

Agilent Technologies E7490A CDMA BTS Maintenance Tools

Configuration Guide



CDMA Over-Air Maintenance Tool

The Agilent E7490A CDMA Over-Air Maintenance Tool is used to make diagnostic measurements of IS-95 and J-STD-008 CDMA base stations over the air. The system software runs on a PC that interfaces with a digital RF receiver and/or a CDMA mobile phone.

The Agilent E7490A CDMA over-air maintenance tool is available in several configurations:

- Phone-based systems
- Receiver-based systems
- Combined phone-and-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 E7490A Technical Specifications* (Agilent literature #5968-8687E), which describes the features and functionality in detail. This document is divided into six sections:

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

Section 6 provides the information required for upgrading existing systems. For example, if you currently own an Agilent E7490A system with only phone-based measurement capability, and you want to upgrade it to have combined phone-and-receiver-based measurement capability, then the information in section 6 will assist you in ordering the necessary options.

Section 1. Basic Description of Product Configuration

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

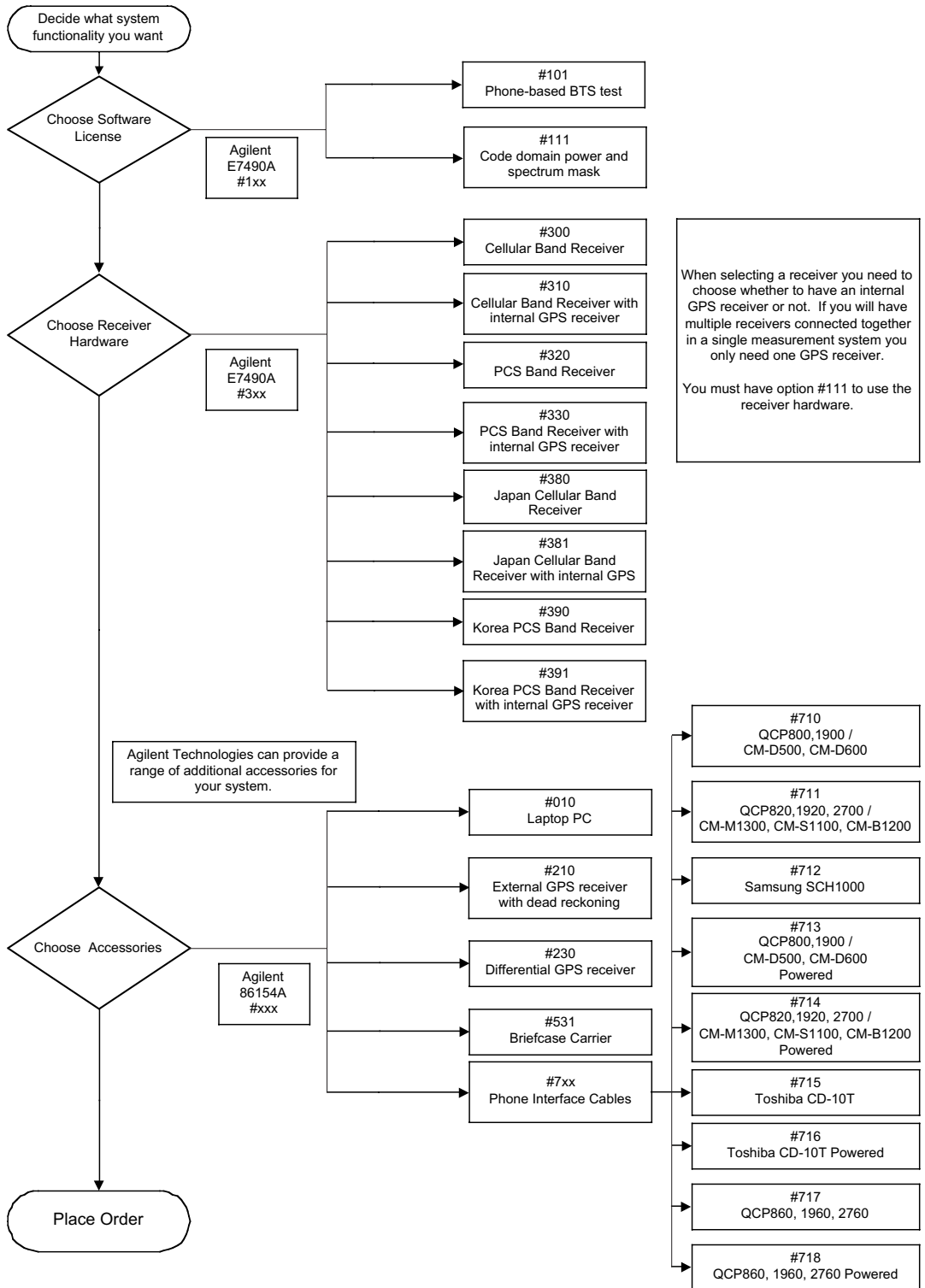
1. Choose the software functionality that you want (option numbers in the 100's).
2. Choose the receiver hardware that you want (option numbers in the 300's).
3. Choose the accessories that you want (Agilent Technologies 86154A drive test system accessories).

Each system requires either an Agilent digital receiver, a CDMA mobile phone, or both. The system also requires a PC with Windows® 95, 98 or NT® running the measurement software. A GPS receiver and GPS antenna are required to log the position information and provide timing for the receiver CDMA 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 E7490A system.

Figure 1. Ordering decision process – new systems



Section 2. Software Options

This part of the document assumes that you are starting from scratch. If you are adding functionality to an existing system, refer to section 5, *Upgrading existing systems*.

The following software options are available for the Agilent E7490A:

- Option 101: CDMA phone-based BTS test software license
- Option 111: Code domain power and spectrum mask software license

Use Table 1 to determine which software option(s) you require for your application. For a detailed description of the functionality, please refer to the *Agilent E7490A Technical Specifications* (Agilent literature number 5968-8687E).

Desired Functionality	Software Option(s) Required
Phone-based BTS test capability (Automated Lucent MOST function)	101
Code domain power measurements and IS-97 spectrum mask capability	111
BTS test capability (Automated Lucent MOST function) AND Code domain power measurements and IS-97 spectrum mask capability	101 AND 111

Table 1. Software functionality

Each software order includes the following components:

- CD with software and documentation
- Getting Started Guide
- Software license key (attaches to PC parallel port)

If Options 101 and 111 are ordered together, the software licenses will be placed on a single security key. The individual licenses can be moved to a different security key using the supplied license manager software.

Option 101 includes a Socket I/O ruggedized single serial port PCMCIA card for connecting phones to the PC.

IMPORTANT: Cables are required to connect CDMA handsets to the PC. For cable options for different CDMA handsets, refer to section 4, *Accessories*.

Section 3. Receiver Hardware Options

This part of the document assumes that you are starting from scratch. If you are adding functionality to an existing system, refer to section 5, *Upgrading existing systems*.

The following digital receiver hardware options are available for the Agilent E7490A:

- Option 300: Cellular band digital receiver
- Option 310: Cellular band digital receiver with internal GPS receiver
- Option 320: PCS band digital receiver
- Option 330: PCS band digital receiver with internal GPS receiver
- Option 380: Japan Cellular band receiver
- Option 381: Japan Cellular band receiver with internal GPS receiver
- Option 390: Korea PCS band receiver
- Option 391: Korea PCS band receiver with internal GPS receiver

Software Option 111 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 having GPS internal to the receiver. Internal GPS provides portability and simplifies system configuration. If you require dead reckoning with your GPS, use an external GPS and do not select a receiver with internal GPS. Agilent RF receivers with internal GPS cannot be used with an external GPS. Agilent offers an external GPS with dead reckoning capability. Refer to section 4, *Accessories*.

For receiver specifications and a detailed description of the receiver functionality, please refer to the *Agilent E7490A Technical Specifications* (Agilent literature number 5968-8687E).

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, order multiple measurement receivers.

In multiple-receiver configurations, only one of the receivers requires GPS. If you are using multiple receivers in your system, you should only select ONE of the receivers with internal GPS.

Each receiver includes the following components:

- Magnetic-mount RF antenna for the corresponding frequency band
- TNC-to-type 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)

The receivers with internal GPS receivers (Options 310, 330, 381 and 391) also include the following component:

- Magnetic-mount GPS antenna with cable

Section 4. Accessories

Accessories for the Agilent E7490A are ordered using the Agilent 86154A model number. This model number provides an easy way to order accessories. Table 2 lists the accessories that are available for the E7490A. Items in column 1 would typically be ordered with an E7490A system. Items in column 2 would typically be ordered as replacement parts, as these elements are included with the E7490A system.

E7490A Optional System Accessories	E7490A 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 410: PCS band magnetic-mount RF antenna
Option 531: Briefcase carrier	Option 430: Cellular band magnetic-mount RF antenna
Option 710: Interface cable for Qualcomm QCP800, QCP1900, Sony CM-D500 and CM-D600	Option 510: Vehicle mounting kit
Option 711: Interface cable for Qualcomm QCP820, QCP1920, QCP2700 Sony CM-M1300, CM-S1100 and CM-B1200	
Option 712: Interface cable for Samsung SCH1000	
Option 713: Powered interface cable for Qualcomm QCP800, QCP1900, Sony CM-D500 and CM-D600	
Option 714: Powered interface cable for Qualcomm QCP820, QCP1920, QCP2700 Sony CM-M1300, CM-S1100 and CM-B1200	
Option 715: Interface cable Toshiba CD-10T	
Option 716: Powered interface cable for Toshiba CD-10T	
Option 717: Interface cable for Qualcomm QCP860, QCP1960, and QCP2760	
Option 718: Powered interface cable for Qualcomm QCP860, QCP1960, and QCP2760	

Table 2. Accessories

For a detailed description of these accessories, please refer to the *Agilent E7490A Technical Specifications* (Agilent literature number 5968-8687E).

Section 5. Upgrading Existing Systems

The Agilent E7490A is a scalable system. You can start with one set of capabilities and integrate additional capabilities later. Some examples:

- 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

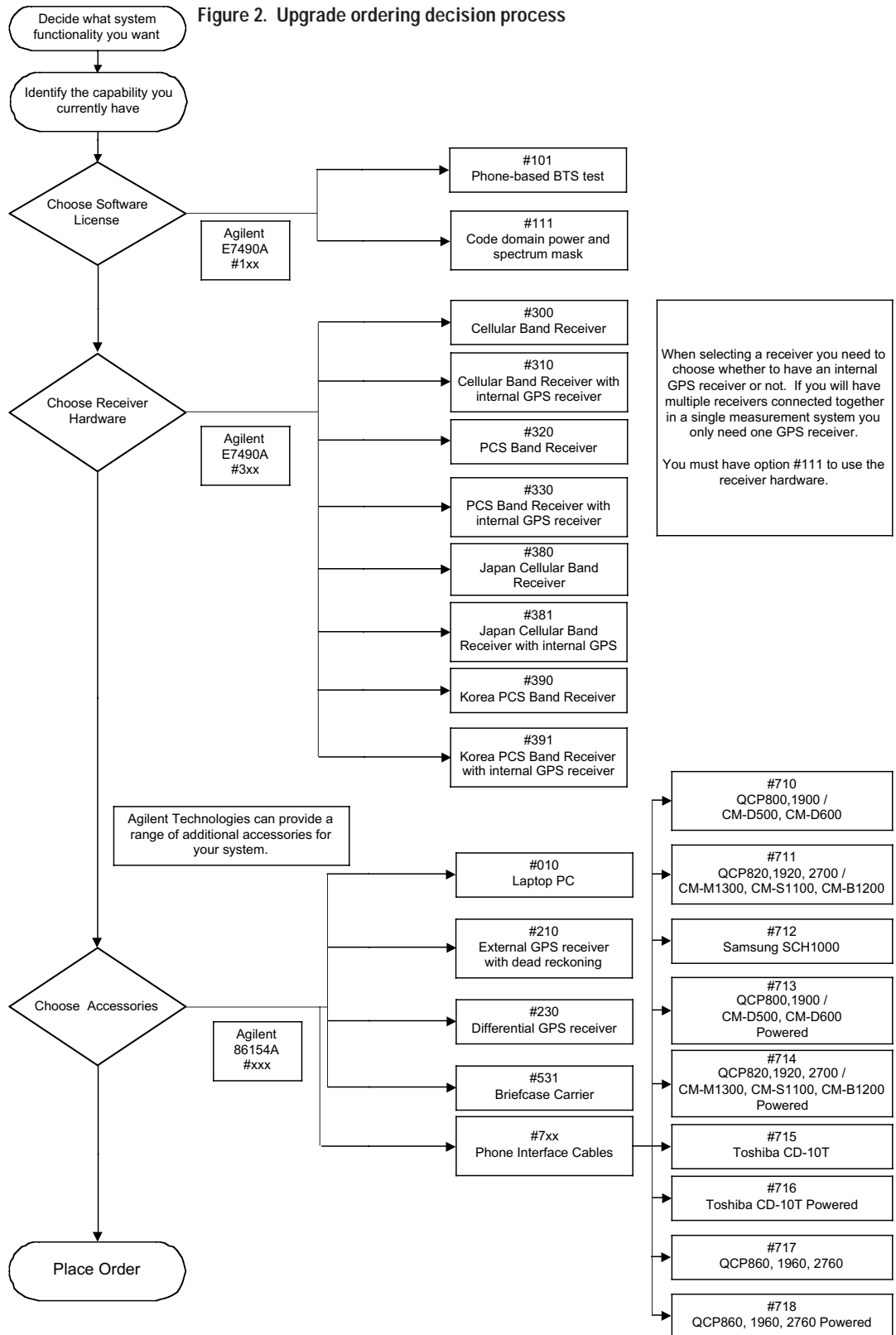
The system is made up of software, receiver hardware, and accessories. Upgrading a system is similar to ordering a system from scratch. You simply order those system elements that you don't currently have. To upgrade a system:

1. Decide what system capability you want
2. Identify the capability you currently have
3. Choose the software options that you need to add (option numbers in the 100's).
4. Choose the hardware options that you need to add (option numbers in the 300's).
5. Choose the accessories that you need to add (Agilent 86154A drive test system accessories).

Figure 2 illustrates the process of choosing the specific options to order when you are upgrading an Agilent E7490A system.

The E7490A system is completely scalable with the Agilent E7473A CDMA drive test system and the rest of the E74xx drive test family. For more information on related products, please refer to the literature listed at the end of this document.

Figure 2. Upgrade ordering decision process



Section 6. Ordering Examples

Table 3 lists several typical Agilent E7490A system configurations along with the products and options that must be ordered for each configuration. This is not a complete list of all possible configurations, but it includes typical configurations to illustrate the ordering process.

Desired System Capability	What to Order	Description	Quantity
Code domain and spectrum mask system for the cellular band with internal GPS. Carrying case for the system. You will provide your own laptop.	E7490A	CDMA over-air maintenance tool	1
	Option 111	Code domain power and spectrum mask SW	1
	Option 310	Cellular receiver with internal GPS	1
	86154A	Drive system accessories	1
	Option 531	Briefcase carrier	1
Code domain and spectrum mask measurement system for the cellular band. Carrying case for the system. You will provide your own GPS and laptop.	E7490A	CDMA over-air maintenance tool	1
	Option 111	Code domain power and spectrum mask SW	1
	Option 300	Cellular band RF digital receiver	1
	86154A	Drive system accessories	1
	Option 531	Briefcase carrier	1
Phone-based automated BTS test system (automated Lucent MOST function). Standard cable for QCP1900. You will provide your own GPS and laptop.	E7490A	CDMA over-air maintenance tool	1
	Option 101	CDMA phone-based BTS test SW	1
	86154A	Drive system accessories	1
	Option 710	Interface cable for QCP800, 1900	1
	Phone-based automated BTS test system (automated Lucent MOST function). Cable with power for QCP820. Carrying case for the system. You want GPS and laptop PC included with the system.	E7490A	CDMA over-air maintenance tool
Option 101		CDMA phone-based BTS test SW	1
86154A		Drive system accessories	1
Option 010		Laptop PC	1
Option 210		External GPS with DR	1
Option 531		Briefcase carrier	1
Option 714		Powered interface cable QCP820, 1920, 2700	1
Code domain and spectrum mask for the PCS band AND Phone-based automated BTS test system (automated Lucent MOST function). Powered cable for QCP2700. You want internal GPS and a laptop PC included with the system.	E7490A	CDMA over-air maintenance tool	1
	Option 101	CDMA phone-based BTS test SW	1
	Option 111	Code domain power and spectrum mask SW	1
	Option 330	PCS receiver with internal GPS	1
	86154A	Drive system accessories	1
	Option 010	Laptop PC	1
	Option 531	Briefcase carrier	1
	Option 714	Powered interface cable QCP820, 1920, 2700	1

Table 3. Typical ordering configurations

Additional Agilent Literature

<i>E7490A CDMA Over-Air Maintenance Tool Technical Specifications</i>	<i>5968-8687E</i>
<i>E7490A CDMA Over-Air Maintenance Tool Product Overview .</i>	<i>5968-8697E</i>
<i>E7473A CDMA Drive Test System Configuration Guide</i>	<i>5968-5553E</i>
<i>E7473A CDMA Drive Test System Technical Specification</i>	<i>5968-5555E</i>
<i>CDMA Drive Test Product Note</i>	<i>5968-5554E</i>
<i>E7480A CDMA Post Processing Product Overview</i>	<i>5968-1549E</i>
<i>E7474A TDMA Drive Test System Technical Specifications</i>	<i>5968-5556E</i>
<i>E7474A TDMA Drive Test System Configuration Guide</i>	<i>5968-5861E</i>
<i>E7474A TDMA Drive Test System Product Overview</i>	<i>5968-8689E</i>
<i>E7475A GSM Drive Test System Technical Specifications</i>	<i>5968-5564E</i>
<i>E7475A GSM Drive Test System Configuration Guide</i>	<i>5968-5563E</i>
<i>E7475A GSM Drive Test System Awareness Brochure</i>	<i>5968-5562E</i>

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