



# Using Signal Studio Waveform Licenses

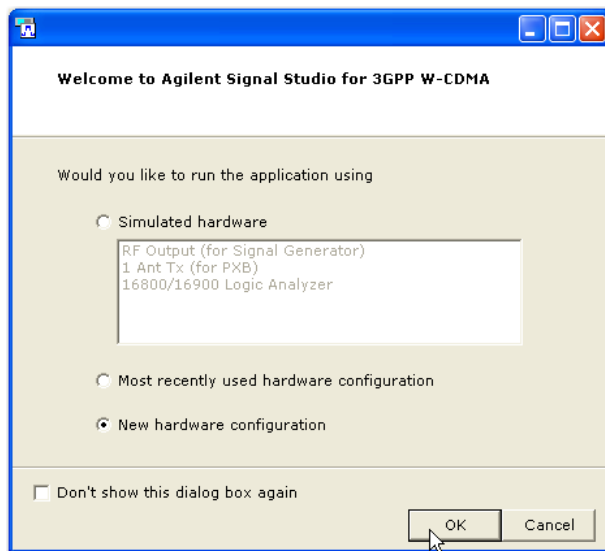
## Software and Instrument Procedure

After you have installed the Agilent 5- or 50-pack waveform license in your MXG or ESG vector signal generator, use this procedure to do the following:

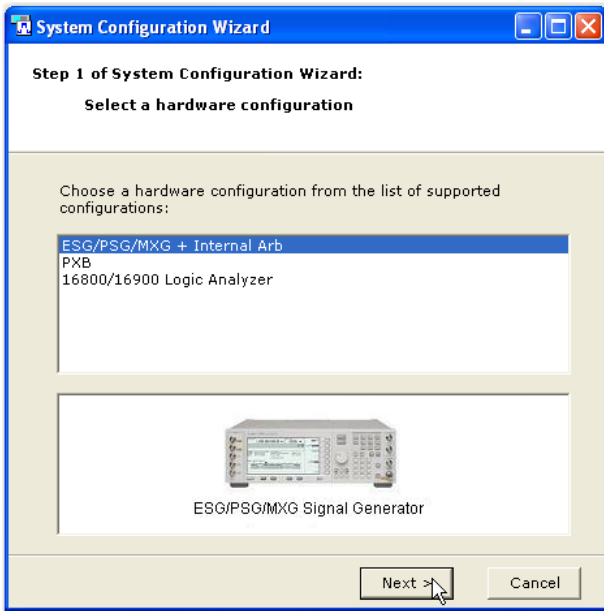
- Use the Signal Studio software to configure, generate, and download waveform files to your instrument
- Evaluate a waveform in your instrument and then lock it to a 5- or 50-pack license slot

### Using the Signal Studio Software

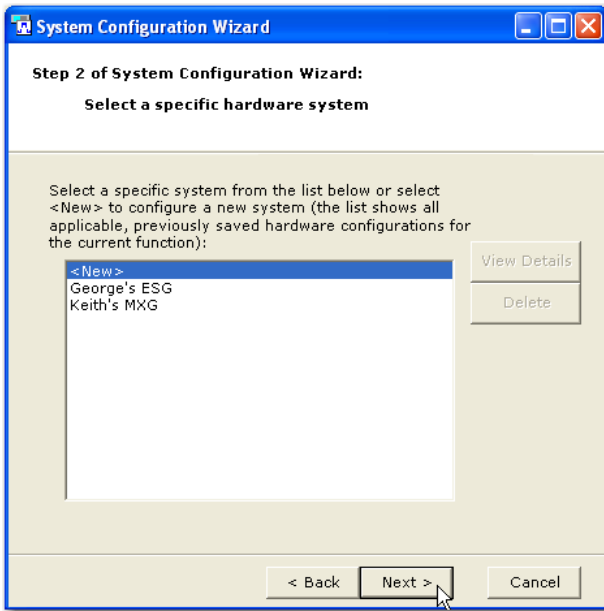
1. From the Agilent website, [www.agilent.com/find/signalstudio](http://www.agilent.com/find/signalstudio), download and install the N76xxB Signal Studio software of your choice.
2. Open the software. The system configuration wizard appears.
3. Select **New hardware configuration** and click **OK**. If your software was previously connected to the instrument, choose **Most recently used hardware configuration**. Additionally, you can select **Simulated hardware** to create and export waveform files to your PC.



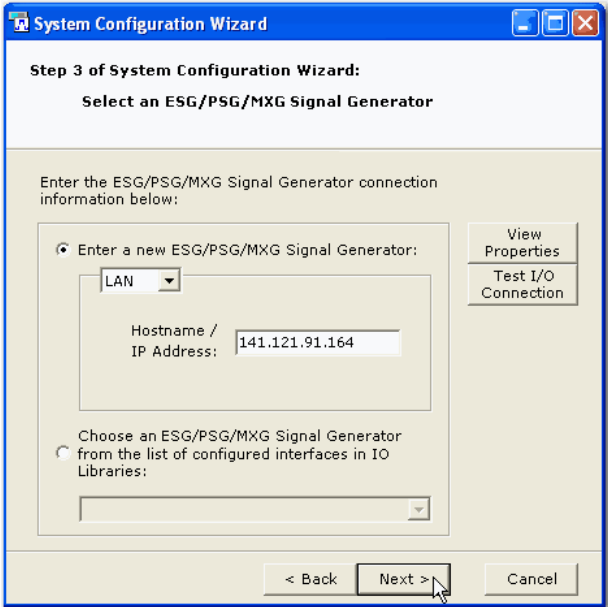
4. Click **Next**



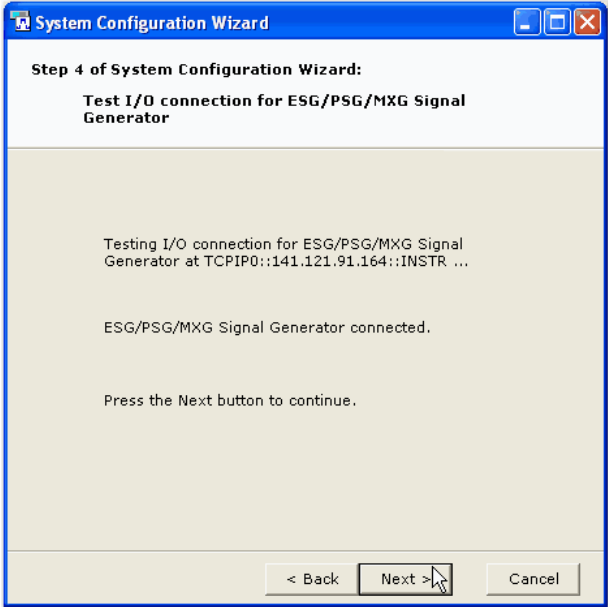
5. Click **Next**.



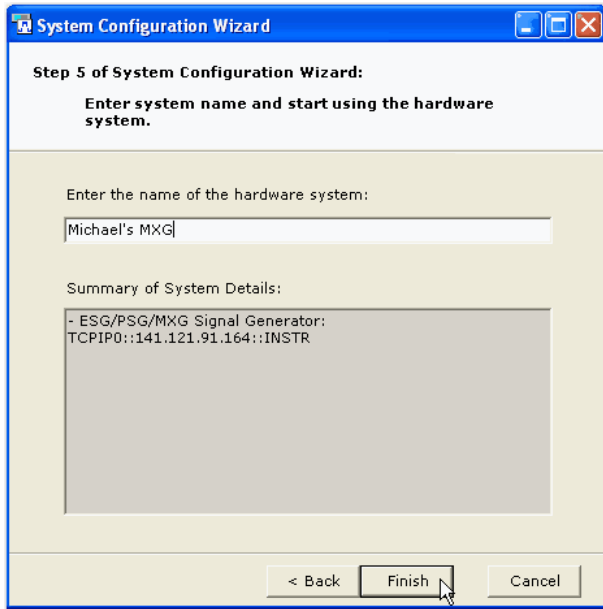
6. Enter your instrument's IP address and click **Next**.



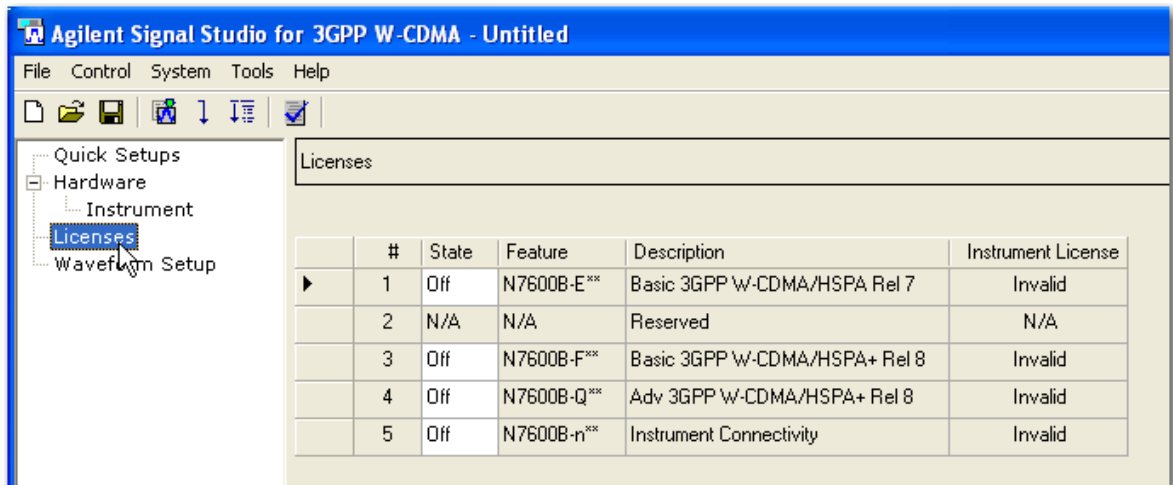
7. Click **Next**.



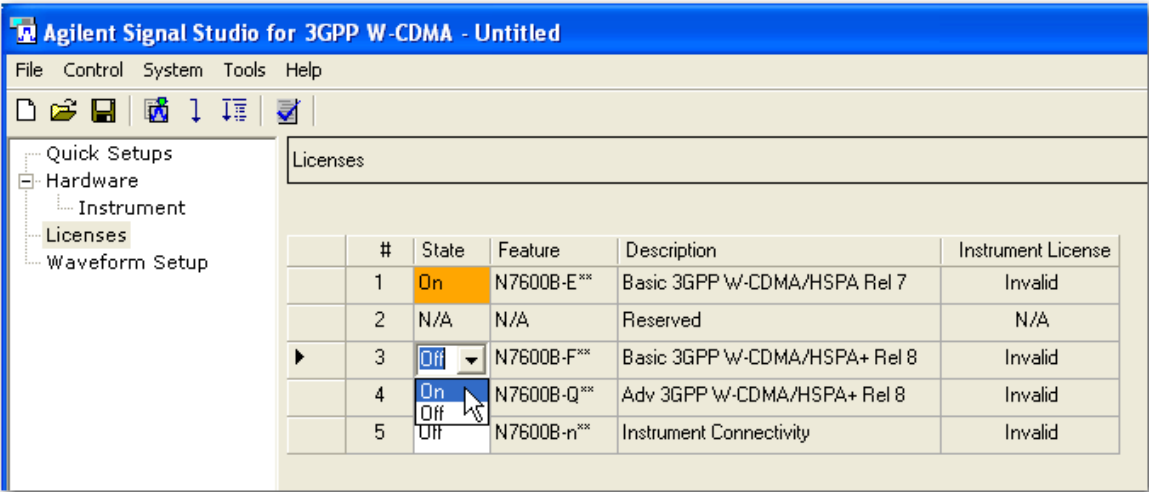
8. Enter a name for your instrument and click **Finish**.



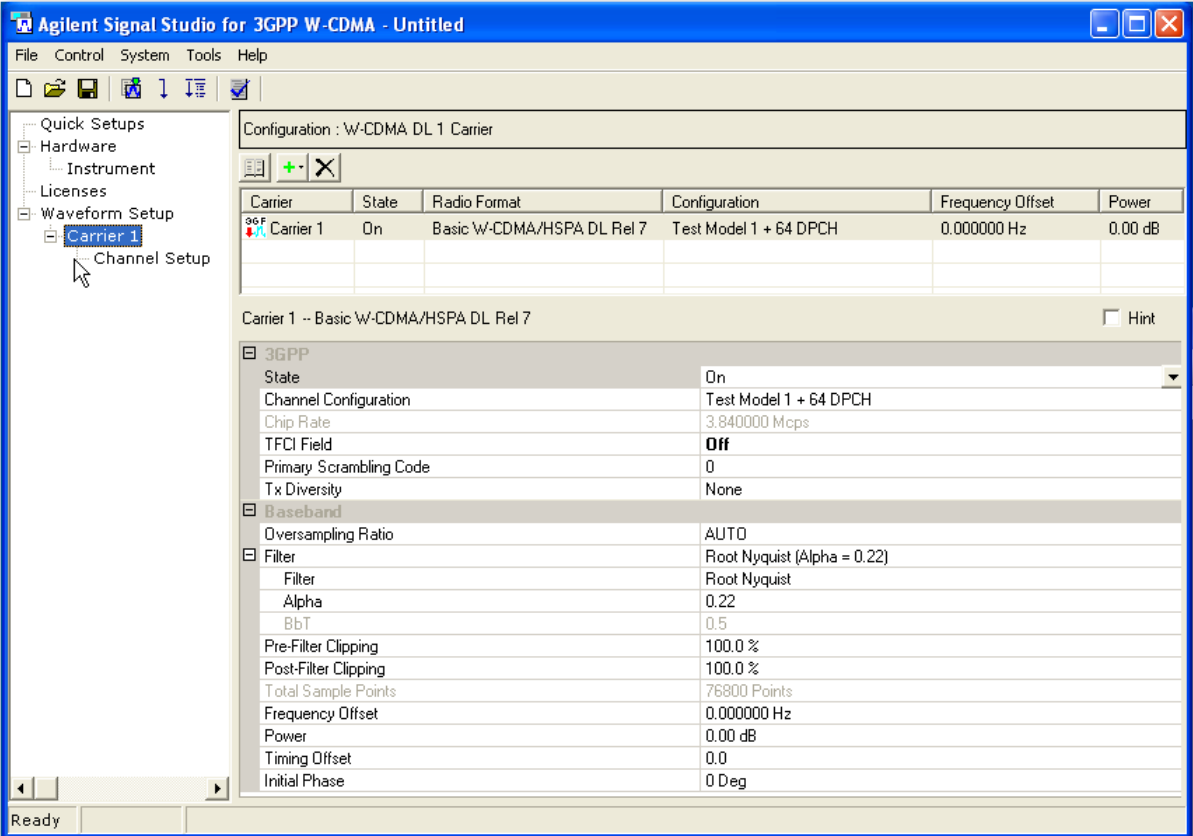
9. From the software's tree view, select **Licenses**. Notice that the state of each license is set to **Off** and displays **Invalid**. If you are using the software's 14-day free trial or have previously purchased a basic option, those licenses will be valid and already set to **On**.



10. Click the **State** field for each **Off** license and set to **On**. These licenses will continue to display **Invalid**.

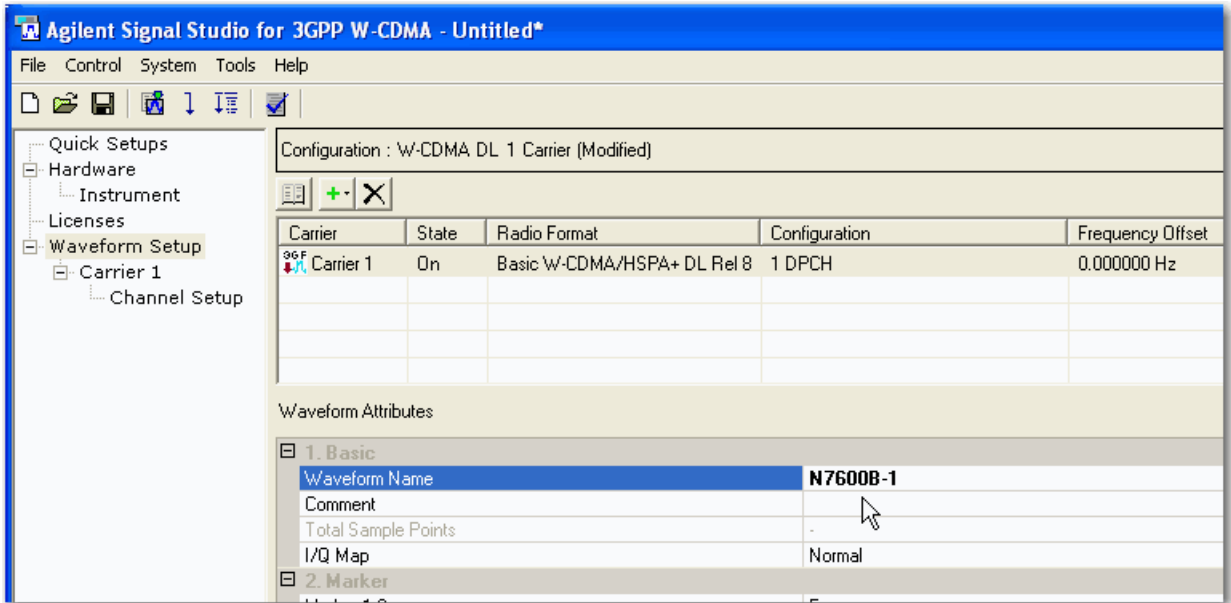


11. Configure the Signal Studio waveform using the various parameter selections and settings available under the **Waveform Setup** node in the tree view. This example shows the carrier settings for the N7600B Signal Studio software. Waveform parameters vary among Signal Studio products, so refer to your software's help system for more information.

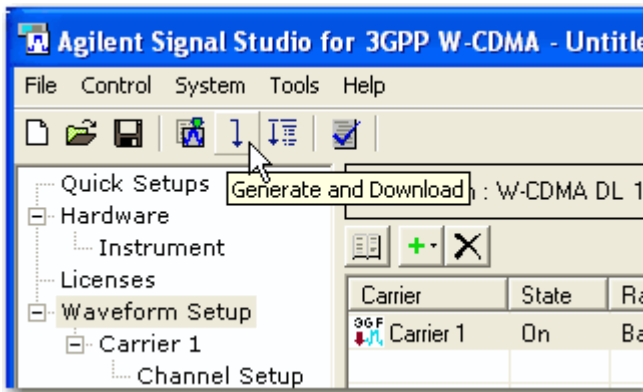


- From the tree view, select **Waveform Setup** and enter a **Waveform Name**.

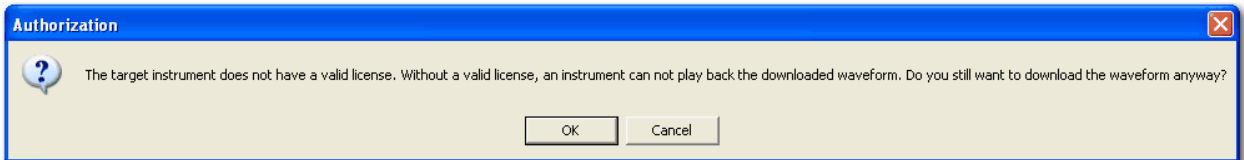
**NOTE:** Some Signal Studio applications do not allow waveform file names greater than eight characters.



- Click the **Generate and Download** button.



- The following message appears. Click **OK**.



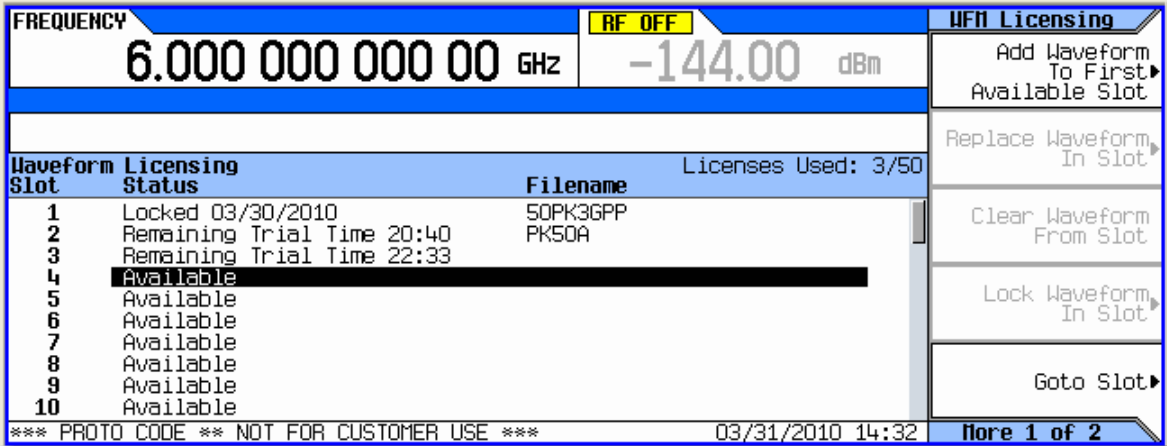
The waveform file now resides in the volatile memory of your instrument.

### Evaluating and Licensing the Waveform to Your Instrument

#### On the MXG

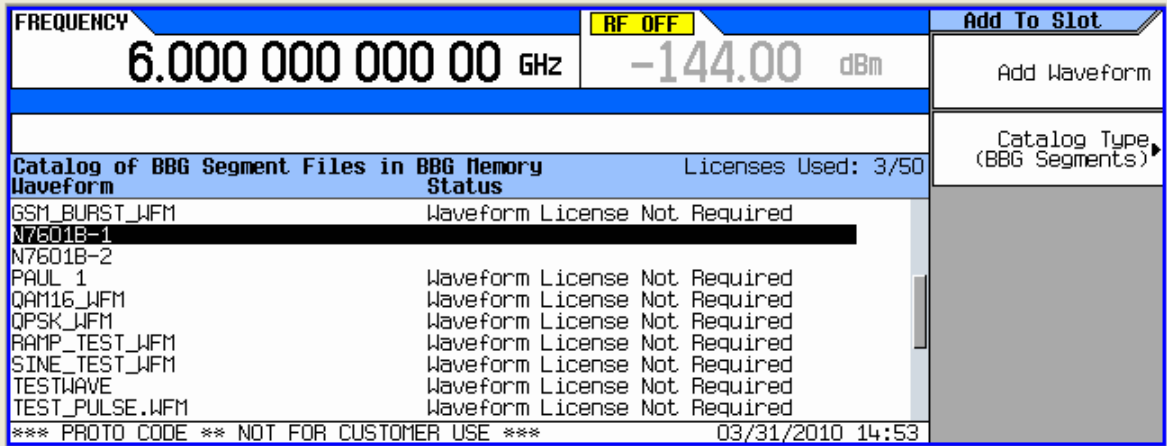
**NOTE:** If you are using an MXG-ATE, You must use the signal generator's web interface to perform the following steps.

- 1. Press **Local** (same key as **Cancel/(ESC)**) to unlock the instrument from remote operation.
- 2. Press **Mode > Dual ARB > More > Waveform Licensing**. The following screen appears, showing occupied and available waveform slots for your instrument's 5- or 50-pack license.

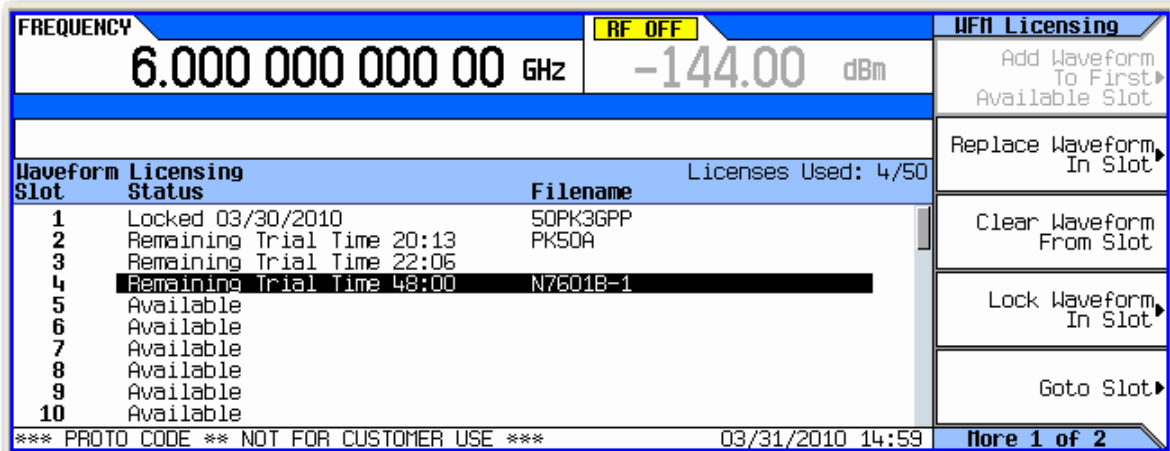


- 3. Press **Add Waveform To First Available Slot**. You can also use the arrow keys or front panel knob to select an occupied waveform slot and then press **Replace Waveform In Slot**. This allows you to use the remaining trial time for that slot on your waveform.

In either case, a screen appears, showing the available files stored in volatile BBG memory. The waveform file you created and downloaded with the Signal Studio software should now reside here.

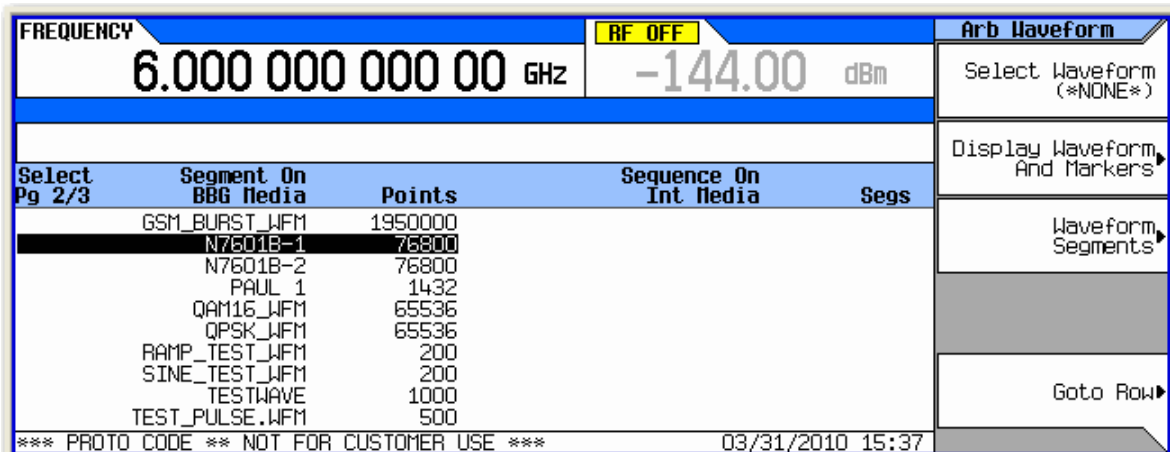


- Use the arrow keys or front panel knob to find your waveform file and press **Add Waveform**. Notice that you have 48 hours remaining to fully evaluate the waveform. The trial time applies to individual slots. Once a waveform is added to a slot, the trial time for that slot begins counting down and cannot be reset. During the trial time, you can replace and evaluate waveforms in a slot as many times as you like. At the end of the trial time, however, you can no longer play the waveform in that slot unless you license (lock) it to that slot. You can, however, still replace files in an expired, unlocked slot.



- To playback the waveform for evaluation, press **Mode > Dual ARB > Select Waveform** and use the arrow keys or front panel knob to find your waveform.

**NOTE:** The instrument's user interface uses the term *segment* to refer to a waveform file.



- Press **Select Waveform > ARB Off On to On**. Set your frequency and amplitude for the carrier as you like and then press **RF On/Off to On**. You can now evaluate the waveform in your specific test scenario.



- Prior to licensing (locking) your waveform file, you must save it to the instrument's non-volatile internal storage. Press **Mode > Dual ARB > Select Waveform > Waveform Segments > Load Store to Store** and use the arrow keys or front panel knob to select your waveform. Then press **Store Segment to Int Media**. If you do not save your waveform file to internal storage, you will be prompted to do so when you attempt to license the waveform file.

FREQUENCY			AMPLITUDE			Arb Segments	
6.000 000 000 00 GHz			-144.00 dBm			Load <b>Store</b>	
I/Q			ARB			Store Segment To Int Media	
BBG Memory		~57.2MSa free	Int Storage		~90MSa free	Store All To Int Media	
Pg 2/3	Segment	Points	Pg 2/3	Segment	Points	Delete Segment ▶	
	GSM_BURST_WFM	1950000		GSM_BURST_WFM	1950000	Delete All Segments On BBG Memory ▶	
	<b>N7601B-1</b>	<b>76800</b>		<b>N7601B-1</b>	<b>76800</b>		
	N7601B-2	76800		PAUL 1	1432		
	PAUL 1	1432		QAM16_WFM	65536		
	QAM16_WFM	65536		QPSK_WFM	65536		
	QPSK_WFM	65536		RAMP_TEST_WFM	200		
	RAMP_TEST_WFM	200		SINE_TEST_WFM	200		
	SINE_TEST_WFM	200		TESTWAVE	1000		
	TESTWAVE	1000		TEST_PULSE_WFM	500		
	TEST_PULSE_WFM	500		WCDMA_10PCH_WFM	307200		
*** PROTO CODE ** NOT FOR CUSTOMER USE ***			03/31/2010 16:26			Page 1 of 2	

- To license the waveform into a 5- or 50-pack slot, press **Mode > Dual ARB > More > Waveform Licensing** and use the arrow keys or front panel knob to select your waveform file's slot.

FREQUENCY			AMPLITUDE			WFM Licensing	
6.000 000 000 00 GHz			-144.00 dBm			Add Waveform To First Available Slot ▶	
I/Q			ARB			Replace Waveform In Slot ▶	
Waveform Licensing		Licenses Used: 4/50					
Slot	Status	Filename		Clear Waveform From Slot			
1	Locked 03/30/2010	50PK3GPP		Lock Waveform In Slot ▶			
2	Remaining Trial Time 19:23	PK50A		Goto Slot ▶			
3	Remaining Trial Time 21:16						
4	<b>Remaining Trial Time 47:10</b>	<b>N7601B-1</b>					
5	Available						
6	Available						
7	Available						
8	Available						
9	Available						
10	Available						
*** PROTO CODE ** NOT FOR CUSTOMER USE ***			03/31/2010 15:48			Page 1 of 2	

9. Press **Lock Waveform In Slot**. A warning message appears. Press **Confirm Locking Waveform**.

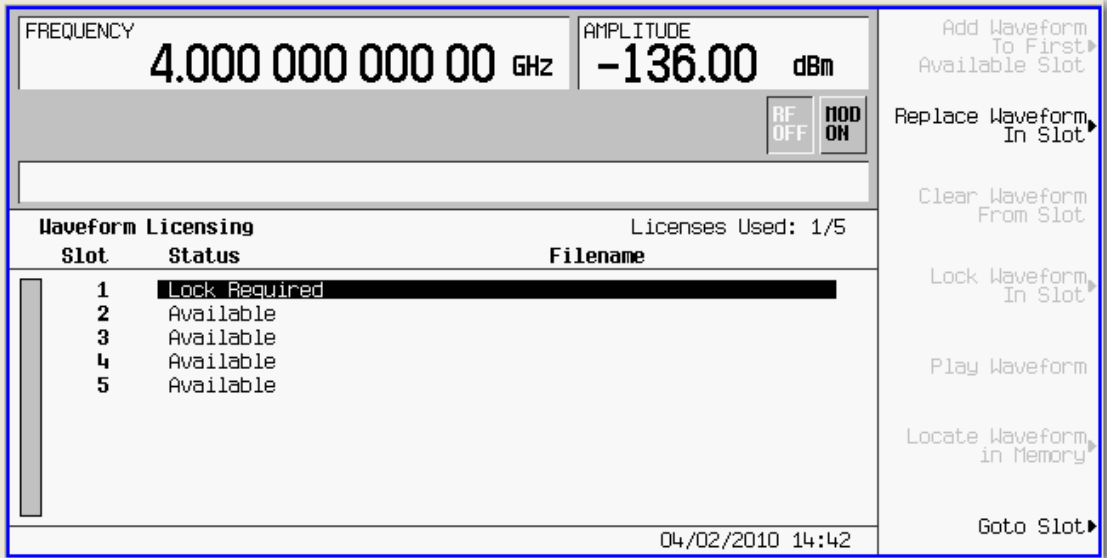
<b>FREQUENCY</b>	<b>AMPLITUDE</b>	<b>Lock In Slot</b>
6.000 000 000 00 GHz	-144.00 dBm	Confirm Locking Waveform
I/Q ARB		
<p><b>*** Waveform Lock Warning! ! ! ***</b></p> <p>Once a waveform is locked it will use up an available license slot and it can not be un-locked. Be sure that you want to lock this waveform.</p> <p><b>Important! Keep a backup copy of the waveform elsewhere in case you delete all files in Int Storage.</b></p>		
*** PROTO CODE ** NOT FOR CUSTOMER USE ***		03/31/2010 17:03

10. Your waveform file is now locked to a 5- or 50-pack slot and permanently licensed to your instrument.

<b>FREQUENCY</b>	<b>AMPLITUDE</b>	<b>WFN Licensing</b>																																												
6.000 000 000 00 GHz	-144.00 dBm	Add Waveform To First Available Slot																																												
I/Q ARB		Replace Waveform In Slot																																												
<table border="1"> <thead> <tr> <th>Waveform Slot</th> <th>Licensing Status</th> <th>Filename</th> <th>Licenses Used: 4/50</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Locked 03/30/2010</td> <td>50PK3GPP</td> <td></td> </tr> <tr> <td>2</td> <td>Remaining Trial Time 18:06</td> <td>PK50A</td> <td></td> </tr> <tr> <td>3</td> <td>Remaining Trial Time 19:59</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Locked 03/31/2010</td> <td>N7601B-1</td> <td></td> </tr> <tr> <td>5</td> <td>Available</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Available</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>Available</td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>Available</td> <td></td> <td></td> </tr> <tr> <td>9</td> <td>Available</td> <td></td> <td></td> </tr> <tr> <td>10</td> <td>Available</td> <td></td> <td></td> </tr> </tbody> </table>		Waveform Slot	Licensing Status	Filename	Licenses Used: 4/50	1	Locked 03/30/2010	50PK3GPP		2	Remaining Trial Time 18:06	PK50A		3	Remaining Trial Time 19:59			4	Locked 03/31/2010	N7601B-1		5	Available			6	Available			7	Available			8	Available			9	Available			10	Available			Clear Waveform From Slot
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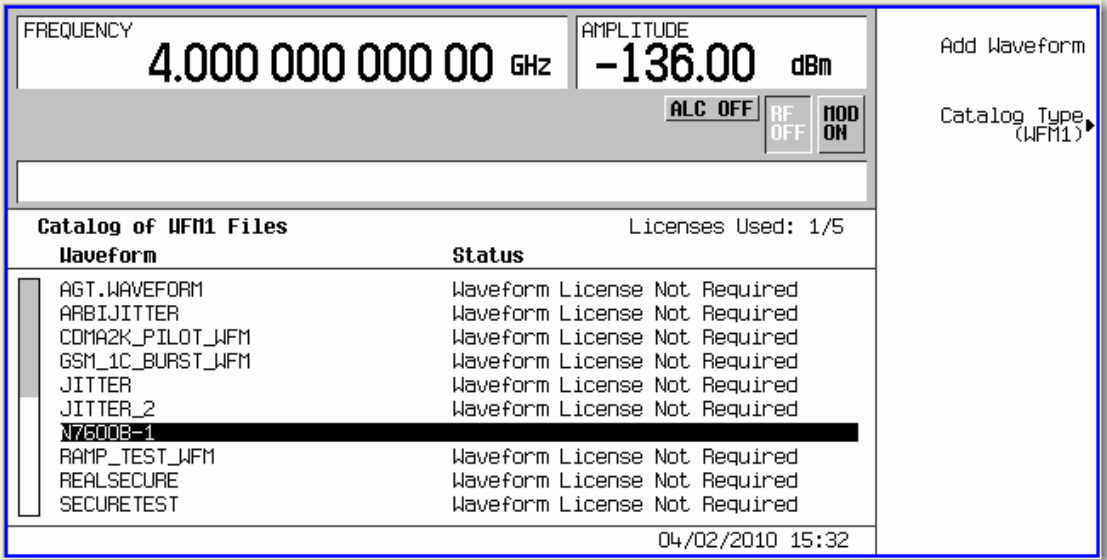
**On the ESG**

1. Press **Local** to unlock the instrument from remote operation.
2. Press **Mode > Dual ARB > Waveform Licensing**. The following screen appears, showing occupied and available waveform slots for your instrument's 5- or 50-pack license.

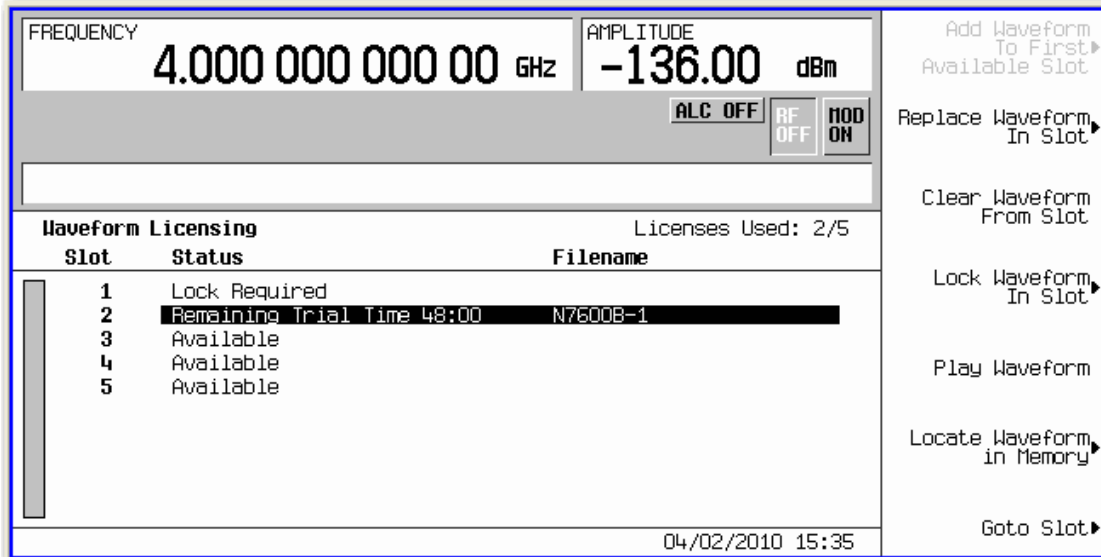


3. Use the arrow keys or front panel knob to highlight the first available slot. and press **Add Waveform To First Available Slot**. You can also select an occupied waveform slot and then press **Replace Waveform In Slot**. This allows you to use the remaining trial time for that slot on your waveform.

In either case, a screen appears, showing the available files stored in volatile waveform memory (WFM1). The waveform file you created and downloaded with the Signal Studio software should now reside here.

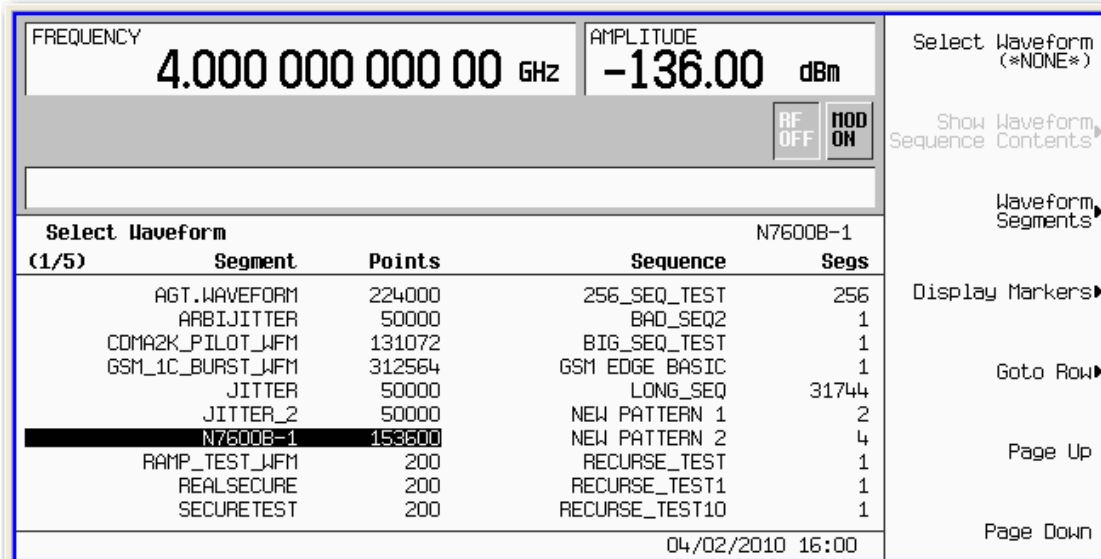


- Use the arrow keys or front panel knob to find your waveform file and press **Add Waveform**. Notice that you have 48 hours remaining to fully evaluate the waveform. The trial time applies to individual slots. Once a waveform is added to a slot, the trial time for that slot begins counting down and cannot be reset. During the trial time, you can replace and evaluate waveforms in a slot as many times as you like. At the end of the trial time, however, you can no longer play the waveform in that slot unless you license (lock) it to that slot. You can, however, still replace files in an expired, unlocked slot.



- To playback the waveform for evaluation, press **Mode > Dual ARB > Select Waveform** and use the arrow keys or front panel knob to find your waveform file.

**NOTE:** The instrument's user interface uses the term *segment* to refer to a waveform file.



- Press **Select Waveform > ARB Off On to On**. Set your frequency and amplitude for the carrier as you like and then press **RF On/Off to On**. You can now evaluate the waveform in your specific test scenario.
- Prior to licensing (locking) your waveform file, you must save it to the instrument's non-volatile waveform memory (NVWFM). Press **Mode > Dual ARB > Select Waveform > Waveform Segments > Load Store to**

**Store** and use the arrow keys or front panel knob to select your waveform. Then press **Store Segment to NVWFM**. If you do not save your waveform file to internal storage, you will be prompted to do so when you attempt to license the waveform file.

WFM1 (1/2)	Segment	Points	WUWFM (1/2)	Segment	Points
	AGT.WAVEFORM	224000		AGT.WAVEFORM	224000
	ARBIJITTER	50000		ARBIJITTER	50000
	CDMA2K_PILOT_WFM	131072		CDMA2K_PILOT_WFM	131072
	GSM_1C_BURST_WFM	312564		GSM_1C_BURST_WFM	312564
	JITTER	50000		JITTER	50000
	JITTER_2	50000		JITTER_2	50000
	<b>N7600B-1</b>	<b>153600</b>		<b>N7600B-1</b>	<b>153600</b>
	RAMP_TEST_WFM	200		REALSECURE	200
	REALSECURE	200		SECURETEST	200
	SECURETEST	200		WCDMA3GPP_WAVEFORM	268800

- 8. To license the waveform into a 5- or 50-pack slot, press **Mode > Dual ARB > Waveform Licensing** and use the arrow keys or front panel knob to select your waveform file's slot.

Slot	Status	Filename
1	Lock Required	
2	Remaining Trial Time 47:24	N7600B-1
3	Available	
4	Available	
5	Available	

- Press **Lock Waveform In Slot**. A warning message appears. Press **Confirm Locking Waveform**.

FREQUENCY 2.000 000 000 00 GHz AMPLITUDE -10.00 dBm

ARB ENULP I/Q RF ON MOD ON

**\*\*\* Waveform Lock Warning!!! \*\*\***

Once a waveform is locked it will use up an available license slot and it can not be un-locked. Be sure that you want to lock this waveform.

**Important! Keep a backup copy of the waveform elsewhere in case you delete all files in Int Storage.**

04/02/2010 16:15

Confirm Locking Waveform

- Your waveform file is now locked to a 5- or 50-pack slot and permanently licensed to your instrument.

FREQUENCY 2.000 000 000 00 GHz AMPLITUDE -10.00 dBm

ARB ENULP I/Q RF ON MOD ON

**Waveform Licensing** Licenses Used: 2/5

Slot	Status	Filename
1	Lock Required	
2	Locked 04/02/2010	N7600B-1
3	Available	
4	Available	
5	Available	

04/02/2010 16:17

Add Waveform To First Available Slot  
 Replace Waveform In Slot  
 Clear Waveform From Slot  
 Lock Waveform In Slot  
 Play Waveform  
 Locate Waveform in Memory  
 Goto Slot

Revised 4/6/2009

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