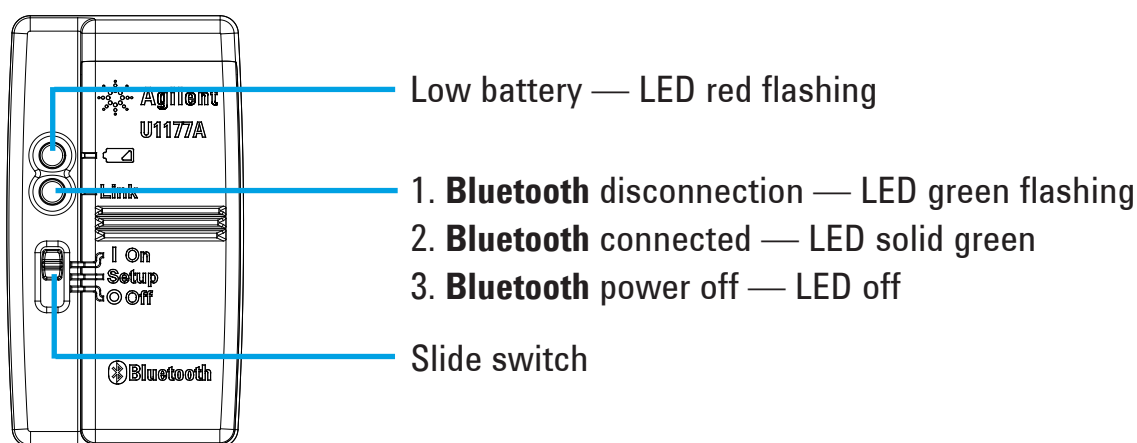# Agilent U1177A IR-to-Bluetooth Adapter
Operating Instructions

The Agilent U1177A IR-to-**Bluetooth**®[1] adapter is designed for the use of Agilent handheld digital multimeter (DMM) only where it allows **Bluetooth** communication between the meter and PC. The U1177A is powered by two AAA batteries, able to operate about 30 hours on new alkaline batteries, and provides up to 10-metres connectivity solution.

Front View
LED Indicator and Slide Switch

Low battery — LED red flashing

1. **Bluetooth** disconnection — LED green flashing
2. **Bluetooth** connected — LED solid green
3. **Bluetooth** power off — LED off

Slide switch

Standard Shipped Items Checklist

The following items are included when you make a purchase:
- U1177A IR-to-**Bluetooth** adapter
- Two 1.5 V AAA batteries
- Operating Instructions (this sheet)

Assistance

For technical assistance, contact your nearest Agilent Sales Office or visit the Agilent website at www.agilent.com/find/assist for further information.

[1] The **Bluetooth**® word mark and logos are registered trademark owned by **Bluetooth** SIG, Inc and any use of such marks by Agilent is under license. Other trademark and trade names are those of their respective owners.

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Product Characteristics

OPERATING ENVIRONMENT: Operating temperature from –20 °C to 55 °C

STORAGE ENVIRONMENT: Storage temperature from –40 °C to 70 °C

RELATIVE HUMIDITY (R.H.): Relative humidity up to 95% at 40 °C (non-condensing)

POWER CONSUMPTION: Maximum 130 mVA for two 1.5 V AAA batteries

BATTERY TYPE: Alkaline 24 A (ANSI/NEDA) and LR03 (IEC), or Zinc Chloride 24 D (ANSI/NEDA) and R03 (IEC).

DIMENSION (W × L × H): 39.0 mm × 71.0 mm × 37.0 mm

WEIGHT: 60 g with battery

WARRANTY: Three months

BLUETOOTH: Bluetooth Version 2.1 + EDR compliant, SPP profile, Class 2 device

SAFETY: The U1177A complies with the requirements of the following safety standards:

- FCC Part15C (Certification) (15.209, 15.247) FCC ID: ZKMAGILENT–U1177A
- FCC Part15B (15.109)
- RSS–210 Issue 8:2010 IC: 6310A–U1177A
- ICES–003 Issue 4:2004
- EN 300 328 V1.7.1:2008
- EN 301 489–1V1.8.1:2008/–17 V2.11:2009
- EN 55022:2006+A1:2007/EN55024:1998+A1:2001+A2:2003
- EN 50371:2002
- EN 60950–1:2006/A11:2009/A1:2010

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

The term "IC" before the radio certification number only signifies the device meets industry Canada technical specifications.

Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

NOTE: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. To comply with the RF exposure compliance requirements, this device and its antenna must not be co-located or operating to conjunction with any other antenna or transmitter.

Le terme « IC » qui figure devant le numéro de certification radio signifie seulement que le périphérique est conforme aux spécifications techniques imposées par Industrie Canada.

Son fonctionnement est soumis aux deux conditions suivantes :

1. ce périphérique ne doit pas provoquer d'interférences, et
2. ce périphérique doit accepter toutes les interférences, y compris celles qui pourraient entraîner un fonctionnement inopportun.

Les changements ou modifications qui ne sont pas expressément approuvés par la partie responsable de la conformité sont susceptibles d'annuler le droit de l'utilisateur à se servir de l'équipement. Pour être conformes aux exigences de conformité en matière d'exposition aux fréquences radio, ce périphérique et son antenne ne doivent pas être installés au même endroit ni être utilisés en conjonction avec une autre antenne ou un autre transmetteur.

NOTE

- Do not open the plastic case unnecessarily. Doing so may cause damage to the plastic case.
- Keep the adapter away from getting wet.
- Ensure the adapter is turned OFF and the battery cover is removed when replacing the batteries.
- The batteries must be recycled or disposed properly after depletion.
- Remove the batteries when not using the adapter for a long time.
- If the LED is not lighted when turned on, replace the batteries with new specified batteries.
- The adapter can only be used with Agilent handheld digital multimeters.

Configuration

Table below shows you the default configurations for the U1177A.

Parameters	Default Configurations
PIN code	1234
Baud rate	9600
Data bit	8
Parity	None
Stop bit	1
Deep sleep timer	900 seconds
Mode	Discoverable

Setup U1177A with Computer Bluetooth Connection

Before you begin, make sure the **Bluetooth** connection on your PC is enabled.

1. Set the U1177A slide switch to **On**.
2. From your PC, go to **Start** > **My Computer** > **My Bluetooth Places**.
3. Click **Add a Bluetooth Device** to open the Bluetooth Setup Wizard.
4. Click **Next>.** The Bluetooth Device Selection will display a list of bluetooth devices.
5. Select **Agilent U1177A-XXXXXX**—the XXXXXX represents U1177A device ID —and click **Next>**.
6. In the Pair Now tab, type the default **Bluetooth** security code "1234" and click **Pair Now**.
7. Once pairing is successful, check **SPP** as your selected **Bluetooth** service and click **Next>.**
8. A shortcut display notification pop-up window will appear. Click **OK**.
9. Upon completion of the Bluetooth Setup Wizard, rename the device if required.
10. Click **Finish** to complete the connection**.** The **U1177A-XXXXXX** is now added and connected successfully.
11. If you already had the U1177A added in My Bluetooth Places, double-click U1177A to establish a wireless serial connection with your remote multimeter.
12. Double-click the U1177A again to disconnect the wireless serial connection.

NOTE
In some cases, the Bluetooth Device Manager will create two COM ports. Use the COM port with "Outgoing" label only.

Operation

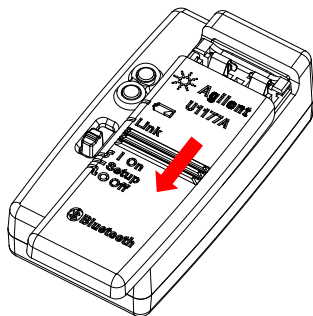### Connect Your U1177A Adapter to the Multimeter
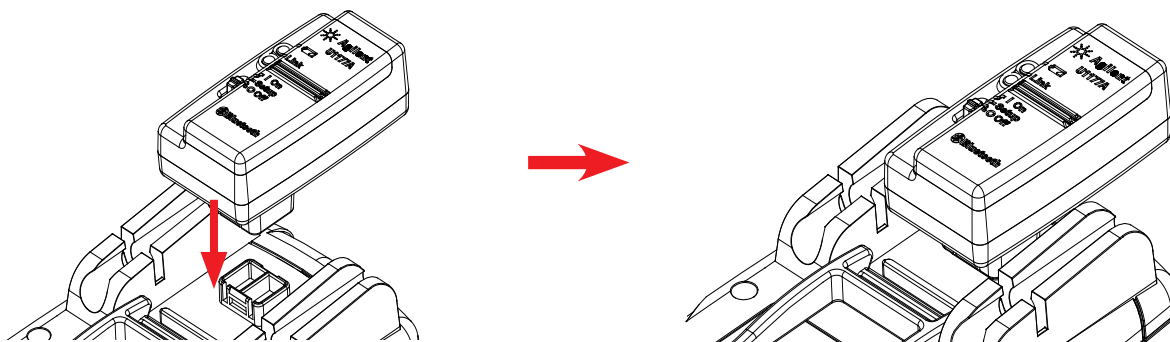
Snap the optic side of the U1177A to the multimeter IR communication port.
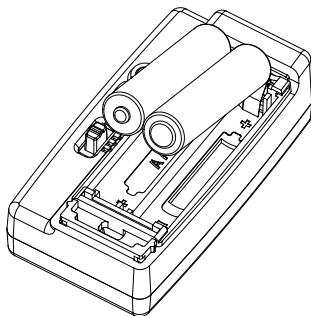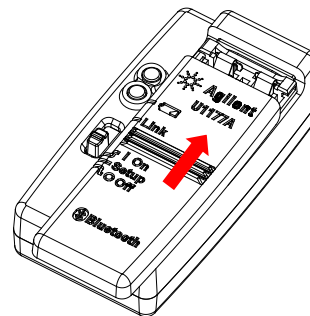
Install and Replace the Batteries

NOTE	Make sure you turn off the U1177A before installing or replacing the batteries.

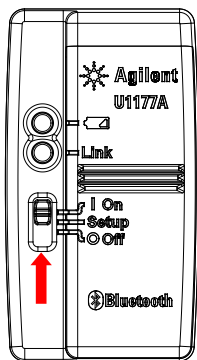1. Slide the battery cover away from adapter's body.
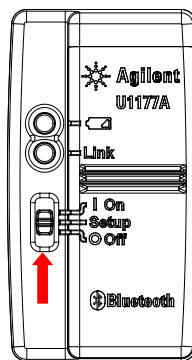
2. Insert the battery.

3. Reverse the sliding position to close the battery cover.
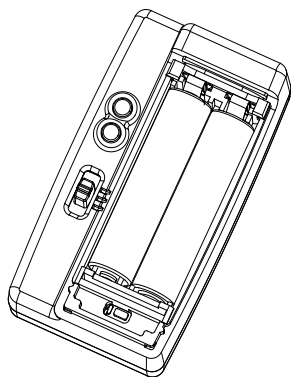
Turn On the U1177A

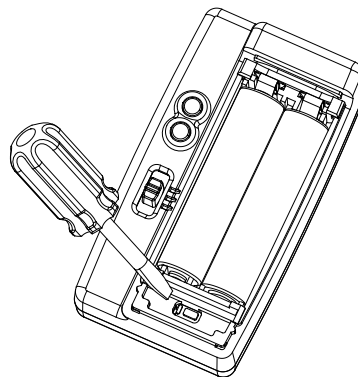Set the slide switch to **On**.

Configure the U1177A

Set the slide switch to **Setup**.

Reset the U1177A

1. Open the battery cover. Then, set the slide switch to **Setup**.

2. Use a flat-blade screwdriver to push the button located in the hole for around three seconds.

Connect Multimeter to Agilent GUI Data Logger via U1177A

1. Open the Agilent GUI Data Logger.
2. In the Communication Setting panel, the setup mode is set to Auto by default. Click **Connect Meter** to establish the multimeter connection.
3. The multimeter will remain connected until the COM port is closed or the U1177A is turned off.

NOTE	• If you wish to setup the multimeter connection manually, select Manual from the Communication Setting panel. Make sure you select the COM port your multimeter is connected and set the baud rate, parity, and data bit to the default configuration.
	• Only one host computer is able to connect the U1177A at a time.

Configure U1177A Remotely via Hyper Terminal

Hyper Terminal is a program that enables you to configure your U1177A remotely using the AT commands—in this case via **Bluetooth** connection.

NOTE	Before you begin, make sure the **Bluetooth** connection on your PC is enabled.

1. Set the U1177A slide switch to **Setup**.
2. From your PC, go to **Start** > **All Program** > **Accessories** > **Communication** > **Hyper Terminal**.
3. Set your telnet program. You may choose to set Hyper Terminal as your default telnet program.
4. Create a new connection for your U1177A. Go to **File** > **New Connection.** In the Connection Description window, type U1177A and select the appropriate icon. Click **OK**.
5. The Connect To window will be displayed. Go to Connect using and select a COM from the drop-down list. Click **OK**.
6. The COM port settings is displayed. Set the parameters accordingly as below and click **OK**.
   - Bit = 9600
   - Data Bit = 8
   - Parity = None
   - Stop Bit = 1
   - Flow Control = None
7. Configure or retrieve information from your U1177A using the AT command list.

AT Command List

Command	Usage Description
ATG Power Management Control	This command controls the deep sleep timer. The U1177A will enter deep sleep mode and turn off all the LEDs when there is no event activity. The timer will restart once an event interupt the timer. The U1177A will wake up once the UART received a proper signal.
	Modifier — **Description**
	ATG=xxxxx • Set the deep sleep timer in seconds • xxxxx can be set in the range of 60 to 65535. The accuracy is ±2 seconds. • Set G=0 will disable the timer • Default value = 900
	ATG0 — Disable wake up from UART. Changes to this setting may lead to system reboot.
	ATG1 (Default) — Enable wake up from UART. Changes to this setting may lead to system reboot.
	ATG? — Acquire current settings

Command	Usage Description
ATI Information	This command allows you to acquire information.
	Modifier — **Description**
	ATI0 — Acquire the firmware version
	ATI1 — Acquire the setting list
	ATI2 — Acquire the RSSI at online command mode

Command	Usage Description
ATL Baud Rate Control	This command sets the baud rate for the COM port.
	Modifier — **Description**
	ATL1 (Default) — Set baud rate to 9600 bps
	ATL2 — Set baud rate to 19200 bps
	ATL? — Acquire the current baud rate setting

Command	Usage Description
ATP Set PIN Code	This command sets the PIN number for your device. It can be used to control the PIN code authorization to Off. Default PIN = 1234.
	Modifier — **Description**
	ATP=xxxx (Default) • Set PIN number. • xxxx can be set in the range of 4 numeric digits
	ATP0 — Turn off the PIN code authorization
	ATP? — Acquire the current PIN code setting

Command	Usage Description	
ATZ Restore	This command reboots and restores the device to default setting.	
	Modifier	**Description**
	ATZ0	Set device to default setting

AT Command Examples

ATG=60   // Set the deep sleep timer to 60 seconds
ATI2   // Acquire the RSSI at online command mode
ATL2   // Set the baud rate to 19200 bps
ATP=8080   // Set the PIN number to 8080
ATZ0   // Set the device to default setting

Maintenance

If any part of the adapter is worn out or damage, replace it with a new U1177A adapter.

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