

Addendum to Navigator GPS[™] System User and Service Manual Wireless Upgrade



Manufactured by: Dilon Technologies, Inc. 12050 Jefferson Avenue Suite 340 Newport News, VA 23606 USA Phone: 757-269-4910 Authorized European Representative: **AG Medical** Route de l'Orme, Parc des Algorithmes - Imm. "Homère" 91190 Saint-Aubin France http://ag-medical.com/





Important Note

This document, and the information contained therein, is proprietary information of Dilon Technologies and may not be reproduced, copied in whole or in part, adapted, modified, disclosed to others, or disseminated without prior written consent of the Dilon Technologies. This document is intended to be used by customers as part of their Dilon Technologies equipment purchase.

Dilon Technologies provides this document without warranty of any kind, implied or expressed, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Dilon Technologies has taken care to ensure the accuracy of this document. However, Dilon Technologies assumes no liability for errors or omissions, and reserves the right to make changes without further notice to any products herein, to improve reliability, function, or design. Dilon Technologies may make improvements or changes in the products or programs described in this document at any time.

Navigator GPS is a trademark of Dilon Technologies.

Other trademarks and trade names are those of their respective owners.

Copyright Notice

Copyright 2014 Dilon Technologies, Newport News, VA 23606 United States of America.

Trademarks

Dilon Technologies[™] is a registered trademark of Dilon Technologies.

All other company and product names are trademarks or registered trademarks of their respective owners.

Part Number

WP-5220-00-001 Rev 0 / July, 2014

User Manual

1. Introduction	4
Description	4
Intended Use	4
Indications for Use	4
Manufacture and Distribution	4
Trademarks	4
Regulatory and Safety Requirements	5
2. Product Overview and Components	7
3. Precautions	8
3A. General	8
3B. Wireless Pilot Probe, Wireless Receiver and Navigator GPS Control Unit	8
4. Wireless Receiver	9
4A. Isotope Control	9
5. Cleaning, Disinfection, and Sterile Use of the wireless Pilot Probe	11
5A. Wireless Pilot Probe only	11
5B. Radioactive Decontamination Procedure – OPTIONAL	
5C. Cleaning/Storing Wireless Receiver	
6. Probe Connectivity and Use	14
Navigator GPS System with Wireless Upgrade	14
7. Troubleshooting	19
8. Specifications	20
9. Support Items	21
9A. Product Part Numbers	21
9B. Sterile Drape	21
10. Maintenance	
10A. Component Check	
10B. Verification of Standard Gain (Calibration Quick Test)	
11. Repair	24
12. Limited Warranty	25

USER MANUAL

1. Introduction

Description

This addendum to the *Navigator GPS™ System User/Service Manual (PN GP-9200-96EN)* details how to use the *Wireless Upgrade* option for existing Navigator Gamma Positioning Systems. This optional feature adds wireless gamma probe capability to Navigator GPS Control Units (PN-GP 2800-00).

Use this addendum as a supplement to the Navigator GPS[™] System User/Service Manual. If this manual is not readily available, download the electronic version from <u>www.Dilon.com</u>.

The wireless receiver, when paired with the control unit, can only be used with the Wireless Pilot Probe[™].

The system is supplied non-sterile. This addendum includes guidelines for the use of the Wireless Pilot Probe and accessories within the sterile field.

Intended Use

For the detection and quantification of gamma radiation from gamma-emitting isotopes in the body or tissues. Use for non-imaging procedures to measure the amount of radionuclide absorbed by a particular organ or body region.

Indications for Use

For the detection and quantification of gamma radiation from gamma-emitting isotopes in the body or tissues. Use for non-imaging procedures to measure the amount of radionuclide absorbed by a particular organ or body region in open-surgical procedures.

Manufacture and Distribution

The system is manufactured and distributed by Dilon Technologies of Newport News, VA. Please direct all inquiries to Dilon Technologies.

Trademarks

The following are trademarks of Dilon Technologies: Navigator 2.0[™], Wireless Pilot Probe[™], Dilon Navigator GPS[™], Dilon Navigator[™], Dilon Technologies Navigator GPS[™], Dilon Technologies Navigator[™], Dilon Technologies Navigator[™], Dilon Technologies Navigator[™], and Navigator[™] when used in context with the above.

Navigator GPS[®] is a registered trademark of Dilon Technologies.

Regulatory and Safety Requirements

The Dilon Navigator GPS[™] System including Probes and accessories complies with the following standards:

EC Directives

EMC Directive 89/336/EEC Group I, Class B EN 55011 EMC Directive 89/336/EEC IEC 60601-1-2: 3rd Edition

Reciprocal Interference

The Wireless Upgrade components were designed, manufactured, and tested in accordance to the following standards recognized for Medical Devices under Directive 93/42/EEC: 1993. This product has been certified and tested by 3rd party testing facilities.

- Medical Electrical Equipment Part 1: General requirements For Safety 1: Collateral Standard: Safety Requirements For Medical Electrical Systems – IEC 60601-1-1: 3rd Ed.
- Medical Electrical Equipment Part 1: General Requirements For Safety -Collateral Standard: Electromagnetic Compatibility - Requirements and Tests – IEC 60601-1-2: 3rd Ed.
- Medical Electrical Equipment Part 1: General requirements For Safety 1: Collateral Standard: Safety Requirements For Medical Electrical Systems – IEC 60601-1: 2nd & 3rd Ed.
- Medical Electrical Equipment Part 1: General Requirements For Safety -Collateral Standard: Electromagnetic Compatibility - Requirements and Tests – IEC 60601-1-2: 3rd Ed.
- Medical Electrical Equipment Part 1-6: General Requirements For Safety Collateral Standard: Usability IEC 60601-1-6: 3rd Ed.
- Information supplied by the manufacturer of medical devices- EN 1041:2008
- Symbols for use in the labeling of medical devices EN 980 :2008
- CAN/CSA C22.2 No. 60601-1, "Medical Electrical Equipment, Part 1: General Requirements for Safety & Essential Performance; issued 2008-02-01 Ed. 2
- AS/NZS 3200-1-0, Deviations to IEC 601-1 for Application in Australia and New Zealand





CAUTION: Federal (USA) law restricts this device to sale and use by, or on the order of, a physician.

	Attention, consult accompanying documents
Rx only	RX only Caution: Federal (USA) law restricts this device to sale and use by, or on the order of, a physician.
	Probe
^{In111} 7 - ^{I131} ^{Tc99} 7 - ^{I125}	Isotope Control
-15° C	Acceptable shipping/storage conditions: -15°C to 40°C
SN	Serial number
LOT	Lot #, or batch code

 Table 1. Explanation of Symbols

FCC statements: "This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation."

IC statements: "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."

Cet appareil est conforme avec Industrie Canada RSS exemptes de licence standard (s). Son fonctionnement est soumis aux deux conditions suivantes: (1) Ce dispositif ne doit pas causer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris les interferences qui peuvent causer un mauvais fonctionnement de l'appareil.

2. Product Overview and Components



Table 2A-1. Probe Dimensions

Probe	Tip Diameter	Tip Angle	Length	Weight
Wireless Pilot Probe	14mm	35°	260mm	255g

Table 2A-2. Receiver Dimensions

Receiver	Height	Depth	Weight
Wireless Pilot Probe Receiver	25mm	68 mm	15g

3. Precautions

3A. General

The output of this system is not to be considered a diagnostic measure of the extent of disease in the patient, nor the recommended source of therapy.

• Failure to thoroughly review and adhere to the information contained in this addendum and the Navigator GPS System User/Service Manual may pose a potential hazard to the patient and/or user and may void the warranty.

3B. Wireless Pilot Probe, Wireless Receiver and Navigator GPS Control Unit

- Replace the wireless probe battery with a new battery on EACH day of use, before the first surgical procedure.
- This system is not designed for use in an explosive atmosphere.
- Keep the control unit off while connecting the wireless receiver.
- The probes, probe batteries, receiver and control unit are sold non-sterile.
- No components should be sterilized.
- DO NOT put any probe in an autoclave.
- With the exception of the Wireless Pilot Probe's battery bay, DO NOT attempt to open probes.
 - All probes are tested and sealed at the factory. Attempting to open the probe may cause damage and will void the warranty.
- DO NOT drop the probe.
- DO NOT strike the probe tip against a hard surface; the detector element may become damaged and no longer be able to measure radiation.
 - This will also void the warranty.

4. Wireless Receiver

4A. Isotope Control



The wireless receiver allows the user to adjust the system's isotope setting, specific to the isotope in use. When the wireless receiver is connected to the control unit, and the control unit is turned on, the isotope control will automatically default to the Tc99 setting.



CAUTION:

It is important that the isotope control is set to the isotope to be used in the procedure. Setting the isotope control incorrectly will result in incorrect detection.

Table 4A-1. Isotopes

Switch set on: I125	Switch set on: 511keV	Switch set on: In111	Switch set on: Tc99
lodine-125	¹⁸ F-FDG (and I131)	Indium111	Technetium-99m

The Wireless Receiver and Navigator GPS Control Unit must both be set to the same isotope setting.

For Navigator GPS units built after 2006, the isotope control setting on the back of the device will illuminate the corresponding light on the control unit's isotope indicator.



For earlier Navigator GPS systems that lack the isotope indicator (built between 1999 and 2006), check the back of the control unit to ensure that the isotope setting switch matches the isotope specified on the receiver.

Control Display	Description
	Power LED: Indicates that the signal between receiver and Pilot Probe is connected. It will flash during receiving transmission from the probe
Tc99 - In111 - 511keV - I125	Isotope Indicators: Select the isotope to be detected by the control unit. Be sure to select the same isotope on the back of the Control Unit as well. See "Isotope Control" section of Navigator GPS System User/ Service Manual for more information.

Table 4A-2. Controls and Displays on the Front of the Wireless Receiver

5. Cleaning, Disinfection, and Sterile Use of the wireless Pilot Probe

All probes require cleaning and disinfecting immediately after use. Follow these steps to ensure that cleaning and disinfection are done correctly.

- Before Use, visually inspect probe to ensure that it is free of contamination
- **During Use**, place probe in a sterile drape
- After Use, Clean/Disinfect/Store Probe
- **OPTIONAL**: Radioactive Decontamination Procedure –(see section 5B)

5A. Wireless Pilot Probe only

The Wireless Pilot Probe and all other Dilon probes and accessories are sold non-sterile.

WARNING! Before cleaning, inspect probe to ensure its integrity. Compromised probes can be further damaged as a result of the cleaning process. Probes in poor condition due to wear and fatigue should be returned to Dilon Technologies for repair.

Preparation for cleaning:	Remove battery from Wireless Pilot Probe, and secure battery cap to the bottom		
cleaning.	of probe before cleaning.		
Cleaning Equipment:	Enzymatic detergent, OPA high-level disinfectant, running water		
Cleaning Method:	 Rinse the outside surfaces of the probe with a brisk stream of lukewarm tap water (98 °F to 105 °F / 36.5 °C to 40.5 °C). Prepare enzymatic cleaner, suitable for surgical instruments, according to the manufacturer's recommendation. Swirl the proximal end of the probe in enzymatic cleaner for a minimum of 10 seconds. Thoroughly scrub the plastic end-cap with a toothbrush-style, latex-free nylon bristle cleaning brush (i.e. Key Surgical N-3000, or a similar brush). Lightly scrub the probe and lens with a latex-free nylon bristle cleaning brush. Repeat separately for collimator cleaning, if used. Wipe the entire probe with soft cloth or sponge soaked in enzymatic cleaner. Visually inspect device(s) for contaminated areas. Repeat steps 2 through 5 until visual inspection reveals instrument(s) is clean. Rinse equipment with a brisk stream of lukewarm tap water (98 °F to 105 °F / 36.5 °C to 40.5 °C) for 30-seconds. Prepare OPA high-level disinfectant solution according to manufacturer's instructions. Immerse probe completely for a minimum of 12 minutes at 68 °F (20 °C) or higher, to destroy all pathogenic microorganisms. Note that probes that are compromised can be damaged if detergent seeps into them. Rinse with a brisk stream of tap water (98 °F to 105 °F / 36.5 °C to 40.5 °C) for approximately 1 minute. Repeat rinse two additional times. 		
Drying:	Air-dry or dry with clean towel.		

Table 5A-1. Cleaning

CAUTION:



Do not contaminate other items by wiping them with used cleaning solution.



CAUTION:

The cleaning instructions provided above have been validated by the medical device manufacturer, for preparing this device for re-use. It remains the responsibility of the re-processor to ensure that the reprocessing is actually performed using qualified equipment, materials, and personnel in the processing facility, to achieve the desired result. This requires validation and routine monitoring of the process. Likewise, any deviation by the processor from the instructions provided should be properly evaluated for effectiveness and potential adverse consequences.

5B. Radioactive Decontamination Procedure – OPTIONAL

An increase in background counts may signal radioactive contamination of the probe or the environment. If a process of elimination shows the probe to be contaminated with radioactive material, the probe must be decontaminated.

- 1. Decontaminate the probe using standard Nuclear Medicine Department techniques, which may involve washing the probe with a solution such as Radiacwash[™].
- 2. Ensure that all recesses, crevices, and mating surfaces are clean.
- 3. Dispose of pads and cleaning solution in approved containers.

5C. Cleaning/Storing Wireless Receiver

- 1. If unclean, wipe wireless receiver with a soft cloth moistened with mild soap and water. Dry with a soft cloth.
- 2. Store the receiver in a clean, safe environment.



CAUTION:

Follow universal, generally accepted practices when handling components that have come in contact with blood or tissue.

6. Probe Connectivity and Use

Navigator GPS System with Wireless Upgrade



The Navigator GPS is compatible with the wireless Pilot Probe. A typical sequence of setting up the Wireless Pilot Probe for a procedure with Technetium-99m isotope (such that would be used in a lymphatic mapping procedure for a sentinel node biopsy) is as follows:

6-1. Before Surgery

- Insert a fully charged PowerPak (battery) into the Navigator GPS control unit (see Navigator GPS System User/Service Manual for insertion instructions).
- Attach the wireless receiver to the cable port on the front of the control unit. Note that the isotope indicator will default to Tc 99 when turned on. An LED will illuminate on the receiver once the control unit is on.



- Upon initial insertion of new Wireless Pilot Probe battery, probe may need to be lightly shaken to activate LED in probe base.
- A flashing LED on the Pilot Probe indicates that it is linked with control unit and ready for use. When placed in a resting position, the LED turns off within seconds, to save energy. When the Pilot Probe is moved, it instantly powers up for immediate use.
- For intraoperative use, insert the Wireless Pilot Probe into a sterile drape.
- Insert a probe battery into the Pilot Probe as follows.
- •
- 1. Hold probe firm; turn battery cap counterclockwise and remove from probe. Inspect O-ring integrity. If O-ring is missing or damaged, use new battery cap. Contact Dilon Technologies or your distributor for battery cap reorder information.



2. Install one 3V CR 2 lithium battery in Pilot Probe battery holder with **positive (+) end** facing toward the base of the probe and negative (-) end toward the middle of the probe. Incorrect placement of battery into battery holder for extended periods of time will cause battery to drain quickly.



3. Insert battery holder into probe negative (-) end in. Lightly turn until holder lowers into place.



- 4. Hold probe firm; push battery cap into probe and turn clockwise until O-ring is no longer visible.
 - Upon initial insertion of new Wireless Pilot Probe battery, probe may need to be lightly shaken to activate LED in probe base.
 - LED on the Pilot Probe indicates that it is linked with control unit and ready for use. When placed in a resting position, the LED turns off within seconds, to save energy. When the Pilot Probe is moved, it instantly powers up for immediate use.
 - For intraoperative use, insert the Pilot Probe into a sterile drape.

Table 6-1. Wireless Receiver - LED Power Indicator

Indication	Status
On/Flashing	Wireless receiver and Wireless Pilot Probe are linked and ready for use.
Off	The GPS system is off, or there may be a connection error between the receiver and the control unit.

Table 6-2. Wireless Pilot Probe LED Indicator

Indication	Status
On/Flashing	Probe is linked and ready for use
	Probe is in a resting position to conserve power; to reactivate LED indicator, simply pick up probe, or if needed, lightly shake probe.
Off	If no power upon ready to use, the battery needs to be installed or replaced.
	If battery has been replaced and LED light is still off, contact your distributor or Dilon Technologies directly.

6-2. During Surgery

•

NOTE: For Technetium-99m (Tc 99), the control unit settings are given in the following table.

Table 6-3. Navigator GPS with Wireless Pilot Probe - Settings and Indicators w/ Tc 99 Example

Control/Indicator	Setting	
Controls (back of Control Unit)		
SCAN/Calibrate	SCAN	
Isotope	Tc 99	
	Indicators (front of the Control Unit)	
Range	1x	
Threshold	Illuminated; this control is for CABLED PROBES only.	
	The Wireless Pilot Probe features integrated threshold, which controls the count range of photon energy detected by the probe.	
Display	0	
Isotope	Тс 99	
Prob	e LED Indicator (bottom of the Pilot Probe handle)	
Probe LED	Illuminated/Flashing	
Wireless Receiver		
Receiver LED	Illuminated/Flashing	
Isotope	Тс 99	

6-3. After Surgery

• See: 'Cleaning, Disinfection, and Sterile Use of Probe' (Section 5).

SERVICE MANUAL

7. Troubleshooting

With the exception of the Wireless Pilot Probe's battery holder, there are no serviceable components within the Wireless Pilot Probe body, or wireless receiver. Contact your representative or Dilon Technologies for additional assistance if more detail is required.

Table 7.1 Nevinator CDC Control Unit with WI	DELECC DU OT DDODE. Cattings and Indicators
Table 7-1. Navigator GPS Control Unit with Wi	RELESS PILOT PROBE- Settings and Indicators

Problem	Possible Causes	Remedies
1. Zero in display. No signal under presence of a radioactive source.	No connection between probe, receiver and control unit.	Check that the connection between the receiver and control unit is secure.
	No connection between probe, receiver and control unit.	Replace the probe battery
	Isotope control indicates incorrect isotope.	Change isotope control (on front of wireless receiver) to desired isotope.
	Circuit inside the control unit has been damaged.	Try a different control unit. Contact Dilon Technologies for assistance.
	Probe is damaged.	Try a different probe, or contact Dilon Technologies for assistance.
	Wireless receiver is damaged.	Try a different receiver, or contact Dilon Technologies for assistance.
2. LED on wireless receiver does not illuminate when power is on.	No connection between wireless receiver and control unit.	Check that the wireless receiver is securely connected to the control unit.
	LED on wireless receiver is damaged.	Contact Dilon Technologies for assistance.
3. Isotope control on wireless receiver does not illuminate when power is on.	No connection between wireless receiver and control unit.	Check that the connection between the wireless receiver and control unit is secure.
	LED on wireless receiver is damaged.	Contact Dilon Technologies for assistance.
4. LED on Pilot Probe does not light as indicated	LED on probe is damaged.	Contact Dilon Technologies for assistance.
	Probe LED is illuminated but not transmitting signal to unit (LED flashes when transmitting)	Gently shake probe to activate connectivity.
	Probe battery is dead.	Replace with new battery.
	Battery was not installed.	Install new battery.

8. Specifications

The Wireless Upgrade consists of the wireless receiver, Wireless Pilot Probe, and probe batteries.

Table 8A-1. Wireless Upgrade Specifications	able 8A-1	. Wireless	Upgrade	Specifications
---	-----------	------------	---------	----------------

Item	Description
Wireless Pilot Probe Power Source	Replaceable, Internal battery
Battery	Single use CR2; 3 V Lithium; capacity 1550 mAh
Wireless Pilot Probe Transmission Distance	Up to 9 meters
Industry Standard Wireless Operating Frequency	2.4 GHz
Visual Indicators	Wireless Receiver:
	 Power On – LED Isotope – LED (four)
	Wireless Pilot Probe:
	 Probe Connection – LED Isotope – LED (four)
Storage Conditions	Operating Temperature Range: 15°C to 40°C (5°F to 104°F)
	Humidity: 0%-80% relative humidity
	Atmospheric Pressure: 50 kPa to 106 kPa

9. Support Items

The Wireless Upgrade is typically supplied as a complete system (Part # WP-9220-00). Support items may be purchased from the local Dilon Technologies Navigator representative. At time of publication of this addendum, the primary support items have the following part numbers. Feel free to contact your local representative for additional information.

9A. Product Part Numbers

Table 9A-1. Product Part Numbers

Item	Dilon Part Number
Wireless Receiver for Navigator GPS	WP-8000-01
Wireless Pilot Probe	WP-9000-14
Wireless Pilot Probe Batteries (Pack of 10)	WP-8500-01
Wireless Pilot Probe Battery End Cap	WP-2000-10
Wireless Pilot Probe Battery Holder	WP-9050-00
Optional Top Gun Collimator	SP-1800-00

9B. Sterile Drape

A sterile drape is an accessory that is not sold or supported by Dilon Technologies. Typical characteristics of a suitable intra-operative probe drape are as follows:

- Universal Gamma Probe Cover 5 x 24
- Sized with tapered tip to fit both straight and flexible probes
- Low density, soft polyethylene
- Telescopically folded w/rubber bands and medical grade tape strips
- Drape features:
 - All components, including rubber bands, guaranteed 100% Latex-free
 - All available EtO Sterile
 - Strong and durable Anti-Static material

10. Maintenance

10A. Component Check

While Wireless Upgrade is virtually maintenance-free, a check of each system component for any visible signs of abuse, neglect, or wear, should be conducted before each use and storage. This includes checking the following:

Table 10A-1. Component Check

Component	Feature	
Wireless Pilot Probe	Overall check - Also probe bay, battery cap and O-ring	
Wireless Receiver	Overall check - Housing, integrity of its electrical connector and the connector pins	

Do not use a damaged probe, wireless receiver, or probe batteries. *Should abnormalities be discovered, contact Dilon Technologies directly.*

10B. Verification of Standard Gain (Calibration Quick Test)

All Dilon Technologies Navigator systems are designed to minimize periodic maintenance, such that may be performed by a clinical engineering department or the manufacturer. Some institutions, however, do choose to perform 'Verification of Standard Gain' tests every six months or every year. The procedure does not calibrate the system; it simply reveals whether or not the probe and control unit are set to a common gain standard (calibration). That common standard relates the gamma photon energy detected by the probe, to an energy window inside the control unit.

The Verification of Standard Gain uses 122 keV energy photons produced by the Isotope of Cobalt-57 to create a known signal in the probe. The control unit expects these detected photons to be in an energy window corresponding to the CENTERED position of the test. The control unit also has a test setting for an energy window BELOW the expected signal, and an energy window for a signal ABOVE the expected signal. The desired outcome of the test is that the signal is greatest in the CENTERED position, as revealed by the highest count rate seen in the control units' display. The details of the test are given below.

10B-1. Verification of Standard Gain (Calibration Quick Test) – Procedure

- 1. Clean the PROBE.
- 2. Charge the POWERPAK, and install it into the CONTROL UNIT.
- 3. Place the system controls as indicated in Table 10B-1, "System Configuration Cobalt-57 Alignment."
- 4. Align a Cobalt-57 source directly with the probe tip. Maintain this **exact** position between the source and the probe tip for the duration of the test.
- 5. Place the system controls as indicated in Table 10B-1 "System Configuration Cobalt-57 Alignment."
- 6. Place the SCAN/Calibrate Control in the CENTERED position, which is indicated by the following symbol on the SCAN/Calibrate Control (>0<). Obtain a ten-second count. Record this total.
- 7. Place the SCAN/Calibrate Control in the BELOW position which is indicated by the

following symbol on the SCAN/Calibrate Control (-). Press the COUNT control to obtain a ten-second count. Record this total.

- 8. Place the SCAN/Calibrate Control in the ABOVE position which is indicated by the following symbol on the SCAN/Calibrate Control (+). Obtain a ten-second count. Record this total.
- 9. The highest count should be when the SCAN/Calibrate Control is in the CENTERED (>0<) position. The count in the ABOVE position (+) and the count in the BELOW position (-) should be less than the count in the CENTERED (>0<) position. The observance of these relationships verifies that the probe and control unit have the same standard gain.
- 10. Return the SCAN/Calibrate Control to the SCAN position.
- 11. Return the other system controls to the settings for normal use.
- 12. End of Test.
- **NOTE:** Because the system is designed to detect slight changes in the location and intensity of radioisotopes, the test source must be maintained in the same direct alignment and distance from the probe tip throughout the calibration tests.
- **NOTE:** The front panel CALIBRATION INDICATOR blinks when the SCAN/Calibrate Control is in either the BELOW (-), CENTERED (>0<), or ABOVE (+) test position. The CALIBRATION INDICATOR is OFF when the CALIBRATION control is in the SCAN position.

Component/Feature	Item
Wireless Pilot Probe	New battery in probe - Probe LED ON/Flashing
Wireless Receiver	Receiver connected to control unit - LED ON/Flashing
Control Unit	
POWER switch	ON
CALIBRATE control (rear panel	(>0<), (-), (+)
ISOTOPE control (rear panel)	Tc 99
THRESHOLD control	As desired (no effect)
RANGE control	As desired
VOLUME control	As desired

Table 10B-1. System Configuration – Cobalt-57 Alignment, Calibration Quick Test

11. Repair

The Wireless Pilot Probe is sealed at the factory. No user serviceable parts are inside the probes. Damage to a probe may result if a probe is opened by the user and will void any remaining warranty, if attempted.

Please contact Dilon Technologies for additional service. An RMA number is required upon return for service.





.

CAUTION:

Before using loose packing materials, such as foam pellets, shredded paper, or excelsior, be sure to wrap the component(s) separately in plastic bags or film or other protective wrapping.



CAUTION:

If a system, or system components are to be shipped from your institution for repair, then please clean and disinfect the components as described in this manual before packing for shipment. Dilon Technologies requires that a Navigator Service Sheet be attached to the outside of the shipping box, certifying that the items have been cleaned and disinfected to manufacturer's specifications. This form can be found on the Dilon Technologies website (<u>www.Dilon.com</u>) or by contacting your distributor or Dilon Technologies directly.

12. Limited Warranty

Dilon Technologies (Dilon), warrants to its customers that, subject to the below provisions, the Wireless Upgrade will be free from defects in materials and workmanship for twelve (12) months, commencing upon the date of shipment from Dilon.

Replacement parts and products are warranted to be free from defects in material and workmanship for a period equal to the balance of the warranty period remaining on the original part or product.

Dilon will repair or replace, at its option and without charge, any of the above products which are returned to Dilon or its designated repair site, within the applicable warranty period, with prepayment of shipping costs, and which are determined by Dilon to be defective in materials or workmanship.

This Limited Warranty does not apply to any product or replacement part or replacement product which has been subjected to any damage as a result of an accident or abuse, or that has not been used and maintained in accordance with the information contained in the literature accompanying the product, or that has been modified, repaired or serviced by any person or company other than Dilon or its authorized representative.

Dilon's sole liability for any defective product shall be repaired or replaced as set forth above. Dilon shall not be liable to anyone, under any circumstances, for any special, punitive, incidental or consequential damages whatsoever, including without limitation any costs, expenses, lost profits or other losses however designated. EXCEPT AS STATED ABOVE, NO WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND, EXCEPT AS STATED ABOVE, DILON EXPRESSLY DISCLAIMS ALL WARRANTIES.



Manufactured by:	Authorized European Representative:	
Dilon Technologies	AG Medical	
12050 Jefferson Avenue	Route de l'Orme,	
Suite 340	Parc des Algorithmes - Imm. "Homère"	
Newport News, VA 23606	91190 Saint-Aubin , France	
USA	http://ag-medical.com/	
Phone: +1-844-DILONNAV		
www.Dilon.com	EC REP	

© 2014 Dilon	
All Rights Reserved. May 2014 Made in USA	
	0.000