

# Installation Note

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## Option 006 6 GHz Operation Upgrade Kit

For 8753E and 8753ES Network Analyzers

<b>Network Analyzer Model Number</b>	<b>Applicable Upgrade Kit Model Number</b>
8753E	8753EU Option 006
8753ES	8753ESU Option 006



Part Number 08753-90417 Supersedes December 1999

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## 6 GHz Operation Upgrade Kit

Products Affected: .....	8753E except Option 011 and Option 075 8753ES except Option 011 and Option 075
To Be Performed By: .....	Personnel Qualified by Agilent
Estimated Installation Time: .....	30 minutes
Estimated Verification Time: .....	2.0 hours (includes instrument warmup time)

### Purpose

This Option 006 upgrade kit provides the network analyzer with 6 GHz operation. The upgrade kit is keyed to the serial number of a specific network analyzer and cannot be used to upgrade other instruments.

### Items Included in the Kit

Table 1 describes the parts included in this upgrade kit. Check the contents of this kit against Table 1.

**Table 1**                      **Option 006 Upgrade Kit Contents**

Quantity	Description	Part Number
1	6 GHz source assembly	08753-60146
1	Keyword label (attached to <a href="#">page 6</a> )	9320-6215
1	Keyword label (to affix to instrument)	9320-5805
1	Installation note	08753-90417
1	6 GHz nameplate	08753-80157 (8753E only)
1	6 GHz nameplate	08753-80205 (8753ES only)
1	Envelope	9230-0023

## Equipment and Tools Required

**Table 2 Required Equipment and Tools**

<b>Item</b>	<b>Part or Model Number</b>
Power meter	436A/437B/438A or E4418B/E4419B
Power sensor	8482A
Power sensor	8481A
Frequency counter	5350B
Cable, 24 inch APC-7 (2)	8120-4779
Cable, 50 ohm, Type-N (m) to Type-N (m), 24 inch	8120-4781
Cable, BNC-to-BNC	8120-1840
Adapter, APC-7 to N(f)	11524A
Adapter, APC-7 to 3.5 mm (m)	1250-1746
Adapter, APC-7 to 3.5 mm (f)	1250-1747
Adapter, BNC-Alligator clip	8120-1292
Adapter, APC-3.5 (f) to Type-N (f)	1250-1745
Adapter, BNC (m) to Type-N (f)	1250-1477
GPIB cable assembly	10833A
Low pass filter	360B/C ( $f_c = 1.2/2.2$ GHz)
Fixed attenuator, 20 dB (2)	8492A Option 020
Small needle-nose pliers	
T-10 TORX screwdriver	
T-15 TORX screwdriver	
T-20 TORX screwdriver	
5/16 inch open-end wrench	
5/16 inch torque wrench (10 in-lbs)	
Electrostatic discharge (ESD) grounding wrist strap and mat	
8753E Network Analyzer Service Guide (required for upgrades to 8753E models only)	08753-90374
8753ET/ES Network Analyzer Service Guide (required for upgrades to 8753ES models only)	08753-90484

## Safety Considerations

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**WARNING**      **Before you disassemble the instrument, turn the power switch OFF and unplug the instrument. Failure to unplug the instrument can result in personal injury.**

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**CAUTION**      Electrostatic discharge (ESD) can damage or destroy electronic components. Perform these procedures only at a static-safe workstation and wear a grounding strap. Refer to the documentation that pertains to your instrument for information about static-safe workstations and ordering static-safe accessories.

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## Conventions

This installation note uses the following conventions for front-panel keys and softkeys.

**Front-Panel Key** represents a key physically located on the instrument. **SOFTKEY** represents a “softkey,” a key whose label is determined by the instrument’s firmware.

## Installation Procedure for the Option 006 Upgrade Kit

The network analyzer must be in proper working condition prior to installing this option. Any necessary repairs must be made before proceeding with this installation.

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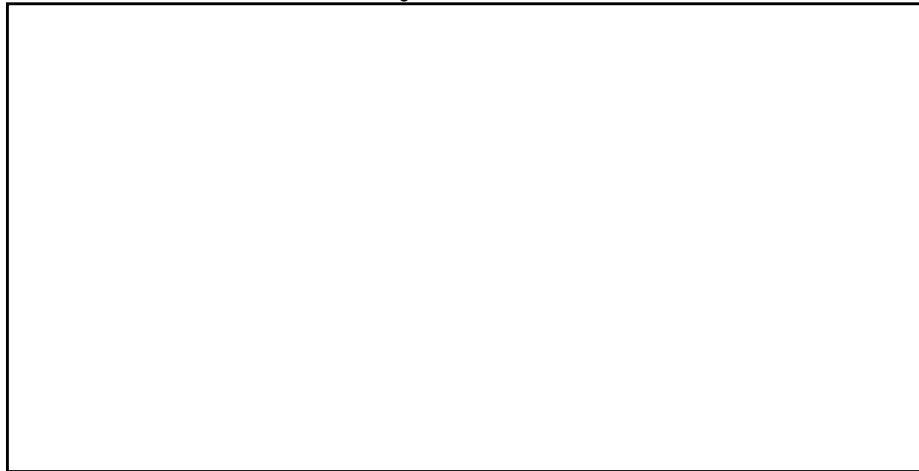
**NOTE**            The 8753E network analyzer is shown in the illustrations of this installation procedure. If you have an 8753ES network analyzer, the details of these illustrations may vary slightly. However, these slight differences will not affect the procedures of this installation.

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### Verify the Serial Number

Refer to the keyword label in the box below. First, verify that the analyzer's serial number matches the serial number on the keyword label. Second, verify that the option number on the keyword label matches the option number for this installation note. If in either step, the serial number or the option number does not match the expected results, the keyword will not enable the option. If this is the case, refer to [Table 3 on page 13](#) and contact the nearest sales or service office for assistance.

#### Keyword Label

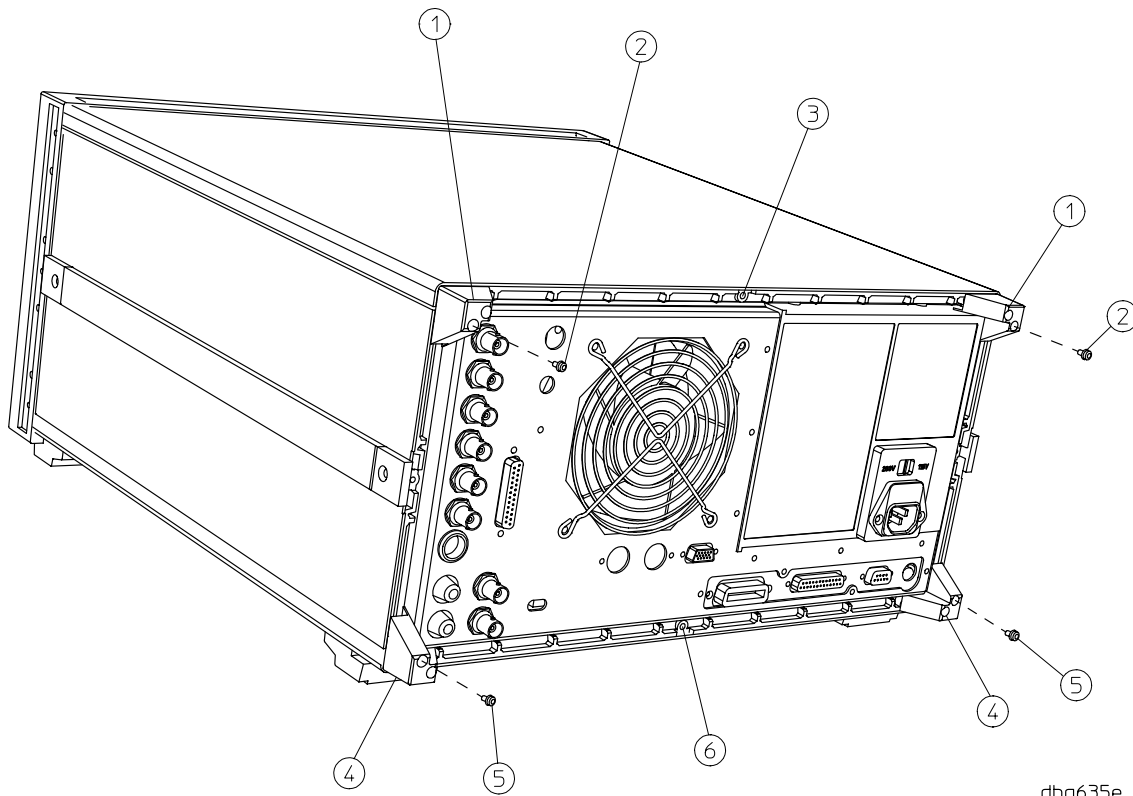


## Remove the Top Cover

Refer to *Figure 1*.

1. Disconnect the power cord.
2. Remove both of the upper rear feet (item 1) by loosening the TORX T-10 screws (item 2).
3. Loosen the top cover screw (item 3).
4. Slide the cover off towards the rear of the analyzer.

**Figure 1** Cover and Feet Removal



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## Remove the 3 GHz Source Assembly

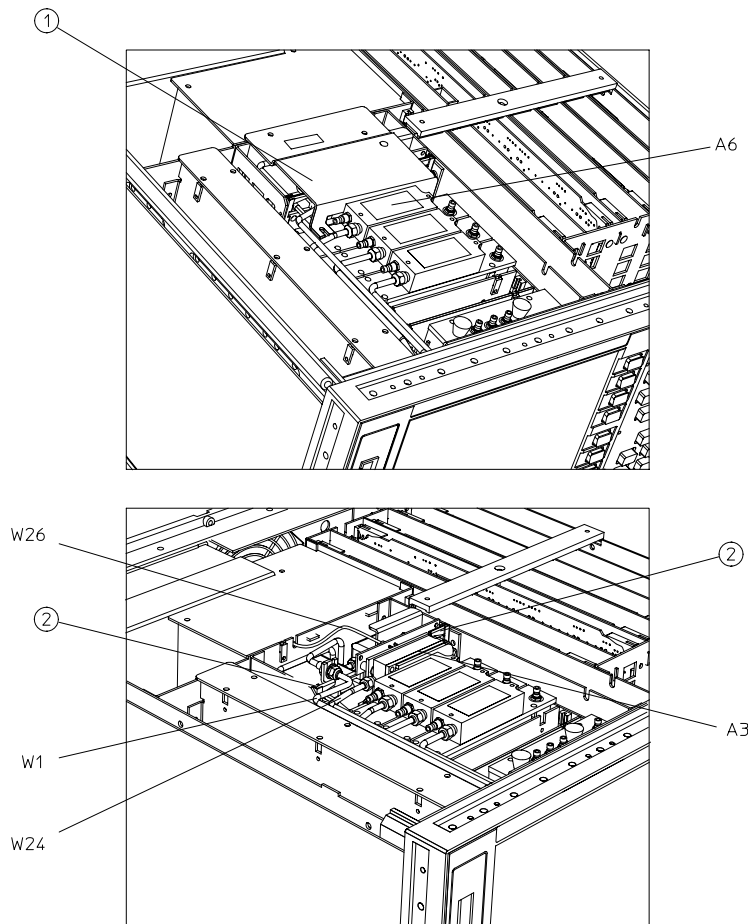
Refer to [Figure 2](#).

5. Remove the source bracket (item 1) by removing four screws.

**NOTE** It might be necessary to disconnect the flexible cable from A6 (the sampler next to the source assembly). To disconnect the cable, use a small needle-nose pliers to grasp the metal connector of the cable and carefully loosen it from its mating connector on A6. See item 7 of [Figure 3](#).

6. Disconnect the semirigid cable W1.
7. Lift the two retention clips (item 2) at the front and rear of the source assembly to an upright position.
8. Move W1 to the side while lifting the source high enough to provide wrench clearance for W24. To lift the A3 source assembly, use the source bracket handle (item 3, [Figure 3](#)).
9. Disconnect the semirigid cable W24.
10. Remove the source assembly from the instrument.

**Figure 2 A3 Source Assembly**



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## Installing the 6 GHz Source Assembly

Refer to *Figure 3*.

11. Check the connector pins to the motherboard before reinstallation.
12. Slide the edges of the sheet metal partition (item 4) of the 6 GHz assembly into the guides at the sides of the source compartment.
13. Press down on the module to ensure that it is well seated in the motherboard connector.

Refer to *Figure 2*.

14. Push down the retention clips. Connect the two semirigid cables (W1 and W24) and one flexible cable (W26) to the source assembly.

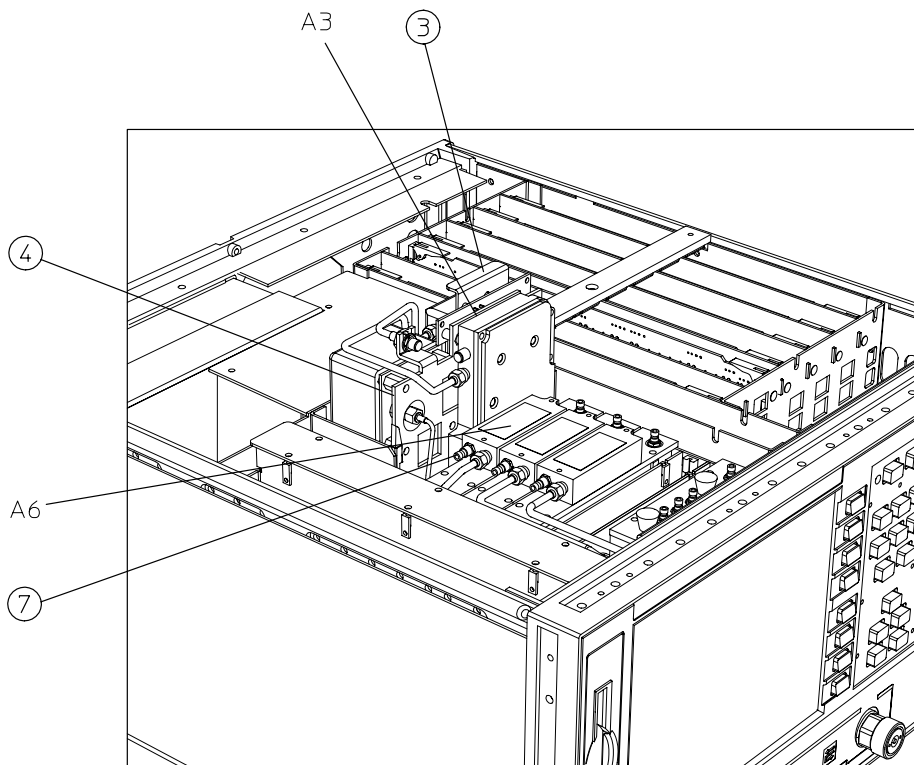
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**NOTE** When connecting semirigid cables, it is recommended that the connections be torqued to 10 in-lb.

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15. Reinstall the source bracket.
16. Reconnect the flexible cable to A6 and ensure that it is seated properly.

**Figure 3 A3 Source Assembly**



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## Configure the Analyzer for 6 GHz Operation

Refer to [Figure 1](#).

17. Remove the instrument bottom cover.

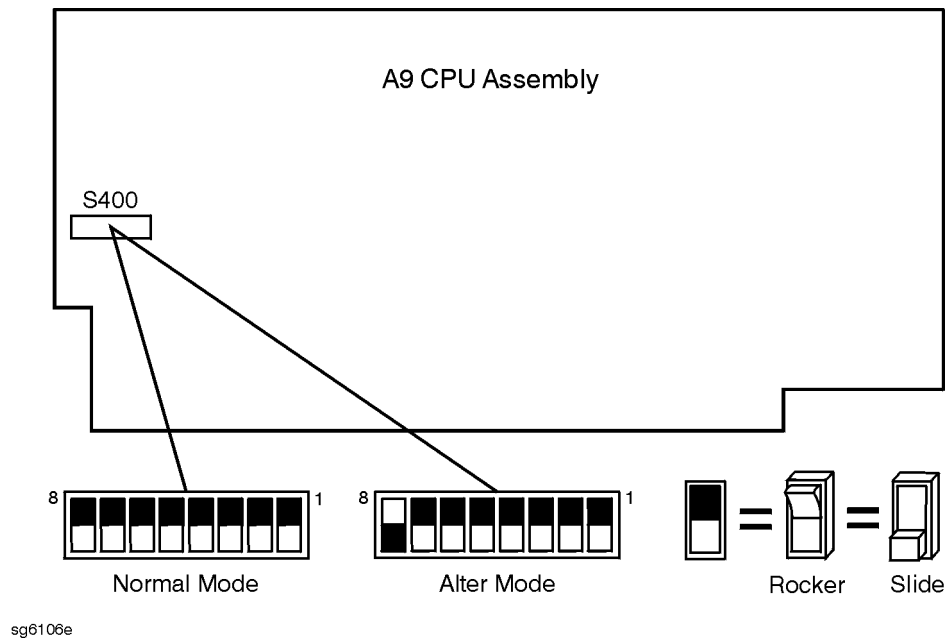
- a. Remove both lower rear feet (item 4) by loosening the TORX T-10 screws (item 5).
- b. Loosen the bottom cover screw (item 6).
- c. Slide the cover off towards the rear of the analyzer.

Refer to [Figure 4](#).

18. Locate the A9 switch on the A9 CPU assembly at location S400.

19. Set the A9 switch to Alter Mode.

**Figure 4 A9 Switch Location**



20. Reinstall the top and bottom covers.

21. Reconnect the analyzer power cord and switch on the power.

22. Press **Preset** **Display** **MORE** **TITLE** **ERASE TITLE** to erase the logo.

23. Enter the keyword from the label located on page 6. Use a keyboard attached to the analyzer or rotate the front panel knob to position the arrow below each character of the keyword. Press **SELECT LETTER** to enter each character. When all characters are entered, press **DONE**.

**NOTE** *Be sure to use upper-case letters when entering via a keyboard.*

24. Press **(System)** **SERVICE MENU** **TESTS** **(56)** **(x1)**. At the prompt, press **EXECUTE TEST** **YES** .

The analyzer will display **Option Cor DONE** when the test is complete.

25. Press **RETURN** **TESTS** **(44)** **(x1)**. At the prompt, press **EXECUTE TEST** **YES** .

The analyzer will display **\*Source Def DONE** when the test is complete.

26. Press **RETURN** **TESTS** **(45)** **(x1)**. At the prompt, press **EXECUTE TEST** **YES** .

The analyzer will display **\*Pretune Def DONE** when the test is complete.

27. Press **RETURN** **TESTS** **(46)** **(x1)**. At the prompt, press **EXECUTE TEST** **YES** .

The analyzer will display **ABUS Cor DONE** when the test is complete.

28. Press **RETURN** **TESTS** **(48)** **(x1)**. At the prompt, press **EXECUTE TEST** **YES** .

The analyzer will display **Pretune Cor DONE** when the test is complete.

29. Refer to "Adjustments and Correction Constants" in the network analyzer's service guide. After the required warmup time, perform the following adjustments:

- RF Output Power Correction Constants
- Sampler Magnitude and Phase Correction Constants
- Cavity Oscillator Frequency Correction Constants
- Source Spur Avoidance Tracking Adjustment
- EEPROM Backup Disk Procedure

30. Refer to "System Verification and Performance Tests" in the network analyzer's service guide and perform the following system tests:

- For 8753E, perform:
  - Test Port Output Frequency Range and Accuracy
  - Test Port Output Power Accuracy
  - Test Port Output Power Range and Linearity
  - Test Port Output/Input Harmonics (required only for analyzers with Option 002)
- For 8753ES, perform:
  - Test Port Output Frequency Range and Accuracy
  - Test Port Output Power Level Accuracy
  - Test Port Output Power Linearity
  - Test Port Output/Input Harmonics (required only for analyzers with Option 002)

31. Switch off the analyzer and disconnect the power cord.

Refer to *Figure 1*.

32. Remove the instrument top and bottom covers.

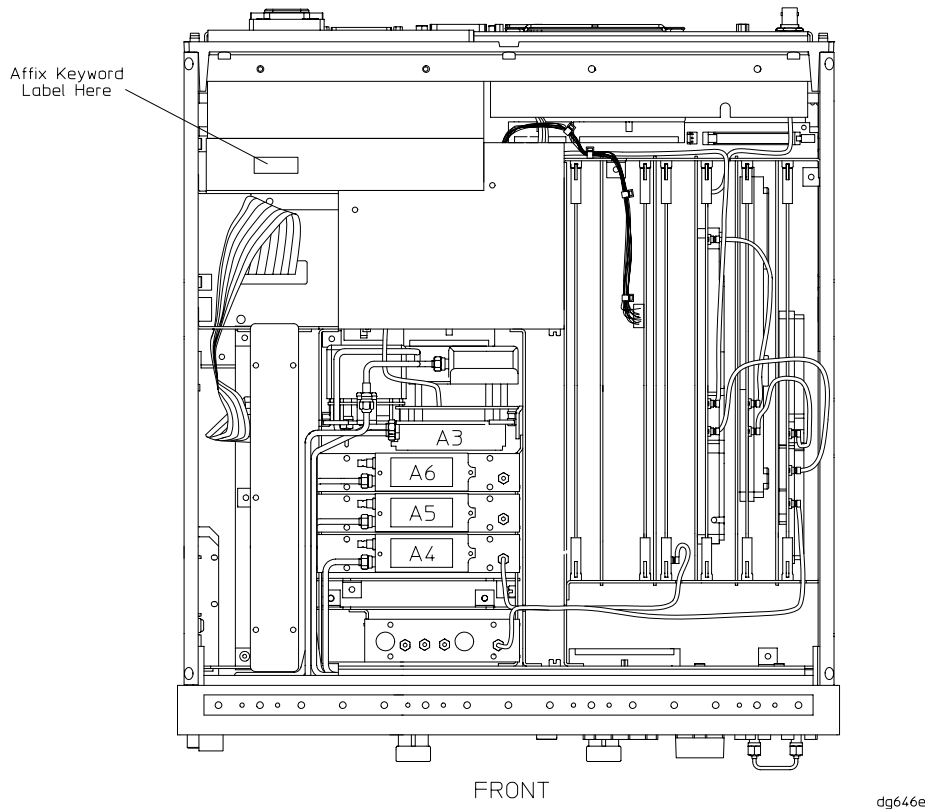
Refer to [Figure 4](#).

33. Set the A9 switch to Normal Mode.

### Affix the Keyword Label

34. Locate the keyword label in the small envelope and remove it from its backing. Affix the label onto the location shown in [Figure 5](#).

**Figure 5** Location of Keyword Label, Top View of Analyzer



### Reassemble the Instrument

Refer to [Figure 1](#).

35. Replace the instrument top and bottom covers and feet by reversing the order of removal.

### Replace the Analyzer's Nameplate

36. Use a sharp knife to carefully peel away the old nameplate located on the analyzer's front panel.

37. Adhere the new nameplate, which is included in the upgrade kit.

**Table 3 Agilent Technologies Sales and Service Offices**

<b>Online assistance:</b> <a href="http://www.agilent.com/find/assist">www.agilent.com/find/assist</a>	
<b>United States</b> (tel) 1 800 452 4844	<b>Latin America</b> (tel) (305) 269 7500 (fax) (305) 269 7599
<b>Canada</b> (tel) 1 877 894 4414 (fax) (905) 206 4120	<b>Japan</b> (tel) (81) 426 56 7832 (fax) (81) 426 56 7840
<b>Europe</b> (tel) (31 20) 547 2323 (fax) (31 20) 547 2390	<b>Australia</b> (tel) 1 800 629 485 (fax) (61 3) 9210 5947
<b>Online assistance:</b> <a href="http://www.agilent.com/find/assist">www.agilent.com/find/assist</a>	
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<b>Canada</b> (tel) 1 877 894 4414 (fax) (905) 206 4120	<b>Japan</b> (tel) (81) 426 56 7832 (fax) (81) 426 56 7840
<b>Europe</b> (tel) (31 20) 547 2323 (fax) (31 20) 547 2390	<b>Australia</b> (tel) 1 800 629 485 (fax) (61 3) 9210 5947