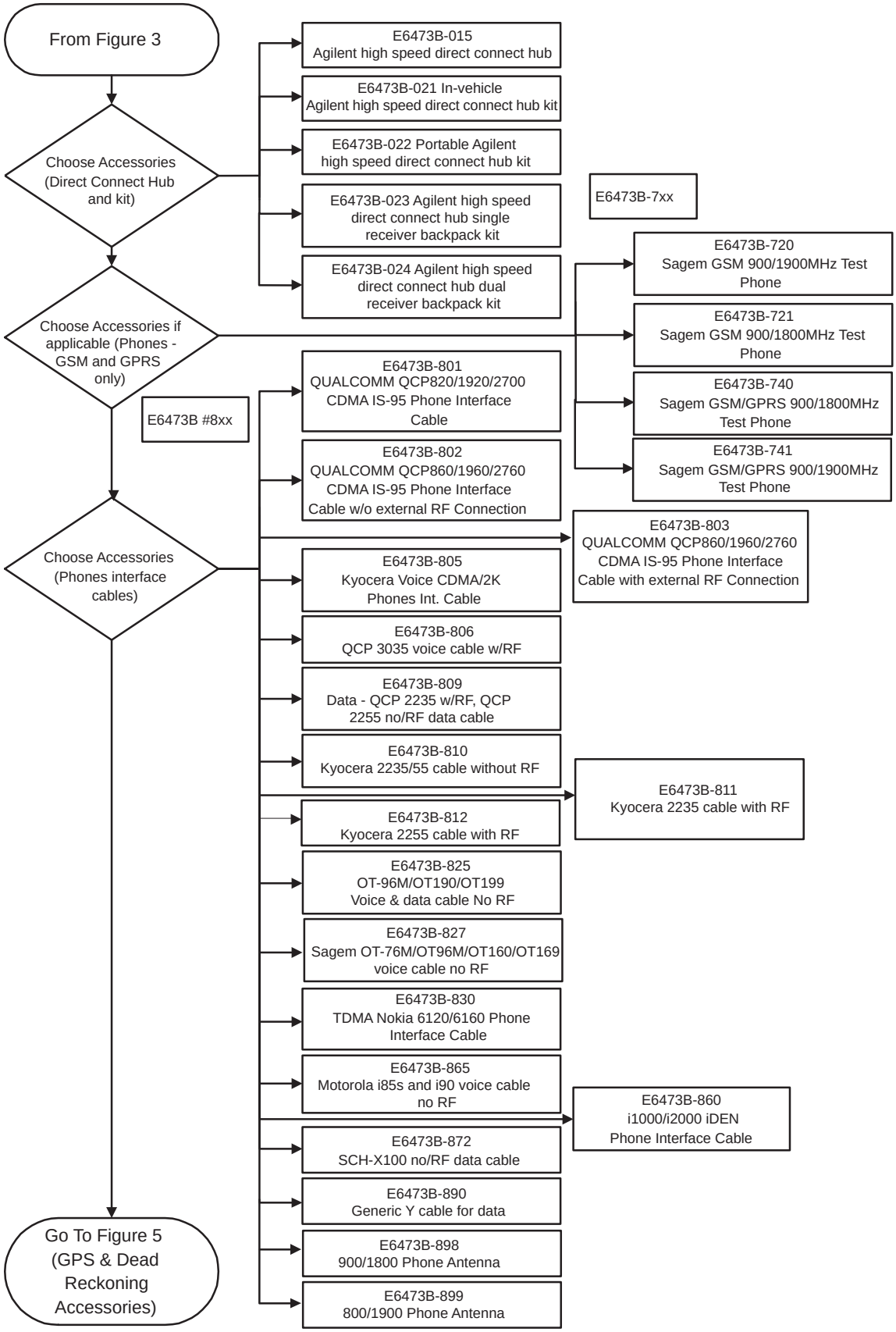


Figure 5. Ordering decision process - GPS and dead reckoning accessories for new systems

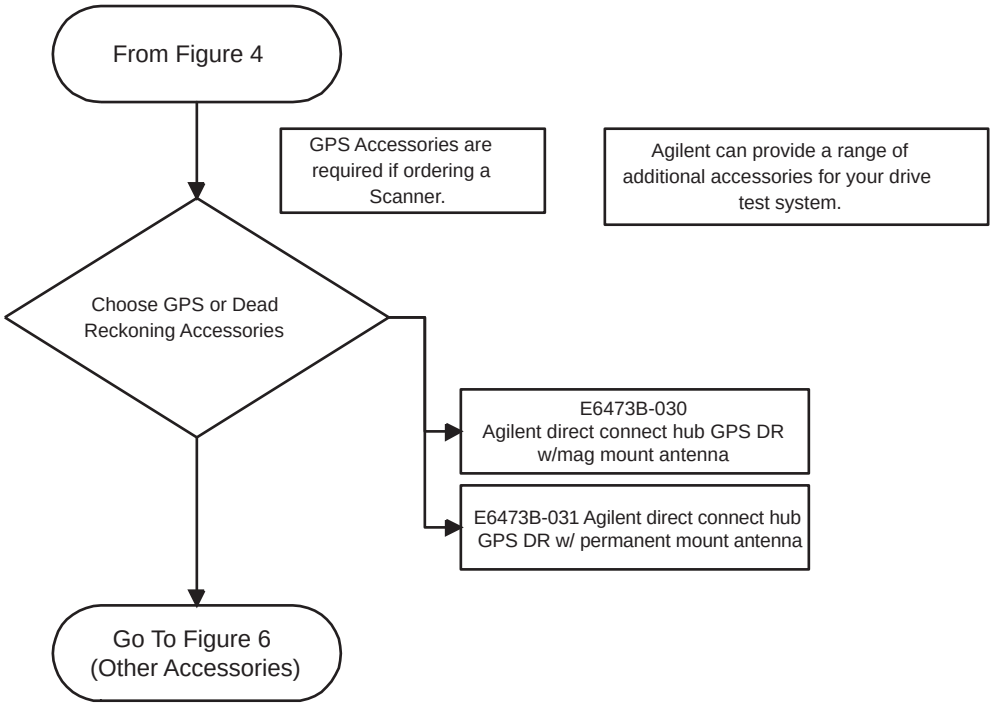
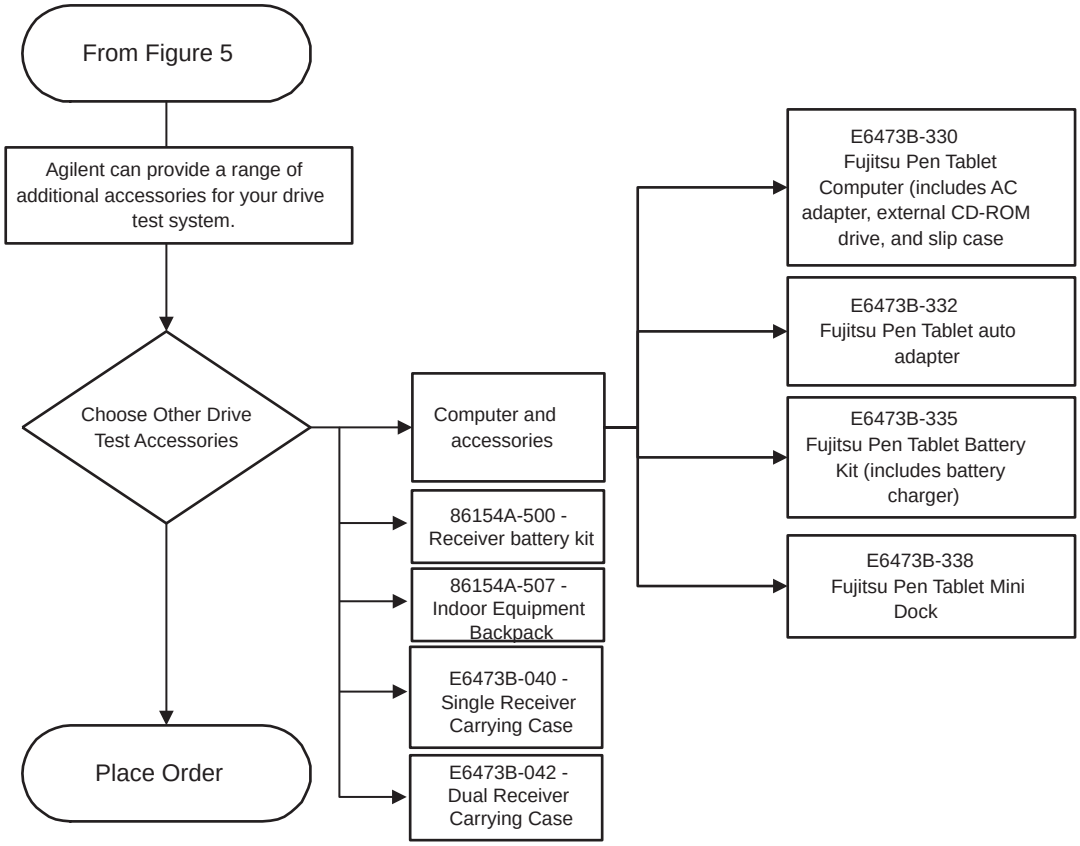


Figure 6. Ordering decision process - additional drive test accessories



Part 4: Accessories

In addition to the E6474A software licenses and either receiver or scanner hardware, Agilent supplies a range of accessory products to supplement and enhance your system.

The accessories can be divided up into the following categories:

- Drive-test system accessories
- Drive-test system replacement accessories
- Indoor (portable) measurement system accessories
- Phone and phone interface cable system accessories
- Required accessories for use with scanner hardware

Part 4.1 Drive test system accessories

The following accessories are provided for drive testing (in-vehicle measurements). The drive test accessories are ordered using the Agilent 86154A and/or E6473B accessory product numbers.

E6473B-030 - Direct connect hub GPS DR w/ magnetic mount antenna. This is an external GPS device with dead reckoning that can connect to either the Agilent direct connect hub or directly to the laptop via serial port. This option includes a magnetic mount GPS antenna.

E6473B-031 - Direct connect hub GPS DR w/ permanent mount antenna. This option is the same as E6473B-030 but with a permanent mount GPS antenna.

E6473B-015 – Agilent high speed direct connect hub. The Agilent high speed direct connect hub allows the simultaneous connection of up to two phones (doing both trace and data) and two receivers (or two phones and one scanner) to the laptop PC. In addition, the high speed direct connect hub provides powering capabilities for the phone(s) and/or receiver(s)/scanner. Please note that a E6473B option 02x must be purchased with every E6473B-015 ordered.

E6473B-021 – In-vehicle Agilent high speed direct connect hub kit. The in-vehicle hub kit provides the accessories to allow for an in-vehicle configuration of the E6473B-015 Agilent high speed direct connect hub. This option as well as all E6473B-02x do not provide the Agilent high speed direct connect hub itself.

For portable applications, it is recommended that the E6473B-022 portable hub kit, E6473B-023 single receiver hub backpack kit, or E6473B-024 dual receiver hub backpack kit is used. These kits are designed specifically for indoor and portable wireless measurements. The E6473B-022, - 023, and -024 include a battery, battery charger, appropriate carrying case/backpack, and cabling.

Part 4.2: Drive test replacement accessories

The following list of replacement accessories are included with either the E6474A software or the receivers or scanners that are used with the E6474A. In most cases, these options are only ordered to replace lost or damaged accessories.

86154A-099: Multiple receiver interconnect kit

86154A-410: PCS band magnetic-mount RF antenna

86154A-430: Cellular band magnetic-mount RF antenna

86154A-020: PCMCIA card - dual serial

Phones and phone interface cables: Refer to Part 4.4: Phone and phone interface cable system accessories.

Part 4.3: Indoor (portable) measurement accessories

The following accessories are provided for indoor and portable wireless measurements:

E6473B-330 Fujitsu 3500 pen tablet computer (include AC adapter, external CD-ROM drive, and slip case)

E6473B-332 Fujitsu pen tablet auto adapter

E6473B-335 Fujitsu pen tablet external battery kit. Includes charger.

E6473B-338 Fujitsu pen tablet mini dock

Note for pen tablet users: The Fujitsu 2300 pen tablet does not meet the minimum system requirements for E6474A. Users of previous Agilent drive test systems will need to replace Fujitsu 2300 pen tablets with the newer Fujitsu 3500 pen tablets.

E6473B-022 – Portable Agilent high speed direct connect hub kit. The portable Agilent high speed direct connect hub kit is designed for portable use. It includes a battery, a battery charger, a carrying case for the hub, and a USB cable. Again, this kit does not include the actual Agilent high speed direct connect hub (E6473B-010).

E6473B-023 – Agilent high speed direct connect hub single receiver backpack kit. The single receiver backpack kit is used for configurations where one digital receiver or scanner is used to perform wireless measurements. It includes a battery, a battery charger, USB cable, and a backpack which holds the hub and receiver. Again, this kit does not include the actual Agilent high speed direct connect hub (E6473B-010).

E6473B-024 – Agilent high speed direct connect hub dual receiver backpack kit. The dual receiver backpack kit is used for configurations where two digital receivers are used to perform wireless measurements. It includes a battery, a battery charger, USB cable, and a backpack which holds the hub and two receivers. Again, this kit does not include the actual Agilent high speed direct connect hub (E6473B-010).

86154A-500 – Receiver battery kit

86154A-507 – Indoor Equipment Backpack, designed for Indoor applications. Can hold two receivers for dual-band applications.

E6473B-040 – Single Receiver Carrying Case

E6473B-042 – Dual Receiver Carrying Case

Phones and phone interface cables

Refer to *Part 4.4: Phone and phone interface cable system accessories* listed later in the accessories section.

Part 4.4: Phone and phone interface cable system accessories

The following accessories describe the phone and phone interface cables for indoor measurements that are available as drive-test system and replacement accessories. For a detailed description of these accessories, refer to the *Agilent Indoor Wireless Measurement System, Product Overview (publication number 5968-8689E)*.

E6473B-720: Sagem GSM 900/1900 Test Mobile Phone

E6473B-721: Sagem GSM/DCS dualband Test Mobile Phone

E6473B-740: Sagem GPRS GSM/DCS Test Mobile Phone

E6473B-741: Sagem GPRS 900/1900 Test Mobile Phone

E6473B-801: QCP 820/1920/2700 phone interface cable
(**NOTE:** Agilent cannot supply the phones associated with this cable as they have been made obsolete by the manufacturer.)

E6473B-802: QCP 860/1960/2760 phone interface cable without external RF connection
(**NOTE:** Agilent cannot supply the phones associated with this cable as they have been made obsolete by the manufacturer.)

E6473B-803: QCP 860/1960/2760 phone interface cable with external RF connection
(**NOTE:** Agilent cannot supply the phones associated with this cable as they have been made obsolete by the manufacturer.)

E6473B-804: QCP 2035 phone interface cable

E6473B-805: Kyocera voice interface cable for the following phones: QCP 2035, 2135, 2235, 2255, 5472, and 3035.

E6473B-806: QCP 3035 voice cable with RF

E6473B-810: Kyocera 2235/55 cable without RF

E6473B-811: Kyocera 2235 cable with RF

E6473B-812: Kyocera 2255 cable with RF

E6473B-890: Generic Y cable for data

E6473A-825: Sagem OT96MGPRS/OT190/OT199 data and trace phone interface cable without external RF connection

E6473A-827: Sagem OT76M/OT160/OT169 phone interface cable without external RF connection (Note: This cable can also be used with OT96MGPRS phone for voice/trace calls [not data].)

E6473B-830: Nokia 6120/6160 phone interface cable

E6473B-840: Sanyo 4500 phone interface cable

E6473B-860: iDEN i1000/i2000 plus phone interface cable

E6473B-861: iDEN i1000 plus interface cable with RF

E6473B-865: Motorola i85s and i90 voice cable no RF

E6473B-870: Samsung SCH-X100 phone interface cable

E6473B-871: Samsung SCH-X120/SPH-X1200 phone interface cable

E6473B-872: SCH-X100 no RF data cable

The above options include:

- Audio headset
- DB9 converter
- 15 foot extension cable

E6473B-801 and -860 also include an RF breakout kit
E6473B-803 and -821 also include a phone interface antenna kit.

E6473B-898: 900/1800 MHz phone antenna cable kit
The phone antenna cable kit is designed to be purchased in conjunction with cables that include an external RF connection.

E6473B-899: 800/1900 MHz phone antenna cable kit
The phone antenna cable kit is designed to be purchased in conjunction with cables that include an external RF connection.

Part 4.5: Required accessories used with scanners

When scanners are purchased, certain accessories that have been listed above must be ordered so the scanner can function properly. The direct connect hub is required to house the scanner and to provide power to the scanner. The required accessories are listed below:

Direct connect hub: E6473B-015 and -02x
GPS receiver: E6473B-030 or -031

Part 5: Upgrading existing systems

The Agilent E6474A is a scalable system. You can start with one set of capability and integrate additional capability later. An example includes:

- Start with a phone-based system and upgrade to include receiver-based measurements.
- Start with a receiver-based system and upgrade to include phone-based measurements.
- Start with a single phone system and upgrade to include multiple phone capability.
- Start with a phone, receiver or combo system for one technology and upgrade to include a phone, receiver, or combination of phone and receiver from one or more different technologies.
- Start with an outdoor drive-test system and upgrade to include indoor measurement capability.

Part 5.1: "C" receiver upgrades
Agilent E6450B or E6451A-E6454A receiver hardware can be upgraded to the Agilent E64xxC version receiver hardware. The "C" receiver provides faster measurement capability and enhanced performance. The hardware upgrade is available with the following option:

86150C
"C" version receiver hardware upgrade

Over-air maintenance test products, which use the Agilent receivers E6450B, E6453A, E6452A, E6452A #H02, and E6454A, can be upgraded to "C" receivers and cdma2000 software which will provide cdma2000 code domain power measurements using the following option:

86157A
Over-air maintenance tool cdma2000 upgrade (This option includes the 86150C hardware upgrade and the E6474A-151 software upgrade.)

Part 5.2: Walkabout upgrades
There is the opportunity to upgrade from a WALKABOUT Drive-Test System to the new E6474A which allows connection to the E6473A USB hub. This upgrade is available for the following technologies:

E6473A-090: cdmaOne WALKABOUT - upgrade from controller based CDMA WALKABOUT to direct connect

E6473A-091: GSM WALKABOUT - upgrade from controller based GSM WALKABOUT to direct connect

E6473A-093: TDMA WALKABOUT - upgrade from controller based TDMA WALKABOUT to direct connect

E6473A-094: iDEN WALKABOUT - upgrade from controller based iDEN WALKABOUT to direct connect

Each Option above includes:

- Scanner housing
- Scanner interconnect cable
- E6473A-020 indoor USB hub
- Dongle with combo phone and scanner license for that specific technology
- Conversion instructions
- Box to return integrated controller back to the factory

Note for Walkabout upgrades: Older scanners may need to have firmware upgrades. The firmware upgrade carries a minimal cost. Please contact the factory to determine if the firmware upgrade is required. If necessary, the scanner firmware upgrade option is:

E6473A-K02
Firmware upgrade for WALKABOUT conversion

Additional functionality in upgrade from WALKABOUT to E6474A includes:

- Ability to use new phones as they become integrated into the E6474A. New phones will not be supported in WALKABOUT.
- Ability to directly connect a phone to the PC with the E6474A. WALKABOUT used separate hardware controllers.
- Ability to move to a more functional platform over WALKABOUT. Eventually the E6474A will include real time display of data, linking between phone measurements and receiver measurements and receiver hardware with additional functionality instead of scanner hardware.
- Ability to move to a scalable platform where up to four phones and four receivers can be added. New technologies can be added to the existing platform, and new functionality can be added such as data test measurements. WALKABOUT only allowed one phone and one scanner.

Part 5.3: Upgrading and expanding E6474A systems
The system is made up of software, receiver hardware, and accessories. Upgrading a system is similar to building a new system. You simply order those system elements that you do not currently have. 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 need to add.
4. Choose the hardware options that you need to add.
5. Choose the accessories that you need to add (Agilent 86154A, 86156A, or E6473B accessories).

Upgrade from E74xxA platform with the following upgrade option which provides a CD containing the E6474A software application.

E6474A-090: E74xx software upgrade to E6474A

Part 6: Ordering examples

Part 6.1: CDMA ordering examples

Table 3 lists several typical E6474A system configurations for cdmaOne 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	You need to order: Description: Quantity:
cdmaOne phone-based measurement system (single phone). Desire real time mapping. Cable with external RF connection for QCP2760 phone. You will provide your own GPS and laptop. Phones must be supplied by customer.	**E6474A:** Wireless network optimization platform E6474A-100: cdmaOne phone measurement software license . . . . . 1 E6474A-020: Real time mapping software license . . . . . 1 **E6473B:** Accessories E6473B-803: QCP 860/1960/2760 phone interface cable with external RF connection 1 E6473B-899: Phone antenna cable kit 1
cdmaOne phone-based measurement system (up to four phones). Desired real time mapping. Four cables for QCP 2700 phones with power up (desired in-vehicle use). You want GPS. You will provide your own PC.	**E6474A:** Wireless network optimization platform E6474A-100: cdmaOne phone measurement software license . . . . . 1 E6474A-010: Multiple phone software license . . . . . 1 E6474A-020: Real time mapping software license . . . . . 1 **E6473B**: Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit . . . . . 2 E6473B-801: QCP 820/1920/2700 phone interface cable . . . . . 4 **86156A:** Drive test accessories 86156A-220: External GPS with dead reckoning 1
cdmaOne receiver-based measurement system for the cellular band. You will provide your own GPS and laptop.	**E6474A:** Wireless network optimization platform E6474A-110: cdmaOne receiver/scanner measurement software license . . . . . 1 **E6452C:** CDMA/TDMA cellular band receiver at 850MHz with internal GPS 1
cdmaOne receiver-based measurement system for the cellular band with internal GPS. You will provide your own laptop.	**E6474A:** Wireless network optimization platform E6474A-110: cdmaOne receiver/scanner measurement software license . . . . . 1 **E6452C:** CDMA/TDMA cellular band receiver at 850MHz 1
cdmaOne receiver-based measurement system for the cellular band. Dead reckoning. You will provide your own laptop.	**E6474A:** Wireless network optimization platform E6474A-110: cdmaOne receiver/scanner measurement software license . . . . . 1 **E6452C:** CDMA/TDMA cellular band receiver at 850MHz . . . . . 1 **86156A:** Drive test accessories 86156A-220: External GPS with dead reckoning 1
cdmaOne combination phone- and receiver-based measurement system for the PCS band with internal GPS. (single phone). Real time mapping desired. Cable for the QCP2700 with power (in-vehicle use intended).	**E6474A:** Wireless network optimization platform E6474A-120: Combined cdmaOne phone-and receiver/scanner-based measurement software license . . . . . 1 E6474A-020: Real time mapping software license . . . . . 1 **E6450C:** CDMA/TDMA cellular band receiver at 1900MHz **E6473B:** Drive system accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit . . . . . 1 E6473B-801: QCP 820/1920/2700 phone interface cable 1
cdmaOne combination phone- and receiver-based measurement system for the PCS band. Need two receivers and multi-phone option. One receiver with internal GPS. Real time mapping desired. Two cables for QCP 2760 with external RF connection and power up. (In-vehicle use intended). You provide your own PC.	**E6474A:** Wireless network optimization platform E6474A-120: Combined cdmaOne phone- and receiver/scanner-based measurement software license . . . . . 1 E6474A-010: Multiple phone software license . . . . . 1 E6474A-020: Real time mapping software license . . . . . 1 **E6450C:** CDMA/TDMA cellular band receiver at 1900MHz **E6473B:** Drive test accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit . . . . . 1 E6473B-803: QCP 860/1960/2760 phone interface cable with external RF connection . . . . . 2 E6473B-899: Phone antenna cable kit 2

Part 6.2: cdma2000 ordering examples

Table 4 lists several typical E6474A system configurations for cdma2000 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.

Table 4. Typical ordering configurations: cdma2000

Desired system capability	You need to order: Description: Quantity:
cdma2000 receiver-based measurement system for the cellular band. You will provide your own GPS and laptop.	**E6474A:** Wireless network optimization platform E6474A-110: cdma2000 receiver/scanner measurement software license . . . . . 1 **E6452A:** CDMA/TDMA cellular band receiver at 850MHz 1
cdma2000 receiver-based measurement system for the cellular band. Dead reckoning. You will provide your own laptop.	**E6474A:** Wireless network optimization platform E6474A-111: cdma2000 receiver/scanner measurement software license . . . . . 1 **E6452A:** CDMA/TDMA cellular band receiver at 850MHz . . . . . 1 **86156A:** Drive test accessories 86156A-220: External GPS with dead reckoning 1

Part 6.3: GSM ordering examples

Table 5 lists several typical E6474A system configurations for GSM 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.

Table 5. Typical ordering configurations: GSM

Desired system capability	You need to order: Description: Quantity:
GSM phone-based measurement system (single phone). Desire real time mapping. Sagem phone interface cable with external RF. You will provide your own GPS and laptop and phones.	**E6474A:** Wireless network optimization platform E6474A-200: GSM phone measurement software license ..... 1 E6474A-020: Real time mapping software license ..... 1 **E6473B:** Accessories E6473B-821: Sagem OT55P/G/D, OT75M, OT95 phone interface cable with external RF connection ..... 1 E6473B-899: Phone antenna cable kit 1
GSM phone-based measurement system (up to four phones). Desired real time mapping. Cables for four OT169 phones at 1900MHz with power up (desired in-vehicle use). You want GPS included with the system. You will provide your own laptop and test phones.	**E6474A:** Wireless network optimization platform E6474A-200: GSM phone measurement software license ..... 1 E6474A-010: Multiple phone software license ..... 1 E6474A-020: Real time mapping software license ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit ..... 2 E6473B-827: Sagem OT76M/OT96M/OT160/OT169 phone interface voice cable ..... 4 **86156A:** Drive test accessories 86156A-220: GPS with dead reckoning 1
GSM scanner-based measurement system for the 850 MHz and 1800 MHz band GPS required. Dead reckoning desired. You will provide your own laptop (in-vehicle use of system).	**E6474A:** Wireless network optimization platform E6474A-210: GSM scanner measurement software license ..... 1 **E7468A:** GSM dual-band scanner at 850/1800 MHz ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit ..... 1 **86156A:** Drive-test system accessories 86156A-220: External GPS with dead reckoning 1
GSM scanner-based measurement system for the cellular band. Indoor mapping desired. Pen computer desired. Carrying case for the system. GPS required. Portable use desired.	**E6474A:** Wireless network optimization platform E6474A-210: GSM Scanner measurement software license ..... 1 E6474A-030: Indoor measurement capability ..... 1 **E7465A:** GSM Scanner at 850 MHz ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-022: Portable Agilent high speed direct connect hub kit ..... 1 E6473B-040: Single scanner carry around bag ..... 1 E6473B-330: Pen tablet computer ..... 1 **86156A:** Drive-test system accessories 86156A-200: Garmin GPS II Plus 1
GSM combination phone- and scanner-based measurement system for the PCS band (single phone). Real time mapping desired. Cable for the Sagem OT169. Cable should include external RF connection (in-vehicle use intended). GPS required.	**E6474A:** Wireless network optimization platform E6474A-220: Combined GSM phone- and scanner-based measurement software license ..... 1 E6474A-020: Real time mapping software license ..... 1 **E7467A:** GSM scanner at 1900 MHz ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit ..... 1 E6473B-827: Sagem OT76M/OT96M/OT160/OT169 phone interface voice cable ..... 4 E6473B-899: Phone antenna cable kit ..... 1 **86156A:** Drive-test accessories 86156A-200: Garmin GPS II Plus 1

Part 6.4: GPRS Ordering Examples

Table 6 lists several typical E6474A system configurations for UMTS 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.

Table 6. Typical ordering configurations: W-CDMA (UMTS)

Desired system capability	You need to order: Description: Quantity:
GPRS phone-based measurement system (single phone). Desire direct connect, real time mapping. You will provide your own GPS and laptop and phones.	**E6474A:** Wireless network optimization platform E6474A-600: GSM phone measurement software license .....1 E6474A-020: Real time mapping software license 1
GPRS phone-based measurement system (up to four phones). Desired real time mapping. Cables for four Sagem OT190 phones at 900/1800 MHz with power up (desired in-vehicle use). You want GPS included with the system. You will provide your own laptop and test phones.	**E6474A:** Wireless network optimization platform E6474A-600: GSM phone measurement software license .....1 E6474A-010: Multiple phone software license .....1 E6474A-020: Real time mapping software .....1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit .....2 E6473B-825: Sagem GPRS phone interface cable .....4 8**6156A:** Drive-test accessories 86156A-220: External GPRS with DR 1
GPRS combination phone- and receiver-based measurement system for the 900/1800 MHz band. (single phone). Real time mapping desired. Cable for the Sagem OT96M GPRS. Cable should include external RF connection (in-vehicle use intended). Receiver, GPS and phone hardware required. Wireless data measurement software required. You will supply both laptops for drive-test and for server.	**E6474A:** Wireless network optimization platform E6474A-620: Combined GSM phone- and scanner- based measurement software license .....1 E6474A-020: Real time mapping software .....1 E6474A-700: Data measurement software license .....1 E6474A-710: Server data measurement software license .....1 **E6451C:** GSM receiver at 900 MHz .....1 **E6453C:** GSM receiver at 1800 MHz .....1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit .....1 E6473B-825: Sagem GPRS phone interface cable .....1 E6473B-898: Phone antenna cable kit .....1 E6473B-740: GPRS GSM/DCS test mobile 1

Part 6.5: W-CDMA (UMTS) Ordering Examples

Table 7 lists several typical E6474A system configurations for UMTS 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.

Table 7. Typical ordering configurations: W-CDMA (UMTS)

Desired system capability	You need to order: Description: Quantity:
W-CDMA (UMTS) receiver-based measurement system. Real time mapping desired. You will provide you own laptop.	**E6474A:** Wireless network optimization platform E6474A-310: W-CDMA (UMTS) receiver measurement software license real time mapping software ....1 E6474A-020: Real time mapping software ....1 **E6455C:** UMTS receiver with internal GPS at 2.1GHz 1
W-CDMA (UMTS) receiver-based measurement system. Real time mapping desired. Dead reckoning GPS desired. You will provide your own laptop.	**E6474A:** Wireless network optimization platform E6474A-310: W-CDMA (UMTS) receiver measurement software license real time mapping software ....1 E6474A-020: Real time mapping software ....1 **E6455C:** UMTS receiver with internal GPS at 2.1GHz ....1 **86156A:** Drive test accessories Option 220: GPS with dead reckoning 1
W-CDMA (UMTS) receiver-based measurement system. Real time mapping desired. Indoor mapping desired. Portable carrying case desired. Pen tablet computer desired.	**E6474A:** Wireless network optimization platform E6474A-310: W-CDMA (UMTS) receiver measurement software license ....1 E6474A-020: Real time mapping software ....1 E6474A-030: Indoor mapping software license ....1 **E6455C:** UMTS receiver with internal GPS at 2.1GHz ....1 **E6473B:** Accessories E6473B-040: Single receiver carrying case ....1 E6473B-330: Pen tablet computer 1
W-CDMA (UMTS) phone-based measurement system, with Data Measurement options. Real time mapping desired. You will provide your own UMTS phone and laptop.	**E6474A:** Wireless network optimization platform E6474A-300: W-CDMA (UMTS) phone-based measurement software license ....1 E6474A-700: Data measurement software license ....1 E6474A-710: Server data measurement software license ....1 E6474A-020: Real time mapping software 1
W-CDMA (UMTS) receiver and phone combination system, you already own a UMTS receiver-based measurement license and hardware.	**E6474A:** Wireless network optimization platform E6474A-315: W-CDMA (UMTS) receiver to phone/ receiver combo measurement software license 1
W-CDMA (UMTS) receiver and phone combination system. Real time mapping desired. You will provide your own laptop and phone hardware.	**E6474A:** Wireless network optimization platform E6474A-320: W-CDMA (UMTS) phone and receiver combination measurement software license ....1 E6474A-020: Real time mapping software ....1 E6455C: UMTS receiver with internal GPS at 2.1GHz 1

Part 6.6: iDEN ordering examples

Table 8 lists several typical E6474A network optimization solution system configurations for iDEN 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.

Table 8. Typical ordering configurations: iDEN

Desired system capability	You need to order: Description: Quantity:
iDEN phone-based measurement system (single phone). Desire real time mapping. Phone interface cable for iDEN i1000 plus phone. You will provide your own GPS and laptop.	**E6474A:** Wireless network optimization platform E6474A-400: iDEN phone measurement software license ..... 1 E6474A-020: Real time mapping software license ..... 1 **E6473B:** Accessories E6473B-860: IDEN i1000 plus phone interface cable 1
iDEN phone-based measurement system (up to four phones). Desired real time mapping. Four interface cables for iDEN i1000 plus phone (cables with power up; desired in-vehicle use). You want GPS included with the system. You will provide your own laptop.	**E6474A:** Wireless network optimization platform E6474A-400: iDEN phone measurement software license ..... 1 E6474A-010: Multiple phone software license ..... 1 E6474A-020: Real time mapping software license ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit ..... 2 E6473B-860: IDEN i1000 plus phone interface cable ..... 4 **86156A:** Drive-test accessories 86156A-220: External GPS with dead reckoning 1
iDEN receiver-based measurement system. GPS required. Dead reckoning desired. You will provide your own laptop (in-vehicle use of system).	**E6474A:** Wireless network optimization platform E6474A-410: iDEN scanner measurement software license ..... 1 **E7456C:** iDEN receiver ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit ..... 1 **86156A:** Drive system accessories 86156A-220: External GPS with dead reckoning 1
iDEN receiver-based measurement system. Indoor mapping desired. Pen computer desired. Carrying case for the system. GPS required. Portable use desired.	**E6474A:** Wireless network optimization platform E6474A-410: iDEN scanner measurement software license ..... 1 E6474A-030: Indoor measurement capability ..... 1 **E7465A:** E6458C GSM850 Receiver **E6473B:** Accessories E6473B-020: Portable USB hub ..... 1 E6473B-040: Single scanner carry around bag ..... 1 E6473B-331: Pen tablet computer ..... 1 E6473B-200: Garmin GPS II plus 1
iDEN combination phone- and receiver-based measurement system (single phone). Real time mapping desired. Phone interface cable i1000 plus phone (in-vehicle use intended).	**E6474A:** Wireless network optimization platform E6474A-420: Combined iDEN phone- and scanner-based measurement software license ..... 1 E6474A-020: Real time mapping software license ..... 1 **E7456C:** iDEN receiver ..... 1 **E6473B:** Accessories E6473B-015: Agilent high speed direct connect hub E6473B-021: In-vehicle Agilent high speed direct connect hub kit ..... 1 E6473B-860: iDEN i1000 plus phone interface cable 1

Part 6.7: TDMA Ordering Examples

Table 9 lists several typical E6474A system configurations for TDMA 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.

Table 9. Typical ordering configurations: TDMA

Desired system capability	You need to order: Description:	Quantity:
TDMA phone-based measurement system (single phone). Desire real time mapping. Cable for Nokia 6160 phone. You will provide your own GPS and laptop. Phones must be supplied by customer.	**E6474A:** Wireless network optimization platform	
	E6474A-500: TDMA phone measurement software license	1
	E6474A-020: Real time mapping software license	1
	E6473B: Accessories	
	E6473B-830: Nokia 6120/6160 phone interface cable	1
TDMA phone-based measurement system (up to four phones). Desired real time mapping. Four cables for Nokia 6160 phone with power up (Desired in-vehicle use). You want GPS. You will provide your own PC.	**E6474A:** Wireless network optimization platform	
	E6474A-500: TDMA phone measurement software license	1
	E6474A-010: Multiple phone software license	1
	E6474A-020: Real time mapping software license	1
	E6473B: Accessories	
	E6473B-015: Agilent high speed direct connect hub	
	E6473B-021: In-vehicle Agilent high speed direct connect hub kit	2
	E6473B-830: Nokia 6120/6160 phone interface cable	4
	86156A: Drive test accessories	
	86156A-220: External GPS with dead reckoning	1
TDMA receiver-based measurement system for the cellular band. You will provide your own GPS and laptop.	**E6474A:** Wireless network optimization platform	
	E6474A-510: TDMA receiver/scanner measurement software license	1
	E6452A: CDMA/TDMA cellular band receiver at 850MHz	1
TDMA receiver-based measurement system for the cellular band with internal GPS. You will provide your own laptop.	**E6474A:** Wireless network optimization platform	
	E6474A-510: TDMA receiver/scanner measurement software license	1
	E6452A: CDMA/TDMA cellular band receiver at 850MHz with internal GPS	1
TDMA receiver-based measurement system for the cellular band. Dead reckoning. You want the GPS included with the system. You will provide your own laptop.	**E6474A:** Wireless network optimization platform	
	E6474A-510: TDMA receiver/scanner measurement software license	1
	E6452C: CDMA/TDMA cellular band receiver at 850MHz with internal GPS	1
	86156A: Drive test accessories	
	86156A-220: External GPS with dead reckoning	1
TDMA Combination phone- and receiver-based measurement system for the PCS band with internal GPS (single phone). Real time mapping desired. Cable for Nokia 6160 phone (in-vehicle use intended).	**E6474A:** Wireless network optimization platform	
	E6474A-520: Combined TDMA phone- and receiver/scanner-based measurement software license	1
	E6474A-020: Real time mapping software license	1
	E6450B: CDMA/TDMA PCS band receiver at 1900MHz	1
	E6450B-200: Adds internal GPS to E6450B	1
	E6473B: Drive test accessories	
	E6473B-015: Agilent high speed direct connect hub	
	E6473B-021: In-vehicle Agilent high speed direct connect hub kit	1
	E6473B-830: Nokia 6120/6160 phone interface cable	1
TDMA combination phone- and receiver-based measurement system for the PCS band. Need two receivers and multi-phone option. One receiver with internal GPS. Real time mapping desired. Two cables for Nokia 6160 phone (in-vehicle use intended). You provide your own PC.	**E6474A:** Wireless network optimization platform	
	E6474A-520: Combined TDMA phone- and receiver/scanner-based measurement software license	1
	E6474A-010: Multiple phone software license	1
	E6474A-020: Real time mapping software license	1
	E6450B: CDMA/TDMA PCS band receiver at 1900MHz	2
	E6450B-200: Adds internal GPS to E6450B	1
	E6473B: Drive test accessories	
	E6473B-015: Agilent high speed direct connect hub	
	E6473B-021: In-vehicle Agilent high speed direct connect hub kit	1
	E6473B-803: Nokia 6120/6160 phone interface cable	2

Part 7: Support Options

For the E6474A receiver software licenses and combination receiver/phone licenses, the following support options are included for the first year:

- Agilent Call Center phone support, four hour response time or less
- Telephone assistance and Web training on specific topics
- Software updates
- On-site training and start-up assistance

For the E6474A software licenses for phone-only support, the following product support options are included for the first year:

- Agilent Call Center phone support, four hour response time or less
- Software updates

The Agilent Advantage Integrated Customer Care Program allows customers to upgrade to more comprehensive product support options. For the program summary and options, refer to publication 5988-4793EN.

Additional Agilent literature

Brochures

Accelerate cdma2000 Performance
With Agilent's Wireless Network Solutions
Brochure 5988-4423EN

Product Overviews

Agilent E6474A Wireless Network
Optimization Drive Test System
Product Overview 5988-3558EN

Agilent Indoor Wireless
Measurement Systems
Product Overview 5968-8691E

Agilent Wireless Data Measurement
Product Overview 5980-2310E

Agilent Direct Connect Hub
Product Overview 5988-3176EN

CDMA Base Station Over-Air Maintenance Tool
Product Overview 5968-8697E

Agilent E7495A Base Station Test Set
Product Overview 5988-7186EN

Configuration Guides

CDMA Base Station Over-Air Maintenance Tool
Configuration Guide 5968-8696E

Data Sheets

Agilent E6474A GSM/GPRS Wireless
Network Optimization Platform
Data Sheet 5988-5904EN

Agilent Wireless Data Measurement
Data Sheet 5988-1507EN

CDMA Base Station Over-Air Maintenance Tool
Data Sheet 5968-8687E

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You can also contact one of the following centers and ask for a communication solution representative:

For Updates to this list contact cco-team@agilent.com

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China		800	810 0189
Denmark	+45		70 13 15 15
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Switzerland	Italian	0800	80 5353
Switzerland	German	0800	80 5353
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