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7 x 9 inches (178 mm x 229 mm)

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Medtronic Neuromodulation Clinician Programmer   8880CW

Programmer

and Model 8880T2 Telemetry Head

Technical Manual

! USA   Rx only

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Label symbols

Explanation of symbols on products and packaging. Refer to the appropriate product to see symbols that apply.

	Consult instructions for use
	Temperature limitation
	Conformité Européenne (European Conformity). This symbol means that the device fully complies with AIMD Directive 90/385/EEC (NB 0123) and R&TTE Directive 1999/5/EC.
	Manufacturer
EC REP	Authorized representative in the European community
! USA	For USA audiences only
	Non-ionizing electromagnetic radiation
	IEC 60601-1/EN60601-1, Type BF Equipment
	Medical – General Medical Equipment as to electrical shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES 60601-1 and CAN/CSA C22.2 No. 60601-1.
	Do not dispose of this product in the unsorted municipal waste stream. Dispose of this product according to local regulations. See http://recycling.medtronic.com for instructions on proper disposal of this product.
	Magnetic Resonance (MR) Unsafe
	Chinese Standard (SJ/T11364-2006) Logo: Electronic Information Products Pollution Control Symbol. (The date in this logo means the environmental protection use period of the product.)
	Package contents:
SN	Serial number
REF	Product number or Catalog number
PIN No.	PIN number
LOT	Lot number

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Bluetooth® is a registered trademark of Bluetooth SIG, Inc.

PostScript® (PS) is a trademark of Adobe Systems, Inc., registered in the U.S. and other countries.

PCL® (Printer Command Language) is a registered trademark of Hewlett-Packard Company.

This device complies with Industry Canada license-exempt RSS standard(s). 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.

!USA FCC Information

The following communications regulation information applies to the Model 8880CW Clinician Programmer and the Model 8880T2 Telemetry Head.

FCC ID: LF58880CW and LF58880T2

These devices comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

IMPORTANT: Changes or modifications to these products not authorized by Medtronic, Inc., could void the FCC Certification and negate your authority to operate these products.

FCC Class B

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.

FCC 15.407(e)

According to FCC 15.407(e), the device is intended to operate in the frequency band of 5.15 GHz to 5.25 GHz under all conditions of normal operation. Normal operation of this device is restricted to indoor use only to reduce any potential for harmful interference to co-channel MSS operations.

FCC RF Radiation Exposure

1. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

2. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment.

FCC 95.1215

This transmitter is authorized by rule under the Medical Device Radiocommunication Service (in part 95 of the FCC Rules) and must not cause harmful interference to stations operating in the 400.150 - 460.000 MHz band in the Meteorological Aids (ie, transmitters and receivers used to communicate weather data), the Meteorological Satellite, or the Earth Exploration Satellite Services and must accept

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interference that may be caused by such stations, including interference that may cause undesired operation. This transmitter shall be used only in accordance with the FCC Rules governing the Medical Device Radiocommunication Service. Analog and digital voice communications are prohibited. Although this transmitter has been approved by the Federal Communications Commission, there is no guarantee that it will not receive interference or that any particular transmission from this transmitter will be free from interference.

FCC 95.1217

This device may not interfere with stations operating in the 400.150 - 406.000 MHz band in the Meteorological Aids, Meteorological Satellite, and Earth Exploration Satellite Services and must accept any interference received, including interference that may cause undesired operations.

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Device description

The Medtronic Neuromodulation Model 8880CW Clinician Programmer is a portable device used to program Medtronic Neuromodulation devices. The programmer is equipped with a color touchscreen, Bluetooth® wireless technology, wireless local area network (WLAN) connection, universal serial bus (USB) port, rechargeable battery, and docking capability. Network connectivity is provided so that reports can be printed, saved, or sent via email. Refer to the System Components sheet provided with the programmer for a list of the available system components.

The Medtronic Neuromodulation Model 8880CW Clinician Programmer is intended for use with Medtronic Neuromodulation therapies and devices. The Model 8880T2 Telemetry Head is intended for use in conjunction with the Model 8880CW Clinician Programmer for communication with Medtronic Neuromodulation implantable therapy devices. Refer to specific therapy and device guides for complete information.

Package contents

The programmer package contains:

- One programmer with software

- Three stylus pens

- One rechargeable battery

- One power supply and cord

- Product literature

Note: Some system components, including the telemetry head, are packaged separately from the programmer.

Device specifications

Electrical and operating characteristics

Table 1. Electrical and operating characteristics for the programmer and system components

Description	Specification
Model 8880CW Clinician Programmer	
Power source	Internally powered by a rechargeable lithium ion battery and also powered by mains electricity through a power supply
Operating type	Continuous
Length	255 mm (10 in)

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Table 1. Electrical and operating characteristics for the programmer and system components (continued)

Description	Specification
Width	43 mm (1.7 in)
Height	255 mm (10 in)
Weight (maximum)	1.5 kg (3.3 lbs)
Screen	XGA TFT LCD LED backlit 1024 x 768 pixels 32 bit color Size: 264 mm (10.4 in)
Database encryption method	AES128
Wireless communication types	Bluetooth module integrated circuit # SMWBTM-203B WLAN module supports 802.11 a/b/g/n
Connections	USB port Docking connection
Model 8880T2 Telemetry Head	
Power source	Internally powered by 2 AAA alkaline batteries (nonrechargeable, LR03)
Operating type	Continuous
Length	61 mm (2.4 in)
Width	25 mm (1 in)
Height	155 mm (6.1 in)
Weight	255.14 g (0.56 lb)
Communication types/connections	Bluetooth module integrated circuit # STA2500D Proprietary connector
Model 885010 USB System Connector Cable	
Length	1.83 m (6 ft)
Rechargeable battery	
Type	Lithium-ion 3760 mAH 11.1 Vdc
Chemical class	9
UN classification number	UN3480
Watt-hour rating	42
Charging time	2.5 hours
Run time (maximum)	3.5 to 4.5 hours (Depends on user settings and number of cycles.)
Length	112 mm (4.4 in)
Width	14 mm (0.55 in)
Height	113 mm (4.4 in)
Weight	300 g (0.66 lb)
Power supply	
Input	100-240 VAC, 47-63 Hz, 1.62-0.72 A

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Table 1. Electrical and operating characteristics for the programmer and system components (continued)

Description	Specification
Output	15 V DC, 4.2 A maximum
Length	3 m (approximately 10 ft)
Docking station	
Power source	Mains electricity through a power supply
Operating type	Continuous
Length	264 mm (10.4 in)
Width	49 mm (1.9 in)
Height (with leg pushed in)	282 mm (11.1 in)
Height (cradle only)	241 mm (9.5 in)
Weight	460 g (1 lb)
Connections	Ethernet port (if present) supports 10 megabit per second (Mbps) and 100 Mbps operations VGA output connector (optional) USB port
Video Electronics Standards Association (VESA)/wall or arm mount of cradle	75 mm (2.95 in) x 75 mm (2.95 in)
Battery charger	
Power source	Mains electricity through a power supply
Operating type	Continuous
Input voltage	15 V
Charging method	Constant current and voltage
Charging current	2.3 A
Length	157 mm (6.2 in)
Width	55 mm (2.1 in)
Height	35 mm (1.4 in)
Weight	285 g (0.63 lb)

Storage and operating characteristics

Table 2. Storage and operating characteristics for the programmer and telemetry head

	Storage temperature	Operating temperature
Programmer	–20 ºC (–4 °F) to 60 ºC (140 °F)	0 ºC (32 °F) to 40 ºC (104 °F)
Telemetry head	–40 °C (–40 °F) to 70 °C (158 °F)	10 ºC (50 °F) to 40 ºC (104 °F)

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Declaration of Conformity

Medtronic declares that the Medtronic Neuromodulation Model 8880CW Clinician Programmer, software, and Model 8880T2 Telemetry Head are in conformity with the essential requirements of Directive 1999/5/EC on Radio and Telecommunications Terminal Equipment and Directive 90/385/EEC on Active Implantable Medical Devices.

For additional information, contact the appropriate Medtronic representative listed on the inside back cover of this manual.

Instructions for use

Component identification

Programmer component identification

The front of the programmer is equipped with a color touchscreen display and light-emitting diode (LED) indicators (Figure 1 on page 13). See Table 3 on page 12 for a description of the programmer LED indicators.

The **Power** button is on the left side of the programmer.

The bottom of the programmer is equipped with a power jack, USB port, and docking connector (Figure 2 on page 14).

Note: The USB port on the programmer should only be used to connect a USB flash drive, the USB system connector cable, or a USB printer cable.

The back of the programmer is equipped with a slot for the stylus, camera with light, slot for the rechargeable battery, **Battery Release** button, and speaker (Figure 3 on page 14). Serial number information is also displayed on the back of the programmer.

Table 3. Programmer LED indicators

LED indicator	Behavior	Description
		Bluetooth capability
	Solid blue	The capability of the programmer to use Bluetooth wireless technology is enabled. For more information see "Managing the programmer system" on page 40.
	Off	The capability of the programmer to use Bluetooth wireless technology is disabled. For more information see "Managing the programmer system" on page 40.
		Radio-frequency identification (RFID)
		Feature is reserved for future use.

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Table 3. Programmer LED indicators (continued)

LED indicator	Behavior	Description
		Wireless local area network (WLAN) capability
	Solid blue	The capability of the programmer to connect to a wireless network is enabled. For more information see "Managing the programmer system" on page 40.
	Off	The capability of the programmer to connect to a wireless network is disabled. For more information see "Managing the programmer system" on page 40.
		Power/Battery status
	Solid green	Mains electricity through the power supply is being used, the battery has sufficient charge, or the battery has been fully charged.
	Solid red	The battery is low.
	Solid orange	The battery is charging.
	Flashing orange	The programmer is in standby mode.
	Off	The programmer is off.

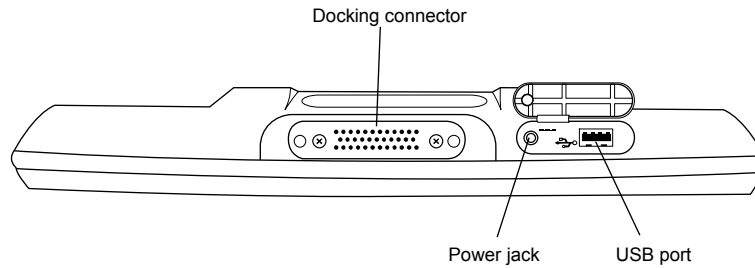

Figure 1. *Programmer (front).*

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Docking connector

Power jack   USB port

Figure 2. Programmer (bottom).

Stylus slot   Speaker

Power button
RFID
(Reserved for future use)
Camera with light

Stylus
(Connected)

Battery

Battery release
button

Figure 3. Programmer (back).

Telemetry head component identification

The telemetry head is handheld and battery-operated. Communication between the telemetry head and the programmer can occur wirelessly using Bluetooth technology or wired using the Model 885010 USB System Connector Cable.

The front of the telemetry head is equipped with power and communication status LED indicators, a **Communicate** button, battery compartment, and accessory connector. See Table 5 on page 25 for a

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description of the telemetry head LED indicators. The right side of the telemetry head is equipped with a **Power** button. The left side of the telemetry head is equipped with a proprietary connector for the USB System Connector Cable. See Figure 4.

The back side of the telemetry head displays the device label, which shows where the internal antenna is located (Figure 5 on page 16). The back of the telemetry head is also equipped with an accessory connector, which can be used to attach the telemetry head to the docking station for storage. See "Using the docking station" on page 20 for more information.
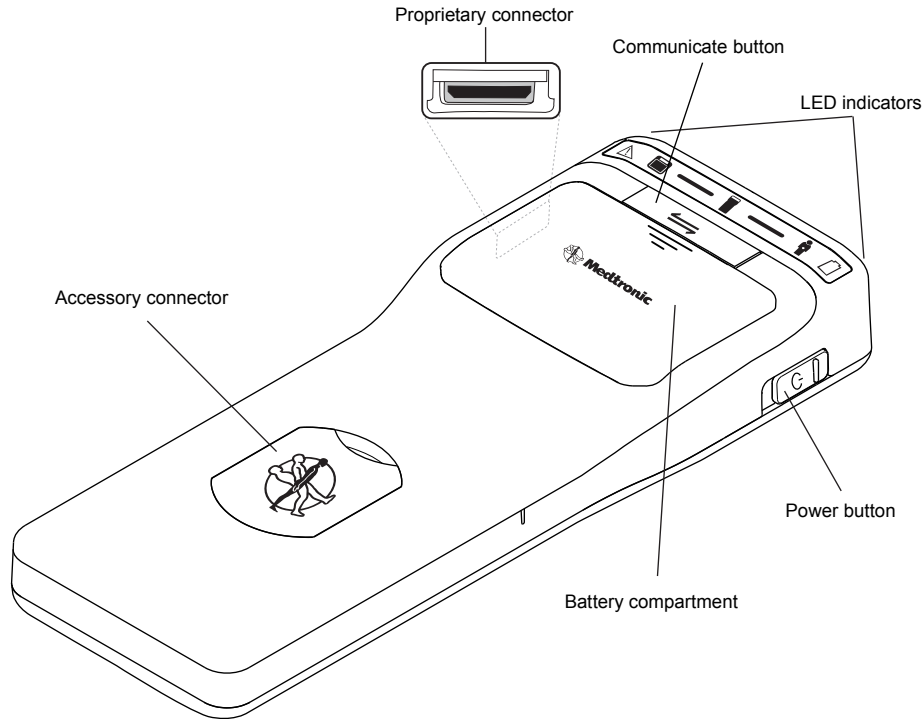

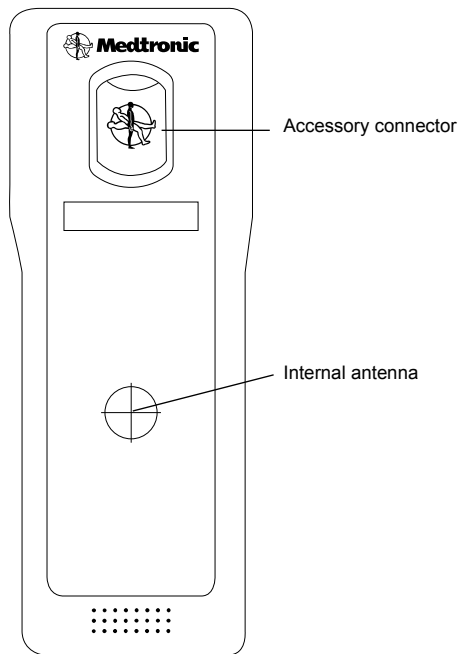*Figure 4. Telemetry head (front and right sides).*

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Figure 5. Telemetry head (back).

Docking station component identification

The docking station allows the programmer to be docked for charging while providing additional connections.

The front of the docking station is equipped with a power status LED indicator and cradle for the programmer that contains docking pins (Figure 6). A solid green LED indicates power is present.

The back of the docking station may be equipped with an Ethernet port with LED indicators, USB port, video graphics array (VGA) output connector, and power jack (Figure 7 on page 17).

Note: The USB port on the docking station should only be used to connect a USB flash drive, the USB system connector cable, or a USB printer cable.

The back leg of the docking station is equipped with an accessory connector, which can be used to attach the telemetry head for storage. See "Using the docking station" on page 20 for more information.
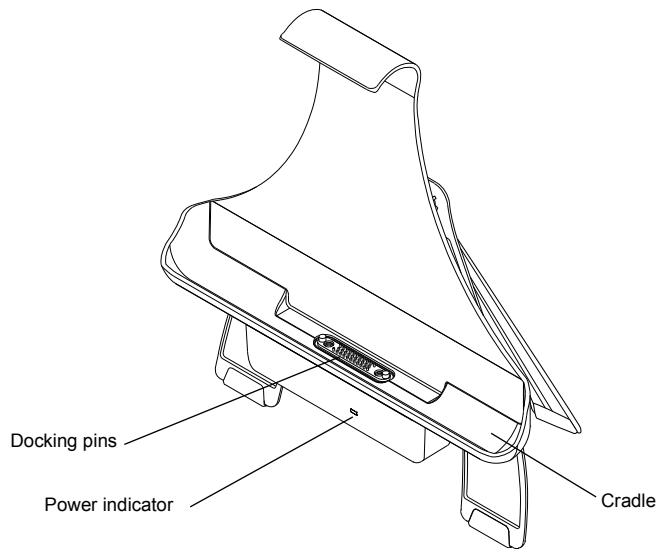
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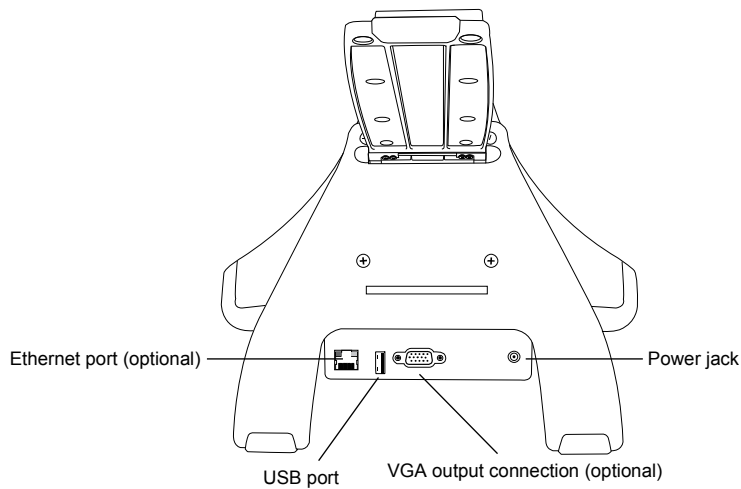
Figure 6. Docking station (front).

Figure 7. Docking station (back).

Setting up the programmer and docking station

△**Caution:** If the programmer system components were transported or stored above or below the specified operating temperature range, allow the items to stabilize at room temperature until they return to operating temperature. Using the programmer system components within operating temperature range ensures device functionality.

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⚠️**Warning:** Do not simultaneously touch the patient and any metal conductive surfaces (eg, battery contacts) of the programmer system components while the power supply is plugged into mains wall power. There is a potential danger of electric shock, which may result in damage to the device and injury to the patient and/or user.

⚠️**Warning:** To prevent harm to the patient, any person connecting a peripheral device (eg, printer) to the programmer or docking station is responsible for ensuring that:

■ the peripheral device is certified according to the IEC 60950 (for data processing equipment) or the IEC 60601 (for medical equipment) (eg, keep IEC 60950 certified peripheral devices at least 2 meters from the patient; this satisfies the requirement of IEC 60601-1).

■ an isolation transformer (ie, component included in the power supply that comes with the peripheral device) is used to power the peripheral device if the device will be used in the vicinity of a patient.[1]

■ the system formed by connecting the peripheral device to the programmer or docking station meets the requirement of IEC 60601-1 3rd edition clause 16, safety requirement for medical electrical systems.

If there is doubt about the IEC certification of peripheral devices, consult the peripheral device manufacturer.

The following equipment may be used in the vicinity of the patient (ie, 2 meters):

■ Clinician programmer

■ Telemetry head

■ USB system connector cable

■ Rechargeable battery

■ Power supply and cord

■ Docking station

■ Printer USB cable[2]

The following equipment may not be used in the vicinity of the patient:

■ Battery charger

Inserting the rechargeable battery

The first time the programmer is used, the battery should be installed and mains electricity through the power supply should be connected for at least 4 hours to charge the battery. For instructions on inserting the battery, see "Installing or removing the programmer battery" on page 52.

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[1] An isolation transformer is a transformer that is used to transfer electrical power from an electrical outlet to a device while isolating the powered device from the power source.

[2] An isolation transformer must be used to power the printer.

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Connecting the power supply and cord

The power supply and cord supplied by Medtronic are compatible with the clinician programmer, docking station, and battery charger. Only use the power supply and cord according to the instructions provided in this manual.

⚠️ **Warning:** Use only the power supply and cord supplied by Medtronic. Do not use a portable multiple-socket outlet or extension cord with the system. There is a potential danger of electric shock or excessive heat if the wrong power supply, a portable multiple-socket outlet, or an extension cord is used, which may result in damage to the device and injury to the user.

To connect and use the power supply and cord:

1. Connect the socket end of the mains power cord to the 3-pin plug of the power supply (Figure 8).
2. Insert the DC end of the power supply cord into the power jack of the desired product.
3. Connect the mains power cord plug to an electrical outlet. The power indicator on the power supply will turn solid green.
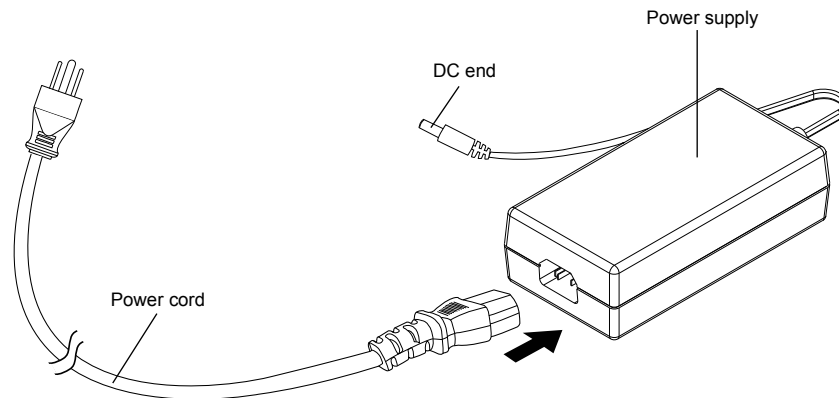

Figure 8. Connecting the power supply and cord.

Notes:

■ The mains power cord plug may differ based on region.

■ When the power supply is connected to a mains electrical outlet, power is on. To turn power off, disconnect the power supply from the mains electrical outlet.

The electrical outlet should be located near the products. Position the power cord so that it will not be stepped on and objects will not be placed on it. Always unplug the power cord when not in use.

⚠️ **Warning:** Do not pull directly on the power cord. There is a potential risk of burn, fire, and electric shock, which may result in damage to the device and injury to the user. To safely remove the power cord from an electrical outlet, grasp the plug and pull straight out from the electrical outlet.

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Connecting to the USB port

To connect a printer USB cable to the programmer:

1. Correctly orient the printer USB cable plug in relation to the USB port on the programmer.
2. Insert the plug into the port.

Note: Compatible printer drivers are PCL3, PCL3e, PCL4, PCL5C (color), PCL5e, PS2, PS2 (color), PS3. Consult your printer manufacturer to determine the correct page description language, eg, PS (PostScript®) or PCL® (Printer Command Language).

To connect a USB flash drive to the programmer:

1. Correctly orient the USB flash drive in relation to the USB port on the programmer.
2. Insert the USB flash drive into the port.

Using the docking station

Place the docking station on a reliable surface before using. The docking station leg can be adjusted to a desired angle.

Notes:

■ The cradle and legs of the docking station can be separated to allow the cradle to be VESA-mounted.

■ Mains electricity through the power supply must be connected to the docking station in order to use connected equipment.

■ The USB port on the docking station should only be used to connect a USB flash drive, the USB system connector cable, or a printer USB cable.

For instructions on using the docking station, see Table 4.

Table 4. Using the docking station

Procedure:	Do this:
To dock the programmer (Figure 9):	1. With the screen of the programmer facing outwards, place the bottom of the programmer into the cradle of the docking station so that the docking connector and docking pins align. 2. Press the programmer into the back of the docking station until the docking station tab snaps over the programmer to hold it in place.
To undock the programmer (Figure 9):	1. Lift the tab of the docking station until it releases the programmer. 2. Lift the programmer from the docking station.
To connect the USB system connector cable to the docking station:	1. Make sure the docking station is powered. 2. See "Connecting to and disconnecting from the programmer" on page 23.
To connect a USB flash drive to the docking station:	1. Make sure the docking station is powered. 2. Correctly orient the USB flash drive in relation to the USB port on the docking station. 3. Insert the USB flash drive into the port.

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<p style="text-align:center">Table 4. Using the docking station (continued)</p>

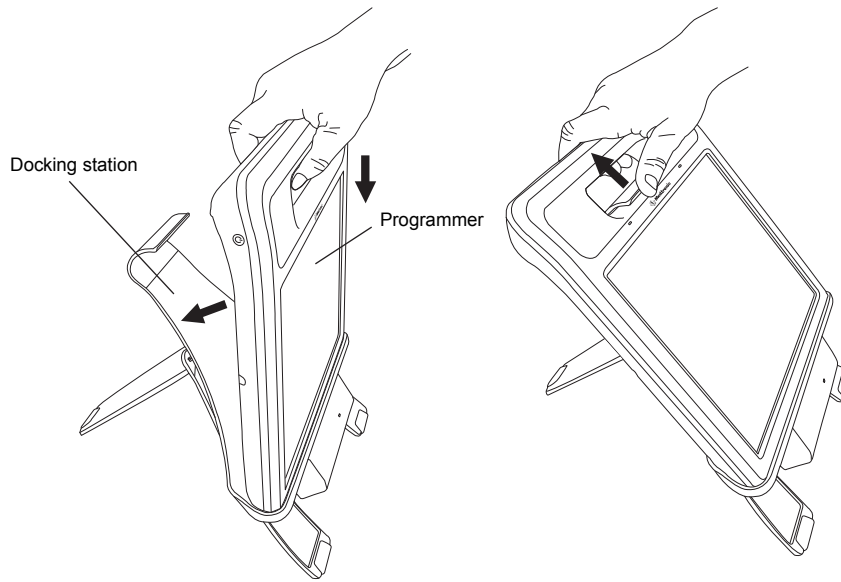| Procedure:	Do this:
To connect a printer USB cable to the docking station (Figure 10): **Note:** Compatible printer drivers are PCL3, PCL3e, PCL4, PCL5C (color), PCL5e, PS2, PS2 (color), PS3. Consult your printer manufacturer to determine the correct page description language, eg, PS (PostScript) or PCL (Printer Command Language).	1. Make sure the docking station is powered. 2. Correctly orient the printer USB cable plug in relation to the USB port on the docking station. 3. Insert the plug into the port.
To connect an Ethernet cable to the docking station (Figure 10): **Note:** An Ethernet port may not be available on all docking stations.	1. Make sure the docking station is powered. 2. Correctly orient the Ethernet cable plug in relation to the Ethernet port of the docking station. 3. Insert the plug into the port until it snaps into place. A flashing green LED in the Ethernet socket indicates a 10 Mbps connection, while a flashing yellow LED indicates a 100 Mbps connection. **Note:** The connection speed is dependent on the external network hardware and wiring and is not user configurable. The programmer will negotiate the fastest connection available when connected to the Ethernet network
To connect a VGA cable from an external monitor to the docking station, in order to display the programmer image on an external monitor (Figure 10): **Note:** A VGA output connection may not be available on all docking stations.	1. Make sure the docking station is powered. 2. Correctly orient the VGA cable plug in relation to the VGA output connection of the docking station. The pins of the VGA cable plug should align with the holes of the VGA output connection. 3. Firmly insert the plug into the connection. 4. Secure the screws of the plug to the connection. **Note:** VGA output settings and resolution are not user configurable.
To store the telemetry head on the docking station, when the telemetry head is not in use (Figure 11):	1. Remove the plug from the accessory connector on the back of the telemetry head. 2. Orient the telemetry head at a 90° angle to the back leg of the docking station. 3. Place the accessory connector on the back of the telemetry head over the accessory connector on the back leg of the docking station. 4. Rotate the telemetry head downward 90° until it locks into place.

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Docking station

Programmer

Figure 9. Docking and undocking the programmer.

Power cord

Ethernet cable   Printer USB cable

Figure 10. Docking station with cables attached.

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Figure 11. Storing the telemetry head on the back of the docking station.

Using the telemetry head

Connecting to and disconnecting from the programmer

The first time any telemetry head is used with a programmer, the telemetry head must be connected using the Model 885010 USB System Connector Cable. Subsequent uses of the telemetry head with that programmer can utilize Bluetooth wireless technology.

Note: A telemetry head that is connected to the programmer using the USB system connector cable will take priority over other telemetry heads.

To connect the USB system connector cable:

1. Position the programmer and telemetry head within 1.83 m (6 ft) of each other.
2. Correctly orient the proprietary end of the cable in relation to the proprietary connector on the telemetry head and insert the proprietary plug into the connector (Figure 12).
3. Correctly orient the USB end of the cable in relation to the USB port on the programmer (or docking station if the programmer is docked) and insert the USB plug into the port (Figure 13 and Figure 14). When the telemetry head is connected to the programmer via USB system connector cable, a button showing a telemetry head with USB will appear towards the top right of the programmer screen (Table 7 on page 37).
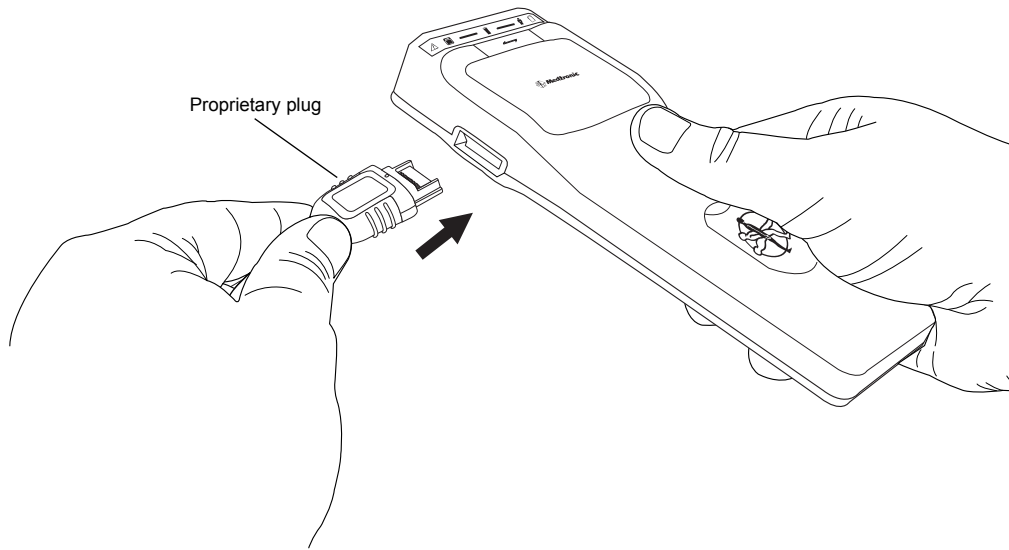
Filename Date Time
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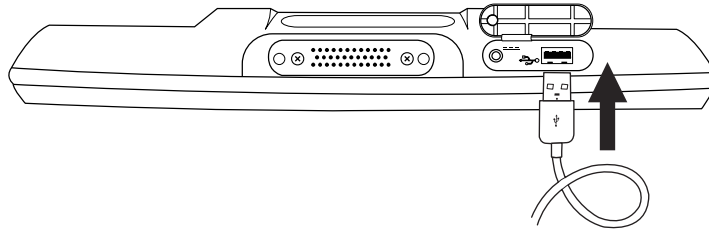Template version: 07-06-2012

Proprietary plug

Figure 12. Connecting the USB system connector cable to the telemetry head.

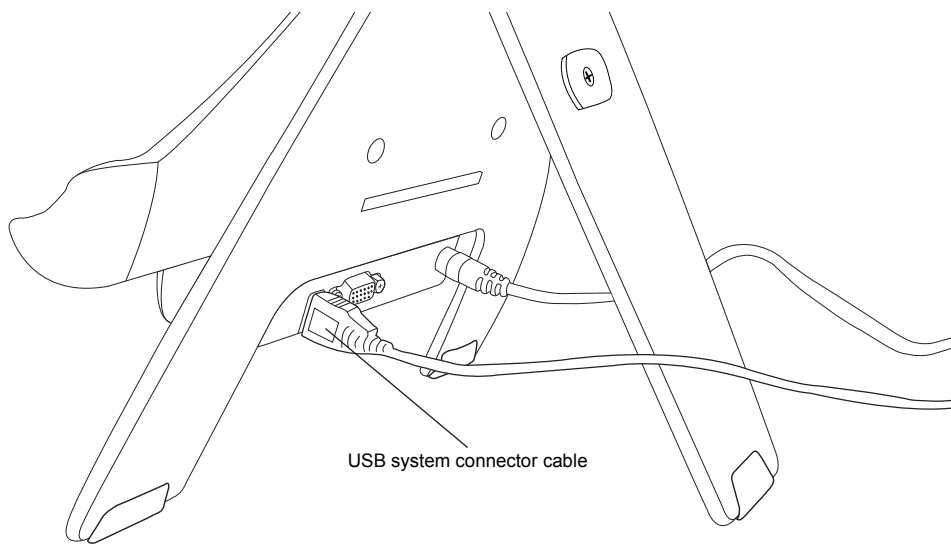*Figure 13. Connecting the USB system connector cable to the programmer.*

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Figure 14. Connecting the USB system connector cable to the docking station.

To disconnect the USB system connector cable and switch to Bluetooth wireless technology:

1. Unplug the USB system connector cable from the programmer and the telemetry head.
    The programmer will search for the telemetry head and may take up to 12 seconds to detect and connect to the telemetry head using Bluetooth wireless technology.

2. Make sure the telemetry head is turned on and within range of the programmer (within 3 meters; less than 10 feet).
    When the telemetry head is connected to the programmer via Bluetooth, a button showing a telemetry head with Bluetooth will appear towards the top right of the programmer screen (Table 7 on page 37).

Turning the telemetry head on or off

To turn the telemetry head on, slide the **Power** button, then release.

To turn the telemetry head off, slide the **Power** button, hold for 2 seconds, then release.

Telemetry head LED indicators

The following table describes the LED indicators on the front of the telemetry head.

Table 5. Telemetry head LED indicators

LED indicator	Behavior	Description
⚠		**Warning**
	Flashing amber for 5 seconds	**Communicate** button has been pressed but has not been enabled by the programmer.
		Note: Two descending tones sound from the telemetry head.

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Table 5. Telemetry head LED indicators (continued)

LED indicator	Behavior	Description
		Programmer status
	Solid green for 3 seconds	Telemetry head has been turned on.
	Solid green	Telemetry head is connected to the programmer.
	Flashing amber	Telemetry head is not connected to the programmer.
		Implantable device status
	Solid green for 3 seconds	Telemetry head has been turned on.
	Flashing green	Telemetry head is successfully communicating with an implantable device. **Note:** When the telemetry head has completed communication with an implantable device, a tone repeats twice and the LED indicator turns off.
	Flashing amber	Telemetry head is attempting to communicate with an implantable device, but is unable to detect the implantable device. **Note:** A single tone sounds from the telemetry head.
	Off	Telemetry head is not attempting to communicate with an implantable device.
		Battery status
	Flashing green for 10 seconds	Telemetry head has been turned on. Battery level is acceptable and all telemetry head functions are enabled.
	Flashing amber	Telemetry head has been turned on. Batteries should be replaced soon.
	Flashing red	Telemetry head has been turned on. Batteries should be replaced immediately. **Communicate** button is disabled.
		Communicate button
	Solid green for 3 seconds	Telemetry head has been turned on.
	Flashing green	**Communicate** button has been enabled by the programmer.
	Off	**Communicate** button has not been enabled by the programmer.

Initiating telemetry

If the **Communicate** button has been enabled by the programmer, when the **Communicate** button is pressed the telemetry head sends a request to the programmer to initiate a telemetry session with the implantable device. For more information on enabling the **Communicate** button and on initiating telemetry with an implantable device, refer to the appropriate programmer guide for the device and therapy.

△**Caution:** Do not attempt telemetry near equipment that may generate electromagnetic interference (EMI). EMI can interfere with programmer telemetry. If EMI disrupts programming, move the programmer away from the likely source of EMI. Examples of sources of EMI are magnetic resonance imaging (MRI), lithotripsy, computer monitors, cellular telephones, motorized

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wheelchairs, x-ray equipment, and other monitoring equipment. Interrupting telemetry can result in incorrect or incomplete programming.

Positioning the telemetry head in a sterile field

⚠️**Warning:** To use the nonsterile programmer system components in a sterile field, place a sterile barrier between the patient and system components to prevent infection. Do not sterilize any components of the programmer system. Sterilization may damage the components.

Figure 15 and Figure 16 demonstrate proper positioning of the telemetry head in a sterile field.
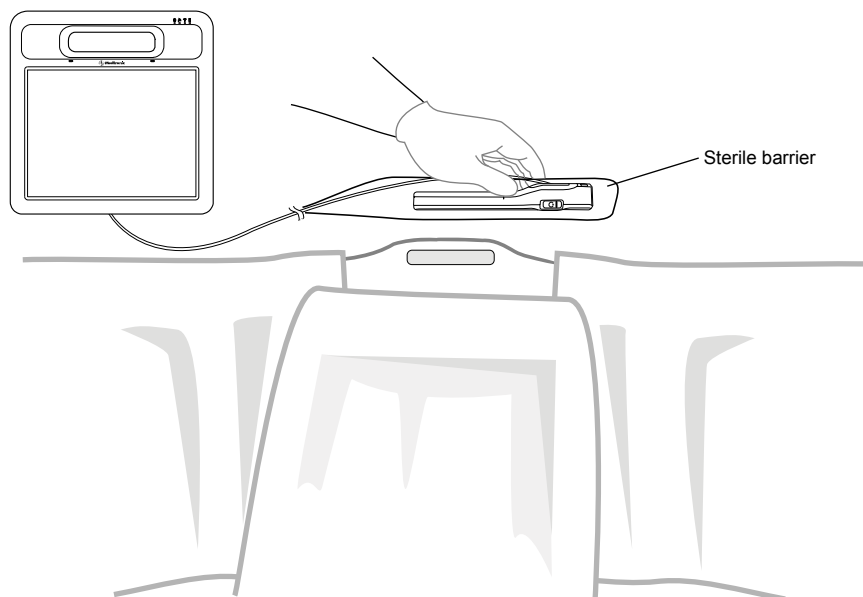

Sterile barrier

Figure 15. *Telemetry head within a sterile field connected to a programmer, patient supine.*

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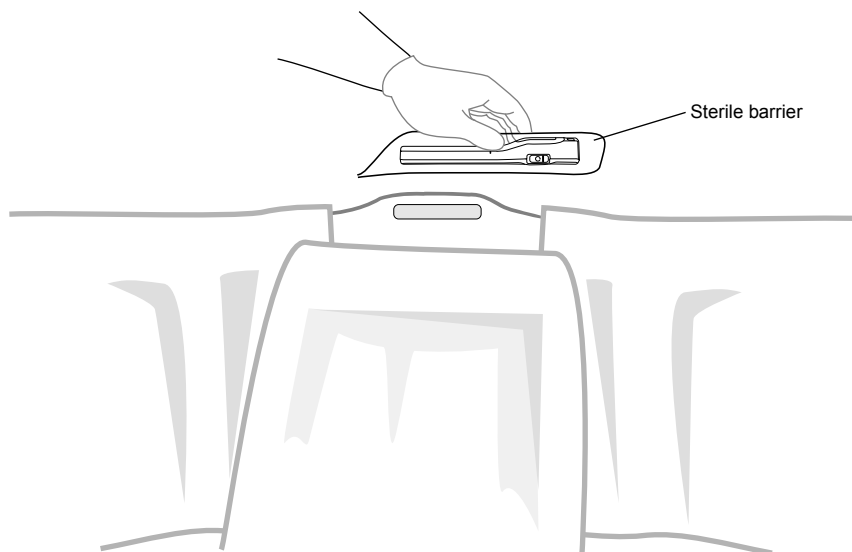Template version: 07-06-2012

Sterile barrier

Figure 16. Telemetry head using Bluetooth wireless technology within sterile field, patient supine.

Programmer function overview

Note: Figures showing the programmer screen are representative. What is displayed on the actual programmer screen may differ slightly.

Turning the programmer on

To turn the programmer on, press and release the **Power** button on the side of the programmer (Figure 17).

When the programmer is turned on, white text will appear on the programmer screen prior to a welcome screen being displayed. The programmer desktop will load within 60 seconds.

Note: The first time the programmer is used, the battery should be installed and mains electricity through the power supply should be connected for at least 4 hours to charge the battery. See "Installing or removing the programmer battery" on page 52 and "Connecting the power supply and cord" on page 19 for instructions.

⚠️**Caution:** Check the power status of the programmer before starting a programming session. Loss of power during a programming session will reinitialize the programmer and can lead to a loss of data and/or inability to program.
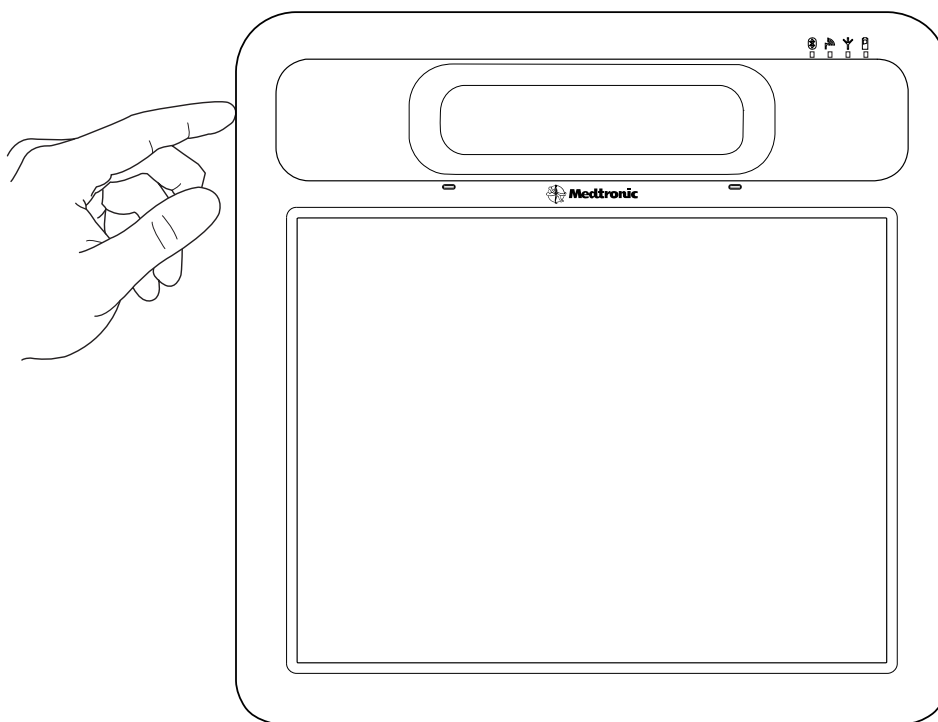
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Figure 17. Turning the programmer on.

Data entry using the programmer touchscreen

The touchscreen is used to navigate, display status, and enter data. The stylus pen that is packaged with the programmer or a finger can be used to make contact with the touchscreen. Only touch 1 point on the touchscreen at a time. Do not use sharp objects (eg, pencils, pens, paper clips) on the touchscreen. The stylus pen can be locked in place on the back of the programmer when not in use (Figure 3 on page 14).

When entering data, most values are accepted through the following controls:

■   **Drop-down list**—A list of values appears when the arrow on the right side of a drop-down list is pressed. Enter data by pressing a value.
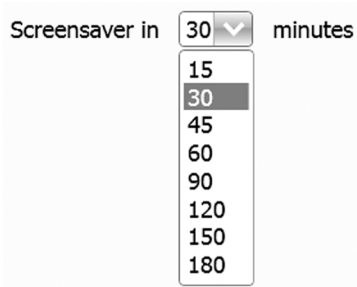
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Figure 18. Drop-down list example.

■ **Radio button**—Press the radio button next to the desired value.

Figure 19. Radio button example.

■ **Checkbox**—Press the checkbox to make a selection.

Figure 20. Checkbox example, not selected.

■ **Arrow buttons**—Press the up or down arrow to change the value.

Figure 21. Arrow buttons example.

■ **Input box or button**—A keyboard or keypad appears when the input box or button is pressed.

Figure 22. Input box example.

■ **Keyboard**—The unshifted keyboard appears when the stylus contacts an input button or box that requires alphanumeric input. To enter data, a text cursor will appear, then press individual characters.

– **Shift Arrow** (⇧)—Changes the keyboard from lowercase to uppercase and makes other characters available.

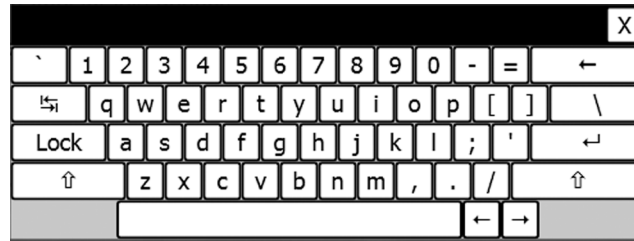– **Lock**—Locks the keyboard in uppercase or lowercase mode.

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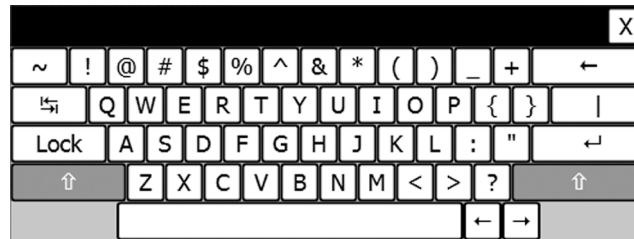
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Figure 23. *Unshifted keyboard.*

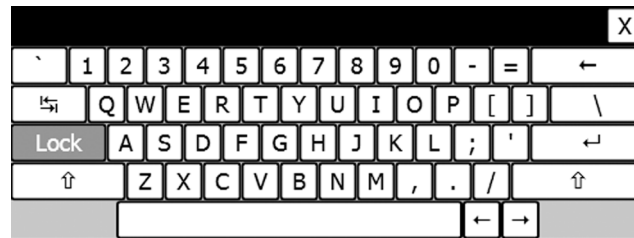***Figure 24.*** *Shifted keyboard.*
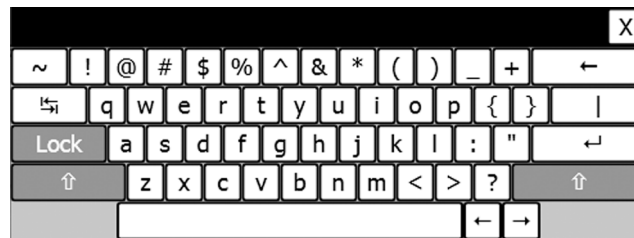

Figure 25. *Locked keyboard.*

Figure 26. *Shifted and locked keyboard.*

■ **Numeric keypad**—The keypad appears when the stylus touches an input button or box that requires numeric input. To enter data, press the input field, a text cursor will appear, then press individual characters.

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Note: Depending on the **Number format** setting, either a period or comma will appear on the numeric keypad to be used as a decimal separator. A colon will appear on the numeric keypad when the time of day needs to be entered.
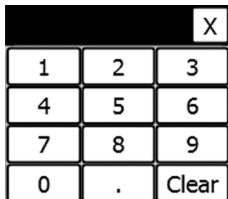

Figure 27. Numeric keypad.

■ **Date entry**—A field that requires a date entry is indicated by a **Calendar** button or a calendar display.

To set the **Date**:

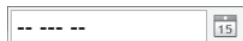1. If needed, press the **Calendar** button to open the date entry control to select the date (Figure 28).

*Figure 28. **Calendar** button.*

2. Press the month and year that is displayed between the left and right arrows at the top of the calendar display to change the year or month (Figure 29).
   Note: When pressed, the left arrow will move the calendar back a month and the right arrow will move the calendar forward a month.

Figure 29. Calendar display example.

3. Press the year that is displayed between the left and right arrows at the top of the calendar to change the decade (Figure 30).

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Note: When pressed, the left arrow will move the calendar back a year and the right arrow will move the calendar forward a year.

Figure 30. Month display example.

4. Press the left and right arrows to change the decade (Figure 31).

Figure 31. Year display example.

5. Press the year (Figure 31).
6. Press the month (Figure 30).
7. Press the day of the month (Figure 29).

Configure initial user settings

The first time the programmer is turned on, user settings for **Language**, **Number format**, **Date and time**, and **Patient data security** need to be configured and **Contact information** for the programmer needs to be entered before the programmer desktop and therapy applications can be accessed.

The user settings and **Contact information** can be accessed again later, see "Managing the programmer system" on page 40.

Note: If the programmer is turned off before all user settings screens are completed, no user settings will be retained. The next time the programmer is turned on, user settings will be displayed again and will need to be configured.

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Table 6. Configuring initial user settings

Procedure:	Do this:
Language	
To change a **Language** setting:	Press the radio button next to the desired language.
To move to the next screen:	Press the **Next** button.
Number format	
To change the **Number format** for date, time, and numeric values:	Press the radio button next to the desired formats.
To move to the next screen:	Press the **Next** button.
Date and time	
To set the **Date**:	Follow the instructions in "Data entry using the programmer touchscreen" on page 29.
To set the **Time**:	1. Press the up or down arrow next to the hour. 2. Press the up or down arrow next to the minute. 3. If needed, press the up or down arrow next AM or PM.
To move to the next screen:	Press the **Next** button.
Patient data security	
To enable **Patient data security**: Note: If **Patient data security** is enabled, a password must be entered the first time patient data are requested after the programmer is turned on. If **Patient data security** is enabled, only patient data from the current programming session can be accessed without the password.	Press the **Yes, enable Patient Data Security** radio button.
To enter a **Password** and to **Confirm Password**:	1. Press the **Password** input box and use the keyboard to select characters. 2. Press the **Confirm Password** input box and use the keyboard to select characters that match the **Password**. **Notes:** • There are no rules for setting a password, such as minimum number of characters or use of numbers. • The **Next** button will be disabled if either password input box is empty. • If the **Password** and **Confirm Password** do not match, a message will appear after the **Next** button is pressed.
To move to the next screen:	Press the **Next** button.
Contact information	
To enter **Contact information**:	Press the input boxes and use the keyboard. Note: **Clinic**, **Address**, and **Contact** are required data. The **Next** button will be disabled until data is entered.
To move to the next screen:	Press the **Next** button.
Review settings	After the **Contact information** screen, a summary of the selected user settings will display. Review the settings.
To return to the user settings screens:	Press the **Previous** button.

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Table 6. Configuring initial user settings (continued)

Procedure:	Do this:
If the user settings have been reviewed and are acceptable:	Press the **Next** button.
Programmer restart	
To connect the telemetry head to the programmer:	Follow the instructions in "Connecting to and disconnecting from the programmer" on page 23.
	Note: The programmer will need to restart to apply the user settings. When the programmer starts, it will attempt to connect to a telemetry head. The first time that any telemetry head is used with a programmer, the telemetry head must be connected using the Model 885010 USB System Connector Cable. Subsequent uses of the telemetry head with that programmer can utilize Bluetooth wireless technology.
To have the programmer restart:	Press the **OK** button.

Overview of programmer desktop

Note: When the programmer is turned on, white text will appear on the programmer screen prior to a welcome screen being displayed. The programmer desktop will load within 60 seconds.

The programmer desktop is visible on the programmer screen when a programming session or **Demo Mode** is not running. A programming session must be terminated to return to the programmer desktop.

From the programmer desktop (Figure 32):

■ a programming session with a device can be started.

■ **Demo Mode** can be started.

■ the programmer can be turned off or put into **Standby**.

■ the **Control Panel** and **Messages** are available.

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Figure 32. Programmer desktop upon start up.

For information about starting a programming session with a device and starting **Demo Mode**, refer to the appropriate programmer guide.

The **Control Panel** and **Messages** are always visible at the top of the programmer screen, including during a programming session and **Demo Mode**. See "Programmer Control Panel" on page 37.

Turning the programmer off

To turn the programmer off:

1. Exit any running application.
2. Press the ⊙ button located on the desktop (Figure 32).
3. Press the **Power Off** button in the **Shutdown** window.

Note: The programmer will turn off if the **Power** button on the side of the programmer is pressed and held down for 8 seconds. This is not the recommended way of turning off the programmer.

Putting the programmer into Standby

To put the programmer into **Standby** in between programming sessions:

1. Exit any running application.
2. Press the ⊙ button located on the desktop (Figure 32).
3. Press the **Standby** button in the **Shutdown** window.

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Note: The programmer continues to consume a small amount of power while in **Standby**.

To resume from **Standby**, press the **Power** button on the side of the programmer (Figure 1 on page 13).

Note: It may take up to 15 seconds for the programmer to resume from Standby.

Programmer Control Panel

Note: Figures showing the programmer screen are representative. What is displayed on the actual programmer screen may differ slightly.

The **Control Panel** is a series of buttons that are always available at the top right of the programmer screen (Figure 32 on page 36). The **Control Panel** allows monitoring and management of the overall programmer system, including the telemetry head, network connectivity, and printer connection.

Note: Only the **Control Menu** and **Message** buttons are available while an application is loading.

Table 7. Control Panel buttons

Button	Status	Description
	Does not display status.	Press the button to access the **Patient Data Center**. See "Patient Data Center" on page 45.
	Does not display status.	Press the button to expand the **Control Menu** ("Control Menu" on page 38).
4:55 PM	Displays the current programmer time.	Press the button to open the **Date and Time** window.
	Printer is idle.	Press the button to open the **Printer Settings** window.
	Printer is active.	
	There is a printer error.	
	Programmer is connected to a network via Ethernet cable.	Press the button to open the **Network** window.
	Wireless network is not available.	
	Wireless network is available.	
	Programmer is connected to a wireless network.	

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Table 7. Control Panel buttons (continued)

Button	Status	Description
	Telemetry head is not connected.	Press the button to open the **Telemetry Head** window.
	Telemetry head is connected via USB system connector cable (button also displays the battery status of the telemetry head).	
	Telemetry head is connected via Bluetooth (button also displays the battery status of the telemetry head).	
	Programmer is using the power supply and the battery is charged (green) or the battery is charging (orange).	Press the button to open the **Power** window.
	Programmer is using battery power and the battery is charged (green).	
	Programmer is using battery power and the battery is low (orange).	
	Programmer is using battery power and the battery is critically low (red).	
	Does not display status.	Press the button to expand the **Message** window. See "Messages" for more information.

Messages

The **Message** window will automatically expand to present low priority alerts, such as status on printing and programmer power (Figure 33).

Press the left or right arrow buttons to change messages. To close the **Message** window, press the **X** or **Message** button.

*Figure 33. Expanded **Message** window.*

Control Menu

The **Control Menu** displays status and allows management of the following:

■ **Date and Time**

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- **Volume** (access through **Control Menu** only)

- **Brightness** (access through **Control Menu** only)

- **Power** (status only)

- **Telemetry head** (status only)

- **Printers**

- **Network**

- **Preferences** (access through **Control Menu** only)

- **Information** (access through **Control Menu** only)

- **Utilities** (access through **Control Menu** only)

- **Print screen** (access through **Control Menu** only)

*Figure 34. Expanded **Control Menu**.*

More buttons will open windows for the corresponding panel items when pressed.

To close the **Control Menu**, press any area on the programmer screen outside the **Control Menu**.

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Utilities

Press the **Utilities** button in the **Control Menu** to open the **Utilities** window (Figure 35).

The **Utilities** window provides access to miscellaneous functions on the programmer.

Figure 35. Utilities window.

Managing the programmer system

Table 8. Managing the programmer system

Procedure:	Do this:
Date and Time	
To change the date or time:	Open the **Date and Time** window.
	Note: The programmer time cannot be changed while in a programming session.
To set the **Date**:	Follow the instructions in "Data entry using the programmer touchscreen" on page 29.
To set the **Time**:	1. Press the up or down arrow next to the hour. 2. Press the up or down arrow next to the minute. 3. If needed, press the up or down arrow next to AM or PM.
Volume	
To adjust the **Volume** of the programmer:	Press and drag the circle on the slider (Figure 34 on page 39).
	Note: When the circle is released, the volume will immediately set and a beep will sound that is reflective of the volume setting.

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Table 8. Managing the programmer system (continued)

Procedure:	Do this:
Brightness	
To adjust the **Brightness** of the touchscreen: **Note:** The brightness setting will be reset once the programmer is turned off and on again.	Press and drag the circle on the slider (Figure 34 on page 39).
Telemetry Head	
To view telemetry head information such as serial number and software version:	Open the **Telemetry Head** window.
Printers	
To view a list of pending print jobs:	Open the **Printer Settings** window.
To cancel a print job:	1. Open the **Printer Settings** window. 2. Press the desired print job row. 3. Press the **Cancel Job** button.
To set a printer as the default:	1. Open the **Printer Settings** window. 2. Select the desired printer from the drop-down list. 3. Press the **Set as Default** button.
To print a test page on a printer: **Note:** The test page should contain a list of every language available on the programmer and all characters from the keyboard and numeric keypad.	1. Open the **Printer Settings** window. 2. Select the connected printer from the drop-down list. 3. Press the **Print Test Page** button.
Print Screen	
To print the programmer screen:	1. Open the **Control Menu**. 2. Press the **Print Screen** button. **Note:** To print the **Control Menu**, press the **Include Menu** checkbox before pressing the **Print Screen** button. 3. Select the connected printer from the **Printer** drop-down list. 4. Select the desired number of **Copies** from the drop-down list. 5. Select the desired **Color** option by pressing the radio button. 6. Select the desired **Paper size** from the drop-down list. 7. Press the **Print** button. **Note:** Programmer screens are printed to landscape orientation.
Network	
Wireless Network	
To disable the capability of the programmer to connect to a wireless network:	1. Open the **Network** window. 2. Press the **Wireless** tab. 3. Press the **Disable wireless radio** radio button.
To enable the capability of the programmer to connect to a wireless network:	1. Open the **Network** window. 2. Press the **Wireless** tab. 3. Press the **Enable wireless radio** radio button.
To connect to a wireless network that has been detected by the programmer:	1. Open the **Network** window. 2. Press the **Wireless** tab. 3. Press the network row in the list. 4. Press the **Connect** button.

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Table 8. Managing the programmer system (continued)

Procedure:	Do this:
To edit the details of a wireless network:	1. Open the **Network** window. 2. Press the **Wireless** tab. 3. Press the network row in the list. 4. Press the **Edit** button.
To delete a wireless network from the programmer:	1. Open the **Network** window. 2. Press the **Wireless** tab. 3. Press the network row in the list. 4. Press the **Delete** button.
To connect to a wireless network manually:	1. Open the **Network** window. 2. Press the **Wireless** tab. 3. Press the **Connect Manually** button.
Network Settings (For Ethernet, if an Ethernet port is available on the docking station.)	
To enter **IP settings** manually:	1. Open the **Network** window. 2. Press the **Network Settings** tab. 3. Press the **Use the following IP settings** radio button. 4. Press the **IP address** input box and use the keypad to enter data. 5. Press the **Subnet Mask** input box and use the keypad to enter data. 6. Press the **Default gateway** input box and use the keypad to enter data. 7. Press the **Save** button.
To enter **DNS server addresses** manually:	1. Open the **Network** window. 2. Press the **Network Settings** tab. 3. Press the **Use the following DNS server addresses** radio button. 4. Press the **Preferred DNS Server** input box and use the keypad to enter data. 5. Press the **Secondary DNS Server** input box and use the keypad to enter data. 6. Press the **Save** button.
Bluetooth	
To enable Bluetooth: **Note:** If Bluetooth is enabled, the programmer can communicate wirelessly with the telemetry head or other approved devices.	1. Open the **Network** window. 2. Press the **Bluetooth** tab. 3. Press the **Enable Bluetooth Adapter** radio button. 4. Restart the programmer.
To disable Bluetooth: **Note:** If Bluetooth is disabled, the programmer and telemetry head will need to be connected using the USB system connector cable in order to communicate. The programmer will not be able to communicate with other approved devices that only use Bluetooth.	1. Open the **Network** window. 2. Press the **Bluetooth** tab. 3. Press the **Disable Bluetooth Adapter** radio button.

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Table 8. Managing the programmer system (continued)

Procedure:	Do this:
Email	
To set up email: **Notes:** • Email settings must be set up in order to send reports via email. • Only outgoing email is supported. • Consult your network documentation or IT department to determine the correct settings for your location.	1. Open the **Network** window. 2. Press the **Email** tab. 3. Press the **Outgoing server** input box and enter data using the keyboard. 4. Press the **Port** input box and enter data using the keypad. 5. Press the **User name** input box and enter data using the keyboard. 6. Press the **Password** input box and enter data using the keyboard. 7. Press the **Default return email address** input box and enter data using the keyboard. 8. If desired, press the **Enable SSL** checkbox. 9. Press the **Save** button.
Locations	
To add a network location path: **Note:** Network locations must be set up in order to save reports to a network location.	1. Open the **Network** window. 2. Press the **Locations** tab. 3. Press the **Location** input box and enter a valid network path using the keyboard. 4. Press the **Add** button.
To remove a network location from the list of **Existing Locations**:	1. Open the **Network** window. 2. Press the **Locations** tab. 3. Press the location row. 4. Press the **Delete** button.
Preferences	
To change a **Language** setting:	1. Open the **Preferences** window. 2. Press the **Language** tab. 3. Press the radio button next to the desired language. 4. Restart the programmer.
To change the amount of time that the programmer must be inactive before the screen saver will activate:	1. Open the **Preferences** window. 2. Press the **Time out** tab. 3. Select from the drop-down list.
To enable **Patient Data Security**: **Note:** If **Patient data security** is enabled, a password must be entered the first time patient data are requested after the programmer is turned on. If **Patient data security** is enabled, only patient data from the current programming session can be accessed without the password.	1. Open the **Preferences** window. 2. Press the **Patient Data Security** tab. 3. Press the **Enable Patient Data** button. 4. Press the **Password** input box and use the keyboard to select characters. 5. Press the **Confirm Password** input box and use the keyboard to select characters that match the **Password**. 6. Press the **OK** button. **Notes:** • There are no rules for setting a password, such as minimum number of characters or use of numbers. • If the **Password** and **Confirm Password** do not match, a message will appear after the **Next** button is pressed.

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Table 8. Managing the programmer system (continued)

Procedure:	Do this:
To change the **Patient Data Security** password:	1. Open the **Preferences** window. 2. Press the **Patient Data Security** tab. 3. Press the **Change Password** button. 4. Press the **Old Password** input box and use the keyboard to enter the old password. 5. Press the **New password** input box and use the keyboard to select characters. 6. Press the **Confirm New Password** input box and use the keyboard to select characters that match the new password. 7. Press the **OK** button.
If the **Patient Data Security** password is unknown:	See "Resetting the Patient data security password" on page 59.
To disable **Patient Data Security**:	1. Open the **Preferences** window. 2. Press the **Patient Data Security** tab. 3. Press the **Disable Patient Data** button. 4. Press the input box and use the keyboard to enter the password. 5. Press the **OK** button.
To change the format for date, time, and numeric values:	1. Open the **Preferences** window. 2. Press the **Format options** tab. 3. Press the radio button next to the desired formats. 4. Restart the programmer.
Information	
To view programmer information such as serial number, software version, installed applications and contact information:	Open the **Information** window.
To change contact information for the programmer:	1. Open the **Information** window. 2. Press the desired input box(es) and use the keyboard to enter data. 3. Press the **OK** button.
Remove USB Drive	
To safely remove an active USB flash drive from the programmer:	1. Press the **Control Menu** button. 2. Press the **Utilities** button. 3. Press the **Remove USB Drive** button. 4. Firmly grasp the USB flash drive and pull it straight out of the USB port.
Calibrate Display	
For instructions on calibrating the touchscreen see "Calibrating the touchscreen" on page 57.	
Software Update	
Medtronic will make software updates available. Refer to the instructions provided with the software updates to update the software on the programmer.	
Update Telemetry Head	
Medtronic will make software updates available. Refer to the instructions provided with the software updates to update the software on the telemetry head.	

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Table 8. Managing the programmer system (continued)

Procedure:	Do this:
Camera	
To use the **Camera** on the back of the programmer to capture images:	1. Press the **Control Menu** button. 2. Press the **Utilities** button. 3. Press the **Camera** button to open the **Camera** control. **Note:** For more information on the use of the **Camera** control, refer to the appropriate programmer guide to see if the **Camera** control is supported.
Drawing Tool	
To draw lines on the active programmer screen:	1. Press the **Control Menu** button. 2. Press the **Utilities** button. 3. Press the **Drawing Tool** button. **Note:** All functionality is disabled when the **Drawing Tool** is open, except for **Print Screen** and **Therapy Stop** (if supported by the application). 4. Press the **Point Size** button to select a different size for the drawing function. 5. Press the **Line** button to select a different color for the drawing function. 6. Press the **Pen** button to change the drawing function to an eraser function. 7. Press the **Trash** button to clear the screen. 8. Press the **X** button to close the **Drawing Tool**. **Note:** Any drawings on the screen will be cleared when the **Drawing Tool** is closed.
View Log	
To view a list of system logs for troubleshooting purposes:	1. Press the **Control Menu** button. 2. Press the **Utilities** button. 3. Press the **View Log** button.

Patient Data Center

The **Patient Data Center** provides patient records for all patients who have had a programming session on the programmer. The patient record includes all device and session data, as well as a **Patient Profile**, which includes demographic information, notes, and imported files and images.

New patient records are created when a programming session is started and a device is interrogated.

The **Patient Data Center** also provides reports. Reports can be created to include data from a particular patient session, from multiple patient sessions, or for multiple patients. Reports can be viewed on the programmer screen, printed, sent via email, saved to a USB flash drive, or saved to a network location. See "Reports" on page 49.

To access the **Patient Data Center**, press the associated button located on the **Control Panel** (Table 7 on page 37).

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Patient Record Security

Facilities should take all necessary steps to protect the patient information contained on the programmer consistent with governmental requirements and regulations related to the protection of such information.

If **Patient Data Security** is enabled, the first time the **Patient Data Center** is accessed after the programmer is turned on or returns from **Standby** mode, the password will need to be entered.

On subsequent entries, no password is required unless the **Log Off** button was used to exit the **Patient Data Center**. **Patient Data Security** options can be accessed in the **Control Menu**, see "Managing the programmer system" on page 40.

Press the **X** button to exit the **Patient Data Center** and remain logged in.

Note: If the programmer loses power or is turned off, the password will need to be entered to log back into the **Patient Data Center**.

Patient List

When the **Patient Data Center** is accessed, the **Patient List**, a list of all patients who have a record on the programmer is provided (Figure 36).

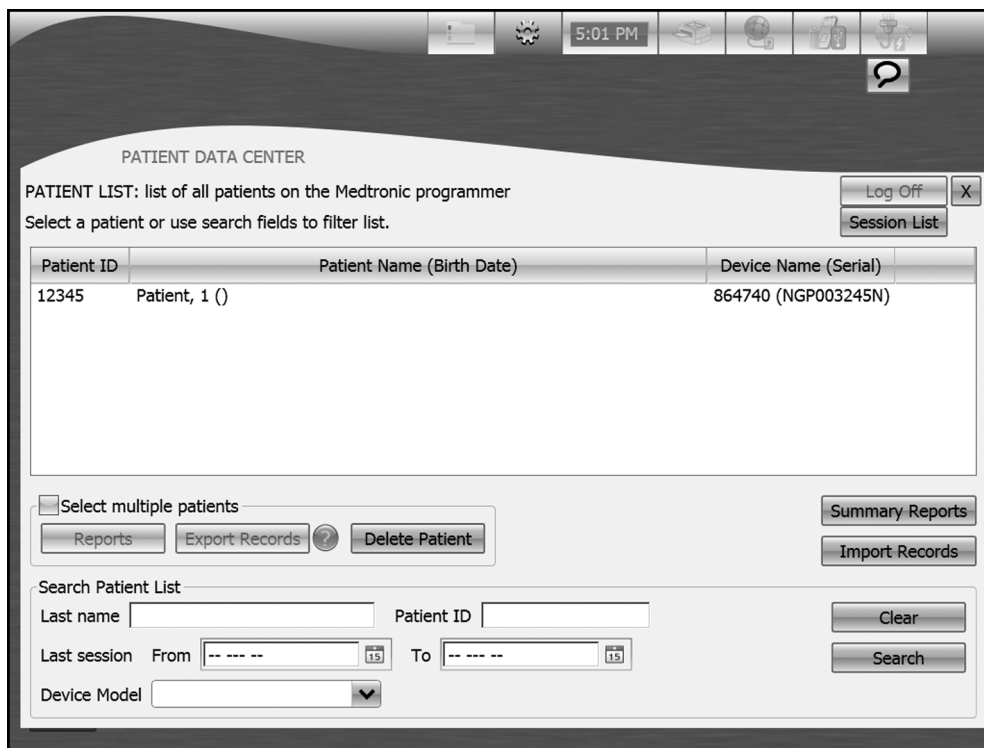The **Patient List** button will display the **Patient List** when pressed.

*Figure 36. Patient List screen from the **Patient Data Center**.*

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Note: Once the **Select multiple patients** checkbox has been pressed, the **Reports**, **Export Records**, and **Delete Patient** buttons are enabled. One or more patients must be selected in order for the buttons to function.

Search Patient List allows the list of patients to be filtered according to the search criteria entered.

To enter search criteria:

1. Press the **Last name** input box and enter the patient's last name using the keyboard.
2. Press the **Patient ID** input box and enter the patient's ID using the keyboard.
3. Press the **Calendar** buttons next to the **From** and **To** fields to enter the dates that the patient's **Last session** occurred between.
4. Select the patient's **Device Model** from the drop-down list.
5. Press the **Search** button.

Notes:

- Search fields that are left blank are interpreted as "all".

- For any data entered for **Last name** or **Patient ID**, the search will return records with exact matches or that begin with the entered data. The search is not case dependent.

- If no **To** date is entered, the search returns records up to the present date.

- If no **From** date is entered, the search returns all records up to and including the entered **To** date.

If no records are found matching the search criteria, **No patients records found** appears in the **Patient List**.

To delete all search criteria that has been entered, press the **Clear** button.

Patient Profile

Press the patient's row in the **Patient List** to view the **Patient Profile**.

The **Patient Profile** includes basic demographic information such as the patient's name, ID, sex, and birth date. Press the **Sessions** tab to see a list of the patient's sessions that have occurred on the programmer. Press the **Devices** tab to see a list of devices the patient has. Press the **Patient Information** tab to see contact information for the patient.

Session List

The **Session List** provides a list of all programming sessions that have occurred on the programmer (Figure 37). Sessions are listed in order of most current.

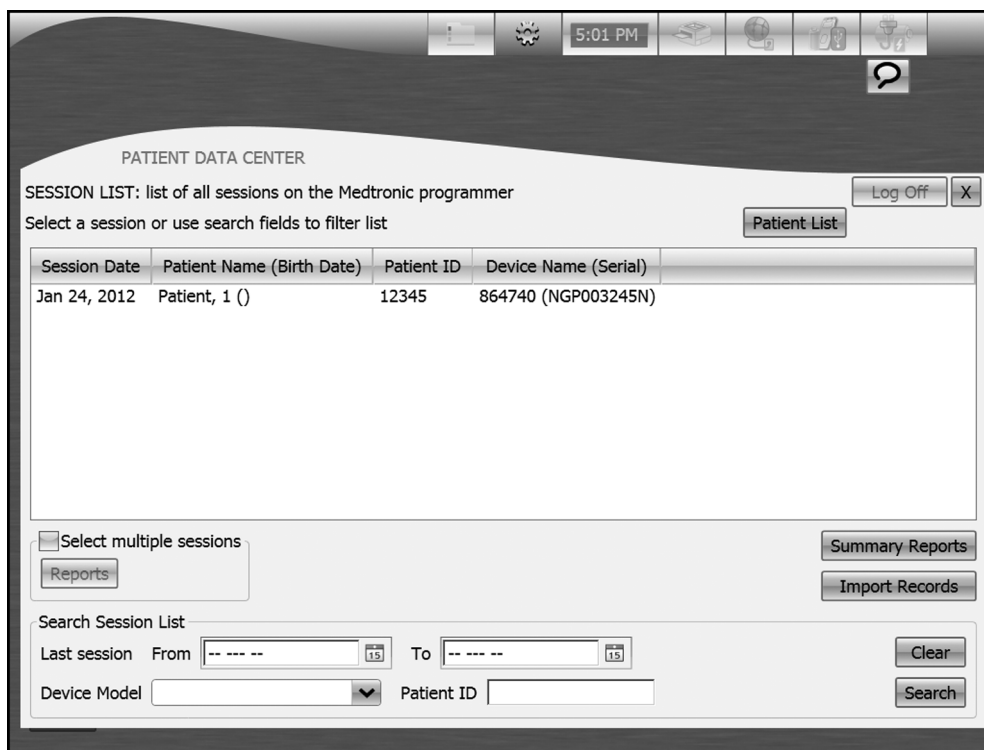The **Session List** button displays the **Session List** when pressed.

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Figure 37. Session List screen from the Patient Data Center.

Note: Once the **Select multiple patients** checkbox has been pressed, the **Reports** button will be enabled. One or more sessions must be selected in order for the buttons to function.

Search Session List allows the list of sessions to be filtered according to the entered search criteria.

To enter search criteria:

1. Press the **Patient ID** input box and enter the patient's ID using the keyboard.
2. Using the **Calendar** buttons next to the **From** and **To** fields, enter the dates that the session occurred between.
3. Select the patient's **Device Model** from the drop-down list.
4. Press the **Search** button.

Notes:

■ Search fields that are left blank are interpreted as "all".

■ For any data entered for **Patient ID**, the search will return records with exact matches or that begin with the entered data. The search is not case dependent.

■ If no **To** date is entered, the search returns records up to the present date.

■ If no **From** date is entered, the search returns all records up to and including the specified **To** date.

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If no records are found matching the search criteria, **No sessions found** appears in the **Session List**.

To delete all search criteria that has been entered, press the **Clear** button.

Reports

Table 9. Creating and distributing reports

Procedure:	Do this:
To create report(s): **Notes:** • The types of reports available are specific to the patient(s) or session(s) that were selected prior to pressing the **Reports** or **Other Reports** buttons. • The **Standard Session Report** will always be an option. The **Standard Session Report** contains information about the settings the device was programmed with at the end of the session. The **Standard Session Report** can also be created by pressing a session row from the **Session List**. • Press the ⓦ button to see a description of the report type. • For more information on the types of reports that are therapy-specific, see the appropriate programmer guide. • Only 15 reports can be created at one time.	1. Press the **Reports** or **Other Reports** button to open the **Create Reports** window. 2. Press the checkbox next to the desired report(s). 3. Select a distribution method by pressing the **View**, **Print**, **Email**, or **Save** button.
To create **Summary Reports**: **Notes:** • The **Patient Summary Report** provides a list of all patients who have a patient record on the programmer. This report can be filtered by a range of dates for the patient's last session. • The **Refill Report** provides a list of all patients who have a patient record on the programmer that is associated with an implantable pump. This report can be filtered by a range of dates for the next refill date.	1. On the **Patient List** or **Session List** screen, press the **Summary Reports** buttons to open the **Summary Reports** window. 2. Press the checkbox next to the desired report(s). 3. Enter **From** and **To** dates using the **Calendar** buttons. 4. Select a distribution method by pressing the **View**, **Print**, **Email**, or **Save** button.
To view reports on the programmer screen:	Press the **View** button. Note: **Previous** and **Next** buttons at the top of the screen will be enabled if multiple reports were created.
To print reports:	1. Press the **Print** button to open the **Printer Selection** window. 2. Select the connected printer from the **Printer** drop-down list. 3. Select the desired number of **Copies** from the drop-down list. 4. Select the desired **Color** option by pressing the radio button. 5. Select the desired **Paper size** from the drop-down list. 6. Select the **Remove patient-identifiable information** checkbox to have patient-identifiable information removed from the report(s) that will print. 7. Press the **Print** button.

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Table 9. Creating and distributing reports (continued)

Procedure:	Do this:
To send reports via email: **Notes:** • Email network settings need to be set up in order to send email. See "Managing the programmer system" on page 40. • Emailed reports are not encrypted. To maintain data encryption, see "Moving patient records from one programmer to another".	1. Enter the email address(es) to send the report(s) to by pressing the **To** input box and using the keyboard. 2. Press the **Email** button to open the **Compose Email** window. 3. Press the **Subject** input box and enter data using the keyboard. 4. Press the large input box and enter other notes using the keyboard. 5. Select the desired **File Format** by pressing the radio button. 6. Select the **Remove patient-identifiable information** checkbox to have patient-identifiable information removed from the report(s) that will be sent via email. 7. Press the **Send** button.
To save reports to a USB flash drive or to a network location: **Notes:** • Network location settings need to be set up in order to save to a network location. See "Managing the programmer system" on page 40. • USB hard drives are not supported. • Saved reports are not encrypted. To maintain data encryption, see "Moving patient records from one programmer to another".	1. Press the **Save** button to open the **Save** window. 2. Select the desired **Location** from the drop-down list. 3. Select the desired **File Format** by pressing the radio button. 4. Select the **Remove patient-identifiable information** checkbox to have patient-identifiable information removed from the report(s) that will be saved. 5. Press the **Save Files** button.

Moving patient records from one programmer to another

Patient records can be exported from one Model 8880CW Clinician Programmer and imported onto another. Patient records can be exported by being saved to a USB flash drive or sent via email. Patient records can be imported from a USB flash drive or network location. Once the patient records are imported, they can be accessed using the **Patient Data Center**.

Notes:

■ Exported patient records are encrypted and can only be read by being imported onto another programmer.

■ Records will be exported in the following file format: [Month-Day-Year-HHMMSS].mdt, where HHMMSS is the time that the file was exported in hours, minutes, and seconds.

■ Information on the programmer will be overwritten by information that is imported onto the programmer. This applies to patient information such as patient address or patient name. No session data will be overwritten.

■ Importing records will not create duplicate records. Records are determined based on the serial number of the primary implantable device.

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Table 10. Exporting and importing patient records

Procedure:	Do this:
To save the selected record(s) to a USB flash drive: **Note:** USB hard drives are not supported.	1. Press the **Export Records** button on the **Patient List** or **Session List** screen to open the **Export Records** window. 2. Press the **Export to File** radio button. 3. Select the **Location** of the USB drive from the drop-down list. 4. If desired, press the **Delete records from this programmer after exporting** checkbox. 5. Press the **Export** button.
To send the selected record(s) via email:	1. Press the **Export Records** button on the **Patient List** or **Session List** screen to open the **Export Records** window. 2. Press the **Export via Email** radio button. 3. Press the **To** input box and enter an email address using the keyboard. 4. If desired, press the **Subject** input box and enter data using the keyboard. 5. If desired, press the **Delete records from this programmer after exporting** checkbox. 6. Press the **Export** button.
To import records onto a programmer:	1. Press the **Import Records** button on the **Patient List** or **Session List** screen to open the **Import Patient Records** window. 2. Select the **Location** to import patient records from from the drop-down list. 3. Select the desired patient record(s). 4. Press the **Import** button.

Removing patient records from the programmer without exporting

On the **Patient List** screen:

1. Press the checkbox.
2. Select one or more patients.
3. Press the **Delete Patient** button.
4. Press the **Delete** button to confirm removal of the patient record from the programmer.

On the **Patient Profile** screen:

1. Press the **Delete Patient** button.
2. Press the **Delete** button to confirm removal of the patient record from the programmer.

Note: If a programming session is active, the patient record that corresponds to that session cannot be deleted. The programming session must first be closed.

Maintenance

⚠**Caution:** Do not modify this equipment. Modification of this equipment can result in damage to the programmer system components, causing the components to malfunction or become unusable.

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△**Caution:** To prevent damage to the programmer system components:

- do not expose to excessive fluid,

- do not immerse in liquid, and

- do not drop.

If any of the programmer system components have been damaged, do not use.

Installing or removing the programmer battery

⚠**Warning:** Use only the rechargeable battery supplied by Medtronic with the Model 8880CW Clinician Programmer. There is a potential danger of explosion if the wrong battery type is used, which may result in damage to the device and injury to the user.

Notes:

- The first time the programmer is used, the battery should be installed and mains electricity through the power supply should be connected for at least 4 hours to charge the battery.

- If the lithium-ion rechargeable battery becomes nonfunctional, dispose of it in accordance with local laws and regulations or return it to Medtronic for disposal.

To install the rechargeable battery in the programmer:
1. Turn off the programmer.
2. Correctly orient the battery in relation to the slot on the back of the programmer.
3. Place the side of the battery without the black connection into the slot first (Figure 38).
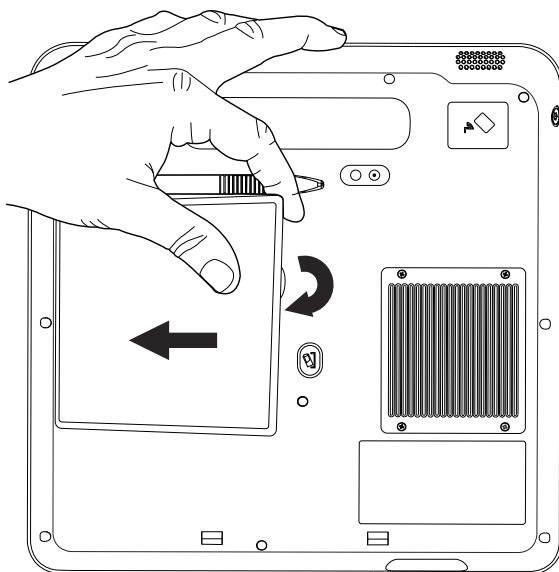4. Press the battery into the slot until you hear it click into place.

Figure 38. Installing the battery.

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To remove the battery from the programmer:

1. Turn off the programmer.

2. Press the **Battery Release** button in until you hear a click indicating the battery has been released (Figure 39).
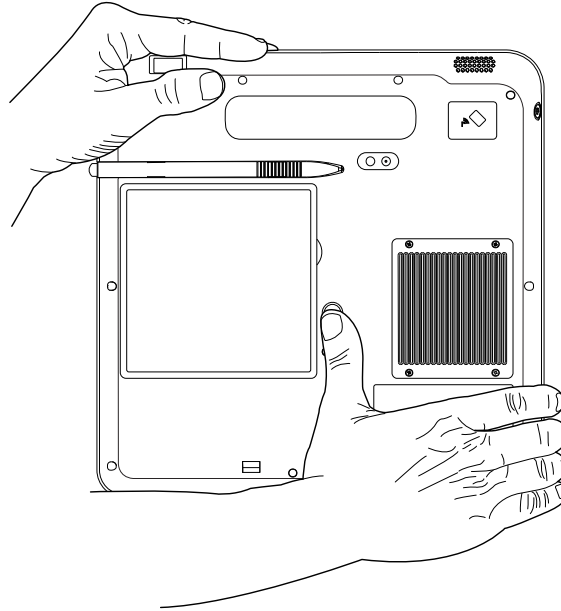
3. Remove the battery from the programmer (Figure 40).
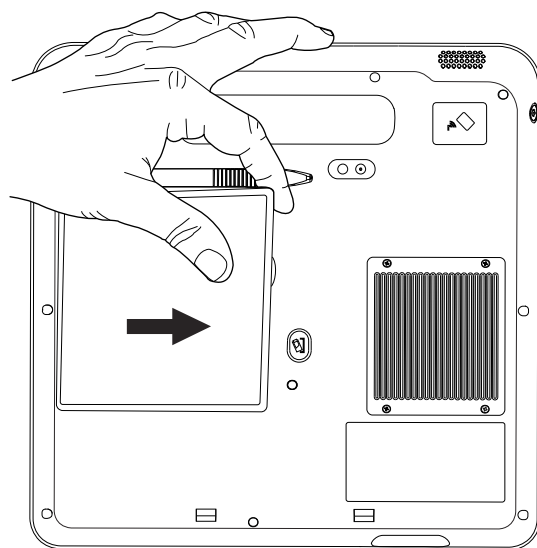
Figure 39. Battery Release button.

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Figure 40. Removing the battery.

Charging the programmer battery

The rechargeable battery can be charged while it is installed in the programmer and mains electricity through the power supply is connected, or by using the optional battery charger supplied by Medtronic.

A fully charged battery powers the programmer for 3.5 to 4.5 hours depending on the user settings. A depleted battery requires 2.5 hours to fully charge.

Note: The first time the programmer is used, the battery should be installed and mains electricity through the power supply should be connected for at least 4 hours to charge the battery.

⚠**Warning:** Use only the power supply and cord supplied by Medtronic. Do not use a portable multiple-socket outlet or extension cord with the system. There is a potential danger of electric shock or excessive heat if the wrong power supply, a portable multiple-socket outlet, or an extension cord is used, which may result in damage to the device and injury to the user.

To use the battery charger:
1. Connect the DC end of the power supply to the power jack of the battery charger.
2. Place the battery into the charger so the connector on the battery aligns with the charger pins (Figure 41).

An orange LED on the battery charger indicates the battery is charging. A green LED indicates the battery is fully charged.
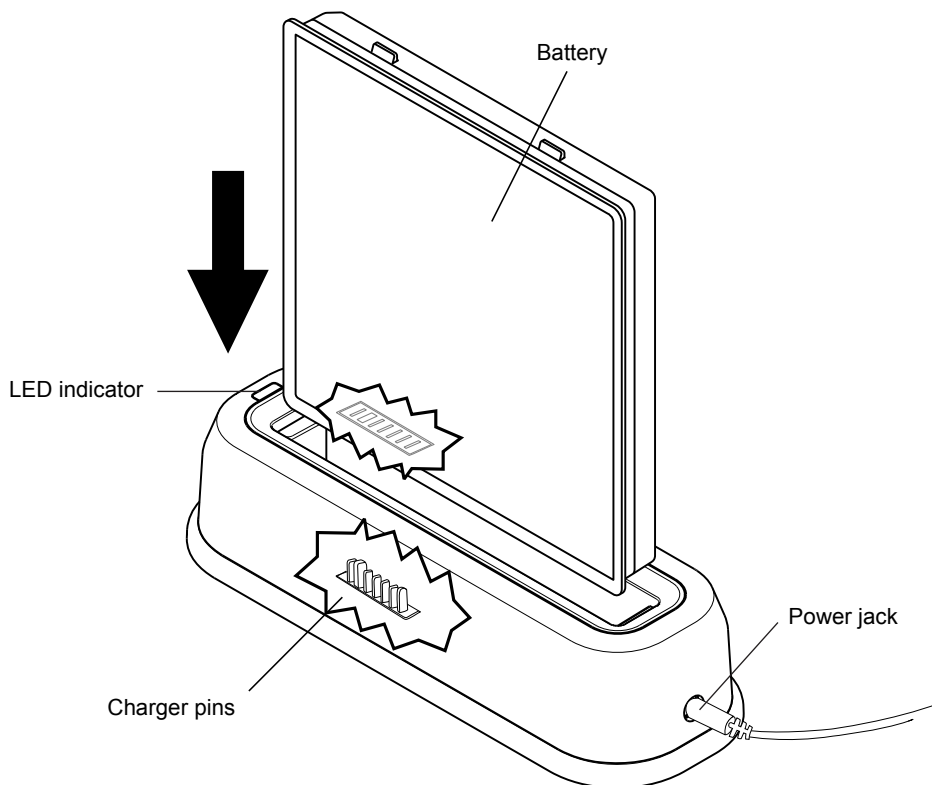
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Figure 41. Using the battery charger.

Changing the batteries in the telemetry head

△**Caution:** If the device will not be used for 2 weeks, remove the batteries from the device. A battery left in the device may corrode, causing damage to the electronic components.

Notes:

■ Before inserting batteries, check for signs of battery leakage. If any residue is present, do not use.

■ Dispose of depleted batteries in accordance with local laws and regulations.

The Model 8880T2 Telemetry Head requires 2 AAA alkaline batteries.

To change the telemetry head batteries:

1. Release the battery compartment lid by sliding it downward (Figure 42).
2. Lift the battery compartment lid (Figure 43).
3. Remove depleted batteries.
4. Insert 2 new AAA alkaline batteries according to the orientation indicated on the inside of the battery compartment.

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5. Close the battery compartment lid.

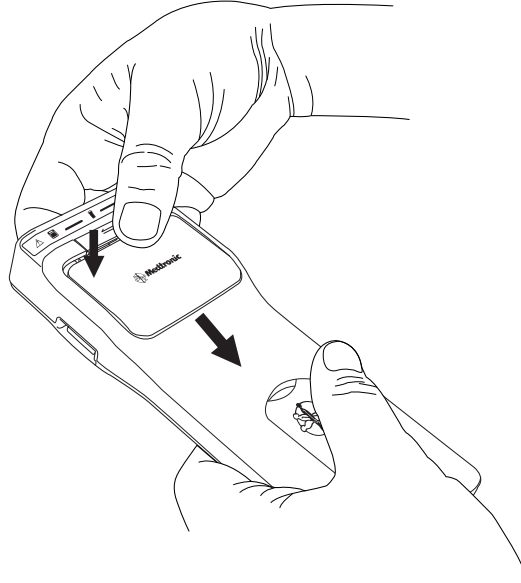6. Secure the battery compartment lid by sliding it upwards.
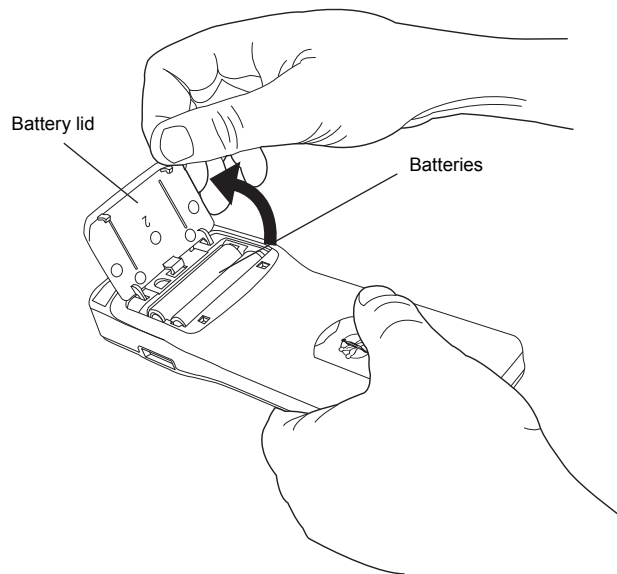

Figure 42. Battery compartment lid.

Figure 43. Battery compartment.

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Calibrating the touchscreen

△**Caution:** Scratches on the touchscreen may interfere with selecting an option. If the touchscreen is not responding appropriately, return the programmer to Medtronic for repair or replacement.

△**Caution:** If the touchscreen does not function as expected, the touchscreen may need to be calibrated. Using the programmer while the touchscreen is out of calibration may result in unintended programming or function selection.

Touchscreen calibration will increase the accuracy of the stylus pen.

To calibrate the programmer touchscreen:
1. Press the **Control Menu** button on the **Control Panel**.
2. Press the **Utilities** button in the **Control Menu**.
3. Press the **Calibrate Display** button in the **Utilities** window.
4. Press the stylus pen on the center of each target that is presented for 2 seconds.
5. Follow all instructions provided on the programmer screen.

To close the calibration function before it is compete, press the **Cancel** button.

Cleaning

When needed, clean the programmer and system components according to the following guidelines:

■ Always unplug the power supply from mains electricity before cleaning.

■ Keep liquid, including cleaning fluid, out of any openings.

■ Do not use spray cleaner directly on the products.

■ Do not use harsh or caustic chemical products. Use water or a mild cleanser.

■ Clean with a soft dry or lightly dampened cloth.

Troubleshooting

For assistance or for questions about the programmer and system components, contact the appropriate representative listed on the inside back cover of this manual.

Clinician programmer error messages

Table 11. Clinician programmer error messages

Problem	Possible Solution
Serious programmer error has occurred.	Report the issue to Medtronic before restarting the programmer.

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Table 11. Clinician programmer error messages (continued)

Problem	Possible Solution
The programmer has 10% or less of disk space available.	Export and delete patient records in order to free disk space. See "Moving patient records from one programmer to another" on page 50 or "Removing patient records from the programmer without exporting" on page 51.
The programmer displays an empty blue screen.	Restart the programmer. To restart the programmer, press and hold the **Power** button for 8 seconds.
	If the problem persists, contact Medtronic.

Network connection troubleshooting

Table 12. Network connection troubleshooting

Procedure	Problem	Possible Solution
Accessing a network via Ethernet:	The docking station is not powered.	Check that the docking station is connected to mains power through the power supply. The LED indicator on the power supply and the LED indicator on the front of the docking station should be on.
	The Ethernet cable is not connected.	Check that the Ethernet cable is connected to the docking station and to the wall jack. The LED indicator within the Ethernet socket of the docking station will flash if a connection is made.
	Network settings on the programmer may not have been configured or may be incorrect.	Check the information in the **Network Settings** tab of the **Network window**. (See "Managing the programmer system" on page 40.) **Note:** Consult your IT department or network documentation to determine the correct settings for your location.
Accessing a WLAN:	The wireless radio of the programmer is disabled.	1. Disconnect the Ethernet cable. 2. To enable the wireless radio and connect to a wireless network, see "Managing the programmer system" on page 40.
	Network settings on the programmer may not have been configured or may be incorrect.	Check the information in the **Wireless** tab of the **Network** window. (See "Managing the programmer system" on page 40.) **Note:** Consult your IT department or network documentation to determine the correct settings for your location.
Also check:	There may be a problem with the network.	Check that you are able to connect a clinic or hospital computer to the network and that network locations can be accessed from the computer.

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Printer connection troubleshooting

Table 13. Printer connection troubleshooting

Procedure	Problem	Possible Solution
Printing via a printer USB cable:	The docking station is not powered.	Check that the docking station is connected to mains power through the power supply. The LED indicator on the power supply and the LED indicator on the front of the docking station should be on.
	The printer USB cable is not connected.	Check that the printer USB cable is connected to the USB port on the docking station (or programmer if the programmer is undocked).
	There may be a problem with the docking station.	Connect the printer USB cable to the USB port on the programmer.
	The printer driver may not be compatible with the programmer.	Consult your printer manufacturer to determine the correct page description language, eg, PS (PostScript) or PCL (Printer Command Language). Compatible printer drivers are PCL3, PCL3e, PCL4, PCL5C (color), PCL5e, PS2, PS2 (color), PS3.
Also check:	You are trying to print to the wrong printer.	Check that the correct default printer is selected for use, see "Managing the programmer system" on page 40.
	There may be a problem with the printer.	1. Print a test page, "Managing the programmer system" on page 40. 2. Contact the printer manufacturer for printer-specific troubleshooting information.

Resetting the Patient data security password

To reset the **Patient data security** password:

1. Open the **Preferences** window.

2. Press the **Patient Data Security** tab.

3. Press the **Reset Password** button.

4. Contact US Medtronic Technical Services at +1-800-328-0810 and provide the reset code displayed in the **Reset Password** window.

5. Press the **Medtronic password** input box and use the keyboard to enter the password provided by Medtronic.

6. Press the **New password** input box and use the keyboard to select characters.

7. Press the **Confirm New Password** input box and use the keyboard to select characters that match the new password.

8. Press the **OK** button.

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Safety and technical checks

Periodic safety checks are not required for the clinician programmer or system components.

Periodic maintenance of the programmer system is not required. The programmer system does not contain serviceable components.

If a component of the programmer system requires repair or is nonfunctional, contact your Medtronic representative listed on the inside back cover of this manual. For repair or disposal, send products to the appropriate address.

USA and Asia-Pacific countries

Medtronic Neuromodulation
Repair Lab RCC135
Dock B
7000 Central Ave. N.E.
Minneapolis, MN 55432-3576

Europe, Africa, and Middle East countries

Medtronic EOC
Earl Bakkenstraat 10
Industry Park Trilandis
Heerlen, 6244PJ
The Netherlands

Canada

Medtronic Canada
6733 Kitimat Road
Mississauga, Ontario
Canada, L5N1W3

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Contacts:

Asia: Medtronic International Ltd.
Tel. 02919-1362
Fax 02907-3998

Medtronic Asia Ltd.

Tel. (02)-548-1148
Fax (02)-518-4786
Australia: Medtronic Australasia Pty. Ltd.
97 Waterloo Road
North Ryde, NSW 2113
Australia
Tel. +61-2-9857-9000
Fax +61-2-9878-5100
Toll free 1-800-668-6700
Austria: Medtronic Österreich GmbH
Tel. 01-240440
Fax 01-24044-100
Belgium: Medtronic Belgium S.A.
Tel. 02-456-0900
Fax 02-460-2667
Canada: Medtronic of Canada Ltd.
Tel. (1-905)-460-3800
Fax (1905)-826-6620
Czech Republic: Medtronic Czechia s.r.o.
Tel. 2-965-795-80
Fax 2-965-795-89
Denmark: Medtronic Danmark A/S
Tel. 45-32-48-18-00
Fax 45-32-48-18-01
Finland: Medtronic Finland Oy/LTD
Tel. (09)-755-2500
Fax (09)-755-25018
France: Medtronic France S.A.S.
Tel. 01-5538-1700
Fax 01-5538-1800
Germany: Medtronic GmbH
Tel. (02159)-81490
Fax (02159)-8149100
Greece: Medtronic Hellas S.A.
Tel. 210-67-79-099
Fax 210-67-79-399
Hungary: Medtronic Hungária Kft.
Tel. 1-889-06-00
Fax 1-889-06-99
Ireland: Medtronic Ireland Ltd.
Tel. (01)-890-6522
Fax (01)-890-7220

Italy: Medtronic Italia SpA
Tel. 02-241371
Fax 02-241381

Tel. 06-328141
Fax 06-3215812
Japan: Medtronic Japan
Tel. 03-6430-2016
Fax 03-6430-7110
Latin America: Medtronic, Inc.
Tel. (1305)-500-9328
Fax (1786)-709-4244
Norway: Medtronic Norge AS
Tel. 067-10-32-00
Fax 067-10-32-10
Poland: Medtronic Poland Sp. z.o.o.
Tel. (022)-465-69-00
Fax (022)-465-69-17
Portugal: Medtronic Portugal, Lda.
Tel. 21-724-5100
Fax 21-724-5199
Russia: Medtronic Russia
Tel. (8495) 580-7377
Fax (8495) 580-7378
Slovakia Medtronic Slovakia, o.z.
Tel. 0268 206 911
Fax 0268 206 999
Spain: Medtronic Ibérica, S.A.
Tel. 91-625-0400
Fax 91-650-7410
Sweden: Medtronic AB
Tel. 08-568-585-00
Fax 08-568-585-01
Switzerland: Medtronic (Schweiz) AG
Tel. 031-868-0100
Fax 031-868-0199
The Netherlands: Medtronic B.V.
Tel. (045)-566-8000
Fax (045)-566-8668
U.K.: Medtronic U.K. Ltd.
Tel. 01923-212213
Fax 01923-241004
USA: Medtronic, Inc.
Tel. (1763)-505-5000
Fax (1763)-505-1000
Toll-free: (1-800)-328-0810

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Medtronic

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Contacts for specific countries are listed inside this cover.

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