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
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.

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

<table>
<thead>
<tr>
<th>Desired functionality</th>
<th>Software option(s) required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver-based drive system measurements (up to 4 receivers)</td>
<td>110</td>
</tr>
<tr>
<td>Real-time mapping capability (can be combined with all other software functionality)</td>
<td>160 (can be combined with any or all other software option numbers)</td>
</tr>
<tr>
<td>Indoor measurement capability (can be combined with all other software functionality)</td>
<td>180 (can be combined with any or all other software option numbers)</td>
</tr>
</tbody>
</table>

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).
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.

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

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.

### Table 2. Accessories

#### E7476A optional system accessories

<table>
<thead>
<tr>
<th>Agilent 86154A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 010: Laptop PC</td>
</tr>
<tr>
<td>Option 210: Trimble Placer GPS 455 with dead reckoning</td>
</tr>
<tr>
<td>Option 230: Differential GPS receiver</td>
</tr>
<tr>
<td>Option 531: Briefcase carrier</td>
</tr>
</tbody>
</table>

#### E7476A replacement accessories

<table>
<thead>
<tr>
<th>Agilent 86154A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 020: Socket I/O ruggedized dual serial port PCMCIA card</td>
</tr>
<tr>
<td>Option 099: Multiple receiver interconnect kit</td>
</tr>
<tr>
<td>Option 450: W-CDMA band magnetic-mount RF antenna</td>
</tr>
<tr>
<td>Option 500: Vehicle mounting kit</td>
</tr>
</tbody>
</table>

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### Table 3. Accessories intended for indoor use

#### E7476A optional indoor accessories

<table>
<thead>
<tr>
<th>Agilent 86154A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 030: Fujitsu pen tablet computer</td>
</tr>
<tr>
<td>Option 032: Pen tablet auto adapter</td>
</tr>
<tr>
<td>Option 034: Pen tablet battery kit</td>
</tr>
<tr>
<td>Option 036: Universal serial bus hub</td>
</tr>
<tr>
<td>Option 425: Dual band indoor antenna</td>
</tr>
<tr>
<td>Option 507: Measurement system backpack</td>
</tr>
<tr>
<td>Option 500: Receiver battery kit</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Desired system capability</th>
<th>What to order</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver-based measurement system for the W-CDMA band with a carrying case for the system. You will provide your own GPS and laptop.</td>
<td>Agilent E7476A</td>
<td>Drive test system</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 110</td>
<td>Receiver measurement software</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Agilent E6455C</td>
<td>W-CDMA receiver with internal GPS</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Agilent 86154A</td>
<td>Drive system accessories</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 531</td>
<td>Briefcase carrier</td>
<td>1</td>
</tr>
<tr>
<td>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.</td>
<td>Agilent E7476A</td>
<td>Drive test system</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 110</td>
<td>Receiver measurement software</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Agilent E6455C</td>
<td>W-CDMA receiver with internal GPS</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Agilent 86154A</td>
<td>Drive system accessories</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 531</td>
<td>Briefcase carrier</td>
<td>1</td>
</tr>
<tr>
<td>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.</td>
<td>Agilent E7476A</td>
<td>Drive test system</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 110</td>
<td>Receiver measurement software</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Agilent E6455C</td>
<td>W-CDMA band RF digital receiver</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Agilent 86154A</td>
<td>Drive system accessories</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 210</td>
<td>External GPS with DR</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Option 531</td>
<td>Briefcase carrier</td>
<td>1</td>
</tr>
</tbody>
</table>

*Table 4. Typical ordering configurations*
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
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