SERVICE MANUAL

USA Instruments, Inc.

Document 780019

Revision B

GE Signa® 1.5T
INSIGHT*PLUS* 9000
PHASED ARRAY TORSO-PELVIS COIL

GE Catalog Part Number: M1087TP

USAI Part Number: 160101

DAMAGE IN TRANSPORTATION

All packages should be closely examined at time of delivery. If damage is apparent, have notation **"damage in shipment"** written on **all** copies of the freight or express bill **before** delivery is accepted or "signed for" by a General Electric representative or a hospital receiving agent. Whether noted or concealed, damage **MUST** be reported to the carrier **immediately** upon discovery, or in any event, within **14** days after receipt, and the contents and containers held for inspection by the carrier. A transportation company will not pay a claim for damage if an inspection is not requested within this **14** day period.

Immediately complete a "Damage Loss Claim Form", available via MS Exchange Mail, after the damage is found.

MS Exchange Path:

Outlook/Public Folder/All Public Folders/Medical Systems/!Global Initiatives/Information Management/Forms/Common Forms/DAMAGE LOSS CLAIM FORM.

Send the completed form to the email address listed in the form.

For more information about the Transportation Claim Procedure, access the GE Medical Systems Intranet and enter the following URL address (case sensitive):

ftp://3.87.40.2/globepro/qualsys/Docs/190016MF.PDF

Language Policy For Service Documentation (Dir. 2128126)

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- If a customer's service provider requires a language other than English, it is the customer's responsibility to provide translation services.
- Do not attempt to service the equipment unless this service manual has been consulted and is understood.
- Failure to heed this warning may result in injury to the service provider, operator or patient from electric shock, mechanical or other hazards.

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- Si le technicien du client a besoin de ce manuel dans une autre langue que l'anglais, c'est au client qu'il incombe de le faire traduire.
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- Este manual de servicio sólo existe en inglés.
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- Si proceda alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto.
- Non tenere conto della presente avvertenza potrebbe far compiere operazioni da cui derivino lesioni all'addetto alla manutenzione, all'utilizzatore ed al paziente per folgorazione elettrica, per urti meccanici od altri rischi.

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・GEMS以外でサービスを担当される業者が英語以外の言語を要求される場合、翻訳作業はその業者の責任で行うものとさせていただきます。

・このサービスマニュアルを熟読し、理解せずに装置のサービスを行わないでください。

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- 非 GEMS 公司的维修员要求非英文本的维修手册时，客户需自行负责翻译。
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- 忽略本注意事项会对维修员，操作员或病人造成触电，机械伤害或其他伤害。

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SECTION 1 – INTRODUCTION

1-1 Product Identification and Shipping List

To identify the Insight*PLUS* 9000 Phased Array Torso-Pelvis Coil, refer to the coil label (as shown in *Figure 1*).

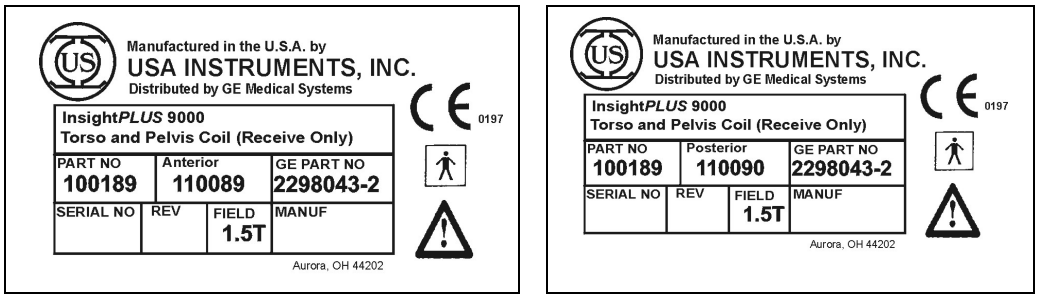

Figure 1: Coil labels.

Figure 2 shows a picture of the Insight*PLUS* 9000 Phased Array Torso-Pelvis Coil.

Figure 2: The Phased Array Torso-Pelvis Coil.

SHIPPING LIST – TABLE 1-1

Box #	Part Name	GE Part #	USAI Part #	Qty
1	Coil	2298043-2	100189	1
1	Patient Comfort Pad (Anterior)	E8800RB	150181	1
1	Patient Comfort Pad (Posterior)	E8800RC	150182	1
1	Velcro Strap Set (attached to coil)	E8800RA	150183	1
1	Operator's Guide	2298043-7	770036	1
1	Service Manual	2298043-8	780019	1
2	Phantom Positioner Set	2298043-5	150225	1
3	SNR Phantom	2298043-4	150213	1

1-2 Compatibility

This coil is compatible with the Signa® Horizon™ and LX Horizon™ 1.5T.

1-3 Related Documentation

Operator's Guide, GE Part Number 2298043-7.

Signa® LX Service Methods CD, 2160623-1.

1-4 Environmental Requirements

Storage Requirements

Place the coil on the phantom positioner set. Loosely fasten the Velcro straps to secure the coil on the phantom positioner set. The coil should then be stored in the scanner room. A storage space of 39.4" (100 cm) x 21.3" (54 cm) x 12.6" (32 cm) is needed.

Dimensions

Anterior	29.7" x 19.9" x 2" (75.5 cm x 50.5 cm x 5.1 cm)
Posterior	34.5" x 33.7" x 1.8" (87.5 cm x 85.5 cm x 4.5 cm)
Phantom	Diameter: 6.6" (16.8 cm), Length: 24.41" (62.0 cm)
Cable Length	64.2" (163 cm)

Weight

Anterior	6 lbs. (2.72 kg)
Posterior	10 lbs. (4.5 kg)
Phantom	32 lbs. (14.5 kg)

1-5 Theory of Operation

The block diagram of the Phased Array Torso-Pelvis Coil is shown in *Figure 3. Figure 4* shows the block diagram of the circuit layout. Also refer to the schematic in the Appendix. The receive-only coil is designed to give optimum signal to noise ratio and uniform coverage of the torso and pelvis regions, including the chest, abdomen and hip anatomy. The coil package consists of anterior and posterior sections, which are positioned above and below the region of interest. A maximum of two RF inputs, representing either the upper (TPUPPER) or lower (TPLOWER) coils can be selected at a time (see *Figures 5 and 6*).

The coil is actively decoupled from the RF transmit coil during transmit by means of a RF choking circuit or RF chokes. These RF chokes can be switched on actively or passively. Some of the RF chokes are switched on passively using small-signal diodes. The small-signal diodes are turned on by the induced RF voltage in the chokes, coupled from the transmit field (passive coupling). Each small-signal diode is turned on when the induced RF voltage reaches about 0.5 volt. Some chokes are switched on actively using pin diodes. The pin diodes are turned on by a forward biasing DC current source supplied by the MRI system (active decoupling). When either the pin diodes or the small-signal diodes are turned on, the RF choking circuits become very high impedance blocks, compared to the other circuit elements. These high impedance elements segregate the coil circuitry into several isolated electrical segments, preventing any current flow in the coil circuit.

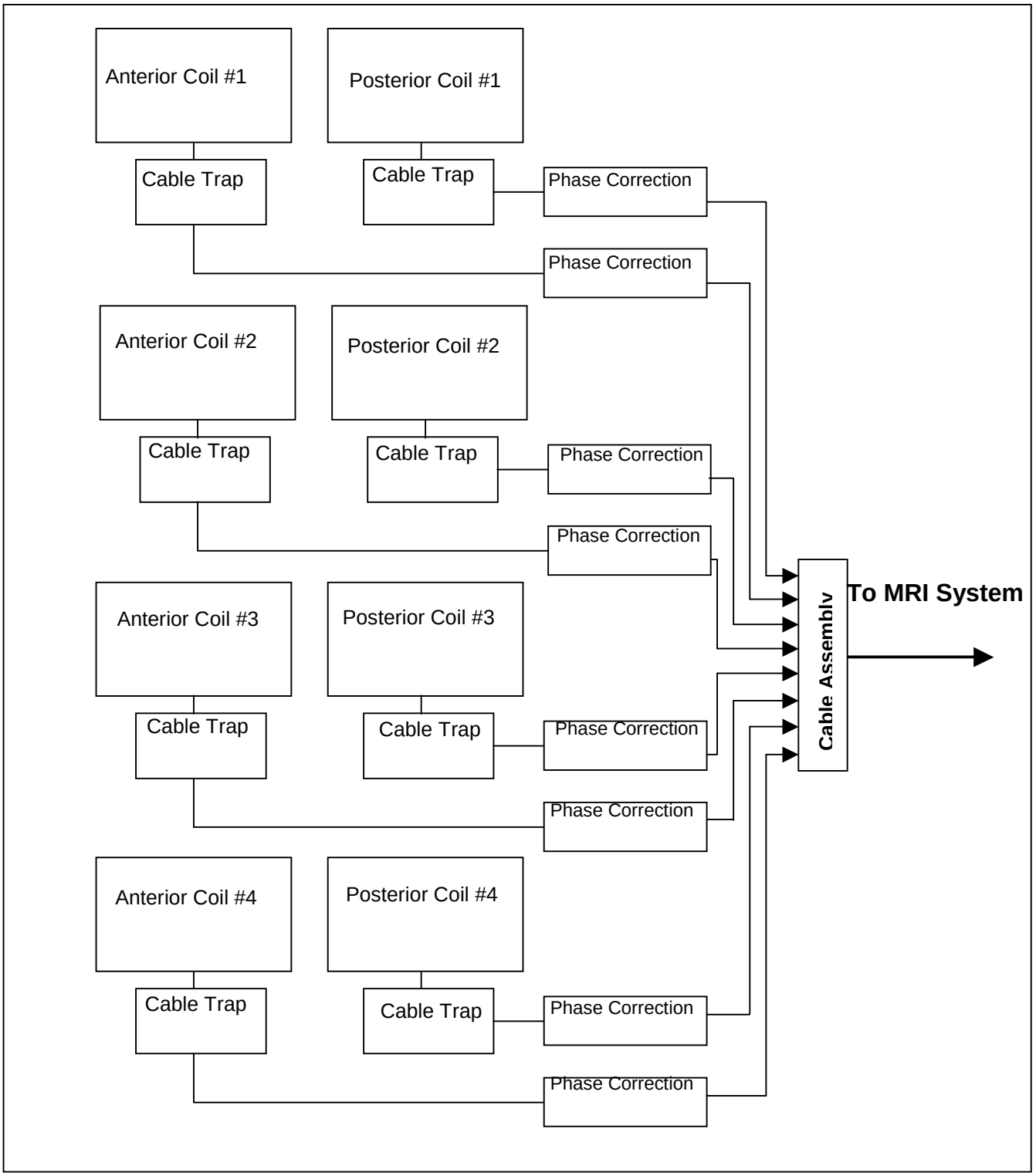

Figure 3: Block diagram of the coil.

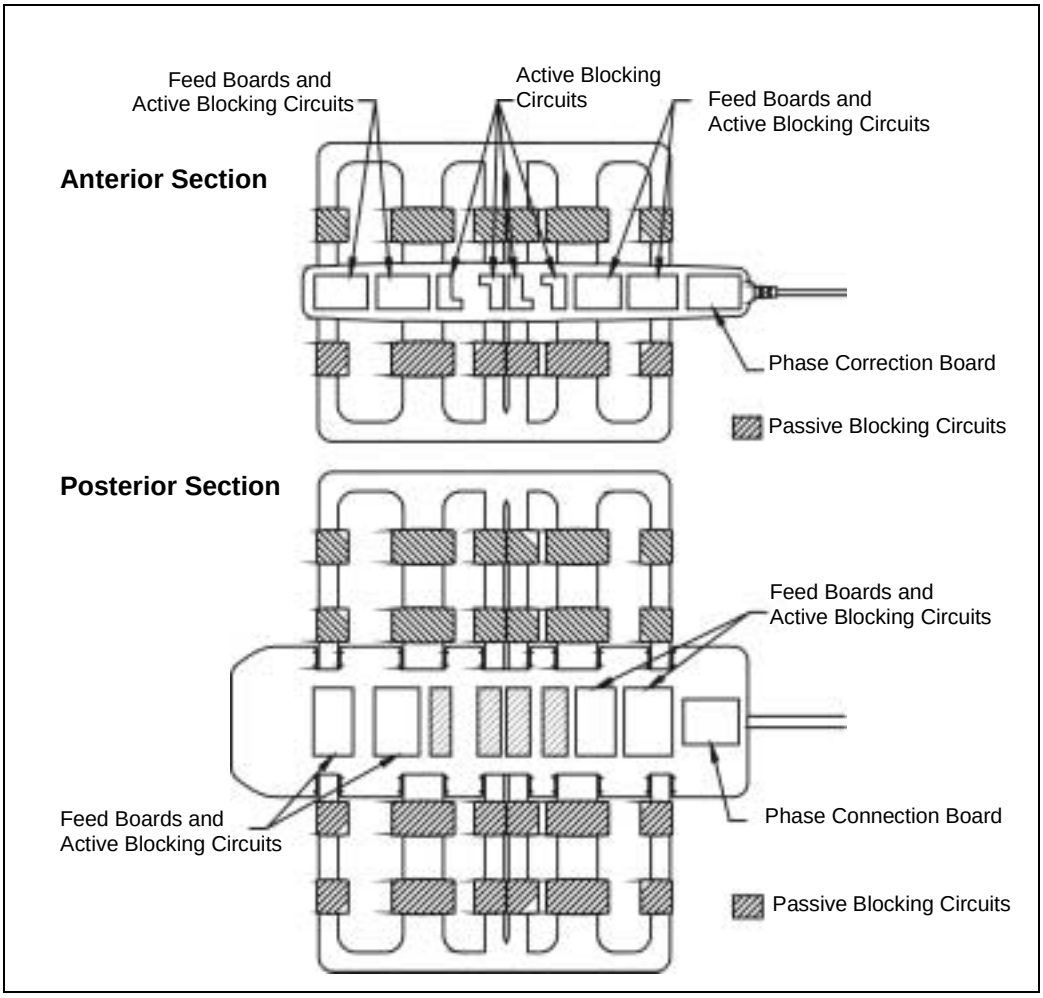

Figure 4: Block diagram of the circuit layout.

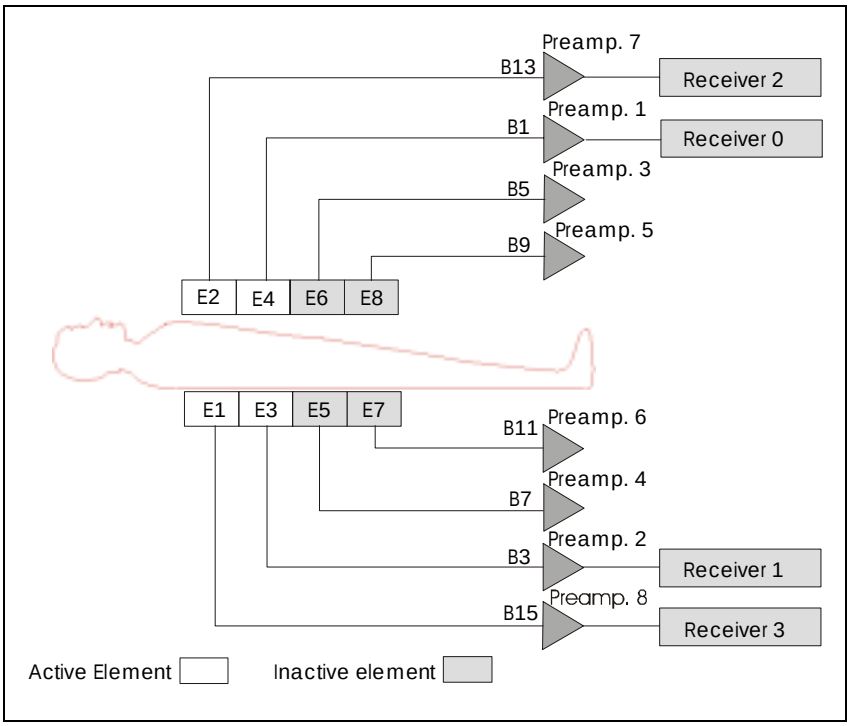

Figure 5: TPUPPER signal path.

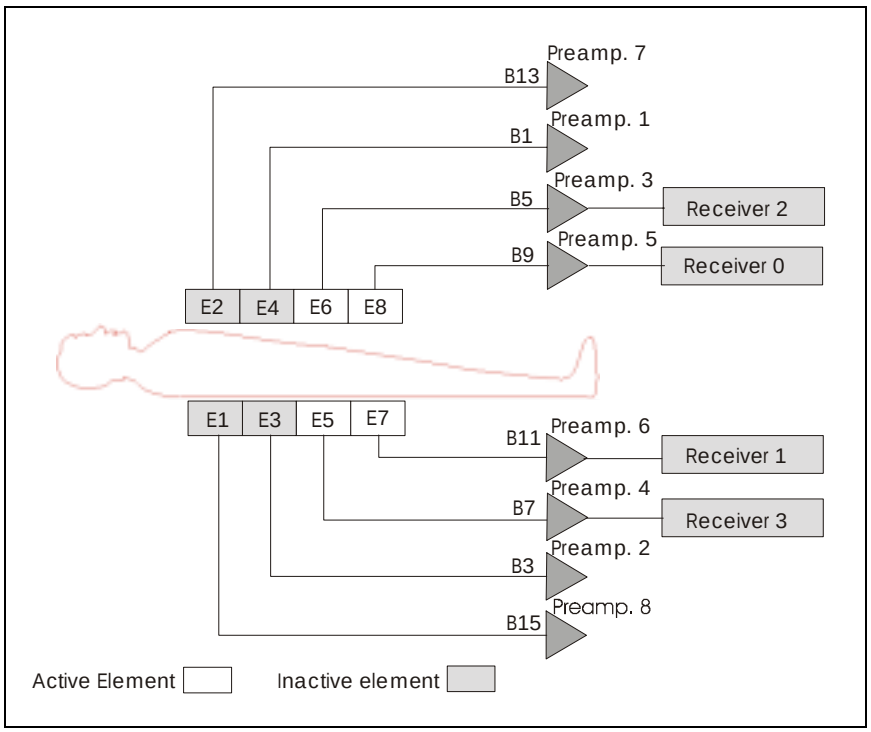

Figure 6: TPLOWER signal path.

SECTION 2 – SETUP AND CALIBRATION

2-1 Coil Installation

2-1-1 Special Install Notes

The Phased Array Torso Pelvis Coil requires all eight (8) phased array preamplifiers to be installed in the system. Refer to the system manuals for information on installing the preamplifiers. Also, refer to instructions in the preamplifier kit (GE Part Number M1087CY).

If the coil will be used on more than one system, a preamplifier kit for each system must be installed. However, ff the GE Peripheral Vascular Coil is already used on the system, then it is not necessary to install the additional preamp kit.

2-1-2 Installing the Coil

The names for this coil are: TPUPPER and TPLOWER.

Add the coil using the Configuration File Manager. Refer to: Service Methods CD; System Level Procedures; Software Utilities.

If the coil does not exist in the Coil Config File refer to the Adding New Coils to Config File Manager procedure and use the coil configuration information in Section 7-3 of this manual.

2-2 Installation Functional Checks

1. Perform system level Signal to Noise Check. Refer to Service Methods CD; System Level Procedures; Functional Checks; Signal to Noise Check.
2. Perform Section 3-2 Coil Imaging Performance Verification.

2-3 Periodic Quality Assurance Check

On a periodic basis, such as during planned maintenance, perform the quality assurance checks as outlined below to ensure the coils is operating properly.

1. Check external cable for cracks or cuts.
2. Perform Section 3-2 Coil Imaging Performance Verification and record data values in Data Sheet.

SECTION 3 – FUNCTIONAL CHECKS

3-1 Scanner Verification

Perform system level Signal to Noise Check. Refer to Service Methods CD; System Level Procedures; Functional Checks; Signal to Noise Check.

3-2 Coil Imaging Performance Verification

3-2-1 Tools Required

TOOLS REQUIRED – TABLE 3-2-1

Description	GE Part #	USAI Part #	Qty
SNR Phantom	2298043-4	150213	1
Phantom Positioner Set	2298043-5	150225	1

3-2-2 Explanation of Procedure

The Torso Pelvis coil can be used in two modes of operation and has two coil names: **TPUPPER**, and **TPLOWER**. SNR measurements must be made for each mode, requiring two sets of signal and noise scans. Refer to the Data Sheet in Appendix 7-1 to understand the data required to calculate the individual element SNR for each mode of operation. All ROI measurements are made on the individual element images, **not** on the composite image.

The image quality check uses two different protocols for signal and noise image acquisition. The signal scan is an **FSE** sequence used to minimize susceptibility and B_0 inhomogeneity effects. The noise scan is a **GRE** sequence that has a Control Variable (do_noise) to eliminate the transmit RF completely during the scan. The signal scan **must** be run prior to the noise scan as the R1, R2, and TG values from the signal scan are used for the noise scan.

3-2-3 Signal Scan

The following procedure is specific to the LX platform but can be easily adapted for 5.x systems.

1. From the Scan Desktop, start new scan by selecting [**New Pt**]; set **Patient ID** to "*geservice*" and **Patient Weight** to "*111*" pounds. Click [**Patient Position**] to open protocols window.
2. Remove any other surface coils (if present) from the cradle.
3. Assemble the phantom set as follows: (1) place the lower section of the phantom positioner on the posterior coil (see *Step 1* of *Figure 7);* (2) place the phantom onto the lower section of the phantom positioner (see *Step 2* of *Figure 7);* (3) place the upper section of the phantom positioner over the phantom (see *Step 3* of *Figure 7);* (4) place the anterior coil over the phantom positioner set and fasten with Velcro straps as shown in *Steps 4* and *5 of Figure 7.* Be sure the anterior coil is aligned with the posterior coil.

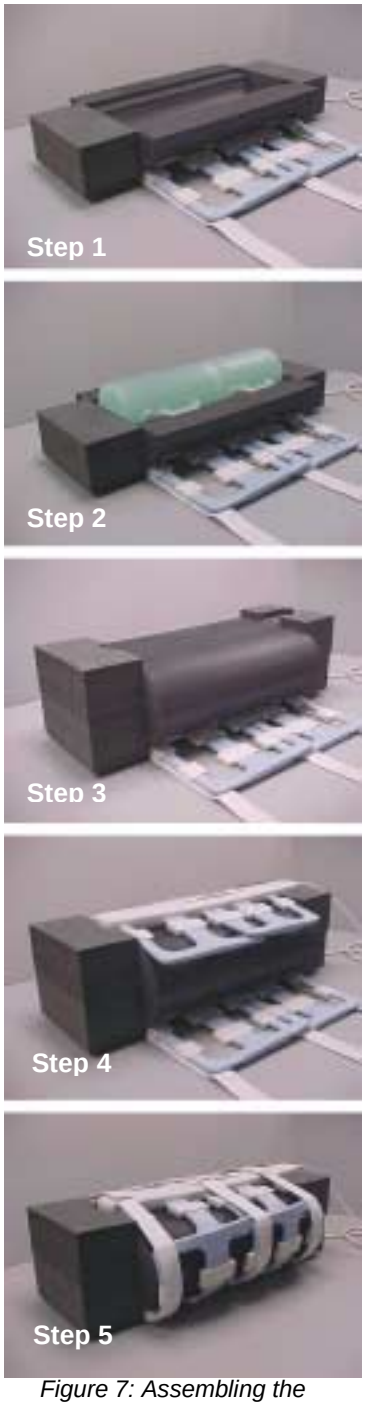

Figure 7: Assembling the phantom positioner set.

4. At the magnet, press "**Alignment Light**" button to turn on the light. Move the cradle to align the coil to the alignment marks as shown in *Figure 8*. Press "**Landmark**" button to landmark the alignment.

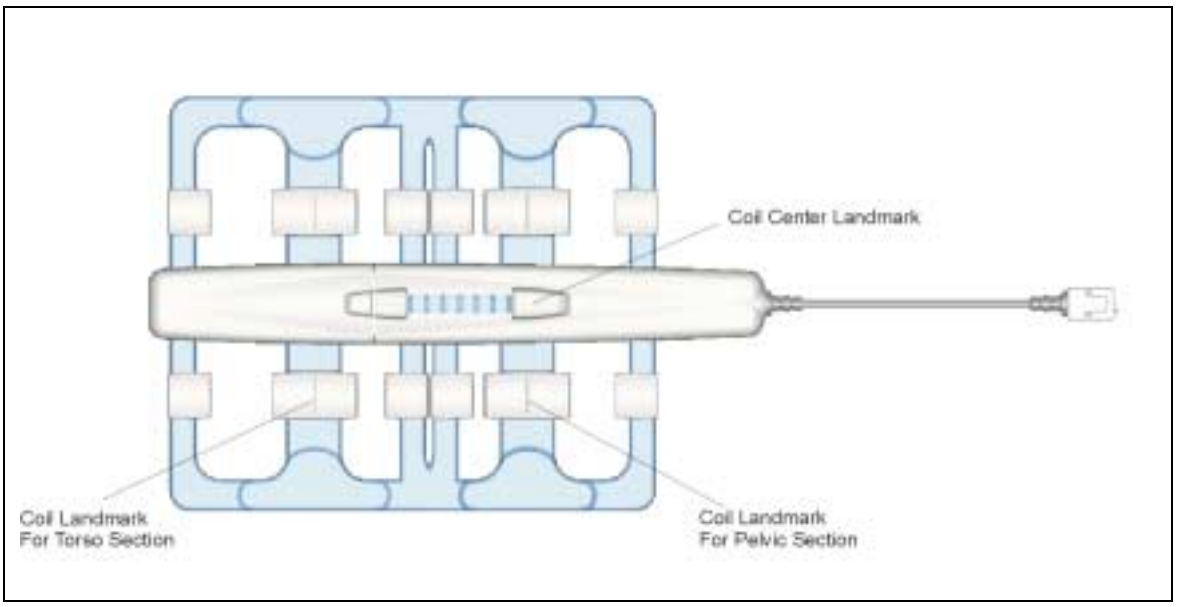

Figure 8: Coil landmarks.

5. Move the coil to scan position by pushing the "**Move to Scan**" button, ensuring cable does not get snagged.
6. At the console, set the protocols per the Signal section from the Signal and Noise Protocols – Table 3-2-4.
7. Click [**Save Series**] to download the protocols, then click [**Prepare to Scan**].
8. Open [**Display CVs**] menu under [**Research Operations**] (click right mouse button). Set the "**saveinter"** CV to "*1*" (saves the intermediate images so ROI measurements can be performed).
9. Run [**Auto Prescan**]. Record the R1, R2 and TG values on the SNR Data Sheet (found in the Appendix).
10. Run [**Scan**].

3-2-4 Noise Scan

A signal scan must be run **prior** to the noise scan as the same R1, R2 and TG values must be used for both the signal and noise scans. Do **not** run an Auto Prescan prior to the noise scan as the values will be changed.

1. Copy the signal scan series. Use [**Copy Series**] (highlight signal series and click right mouse button) and [**Paste Series**] in **RX Manager**.
2. Click [**View Edit**] and set the protocols per the Noise section from the Signal and Noise Protocols – Table 3-2-4.
3. Click [**Save Series**] and click [**Prepare to Scan**].
4. Open [**Display CVs**] menu under [**Research Operations**]. Set the "**saveinter**", "**rhformat**", and "**do_noise**" CVs to "*1*".
5. Run [**Manual Prescan**], do **not** make any changes, and click [**Done**].
6. Run [**Scan**].

SIGNAL AND NOISE PROTOCOLS – TABLE 3-2-4

Protocol	Signal Value	Noise Value
Patient/Exam Information		
ID	geservice	geservice
Name	TP Array	TP Array
Patient Weight	111 lbs (50 kg)	111 lbs (50 kg)
Patient Position		
Patient Position	Supine	Supine
Patient Entry	Feet First	Feet First
Coil	TPUPPER or TPLOWER	TPUPPER or TPLOWER
Series Description	Signal	Noise
Imaging Parameters		
Plane	Sagittal	Sagittal
Mode	2D	2D
Pulse Seq	FSE	GRE
Imaging Options	Variable Bandwidth, No Phase Wrap	Variable Bandwidth, No Phase Wrap
PSD Name	*(leave blank)*	*(leave blank)*
Protocol	*(leave blank)*	*(leave blank)*
Scan Timing		
# of Echoes	1	1
TE	17	minfull
TR	500	34
Echo Train Length/Flip Angle	4	1
Bandwidth	15.63	15.63
Additional Parameters	*(none)*	*(none)*
Acquisition Timing		
Freq	256	256
Phase	256	256
NEX	2	2
Phase FOV	1	1
Freq DIR	S/I	S/I
Auto Center Freq	Peak	Peak
Autoshim	On	On
Phase Correct	On	On
Contrast	Off	Off
# of Reps B4 Pause	0	0
Scanning Range		
FOV	38	38
Slice Thickness	3	3
Spacing	1.5	1.5
Start S/I	0	0
R/L Center	0	0
A/P Center	A25	A25
End S/I	0	0
# Slices	1	1
Table Delta	0	0

3-2-5 SNR Image Analysis

SNR Measurement

For the signal measurement, choose a rectangular ROI covering the appropriate section of the phantom for the receiver channel being scanned. The rectangular ROI should be about 14000 mm^2. ROIs are shown in *Figures 9* through *13* below.

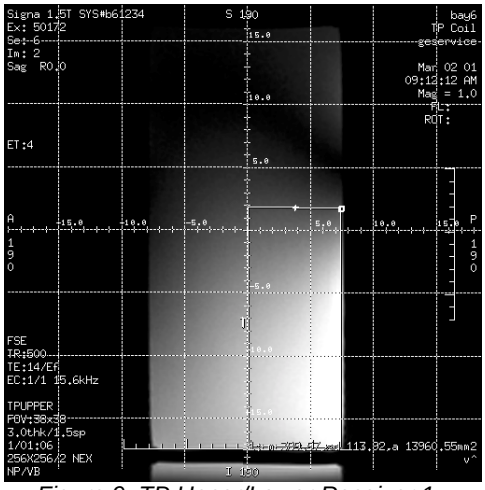

Figure 9: TP Upper/Lower Receiver 1
ROI ≈ 14000 mm^2
7.5 cm A-P 19.5cm S-I.

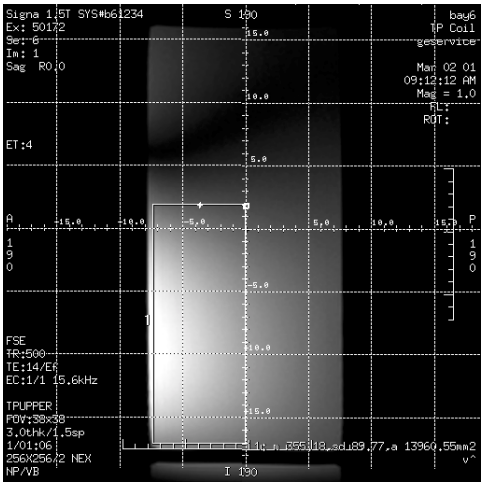

Figure 10: TP Upper/Lower Receiver 2
ROI ≈ 14000 mm^2
7.5 cm A-P 19.5cm S-I.

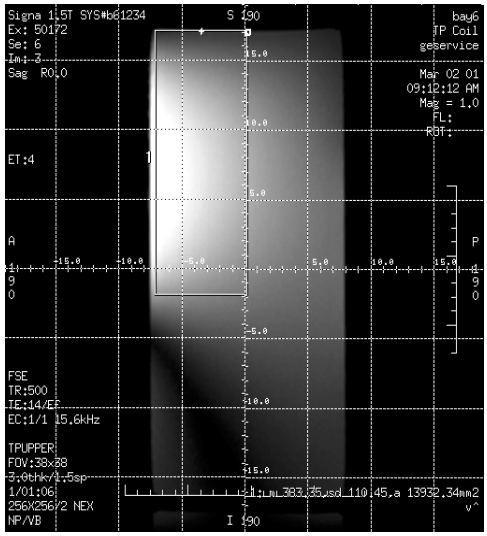

Figure 11: TP Upper/Lower Receiver 3
ROI ≈ 14000 mm^2
7.5 cm A-P 19.5 cm S-I.

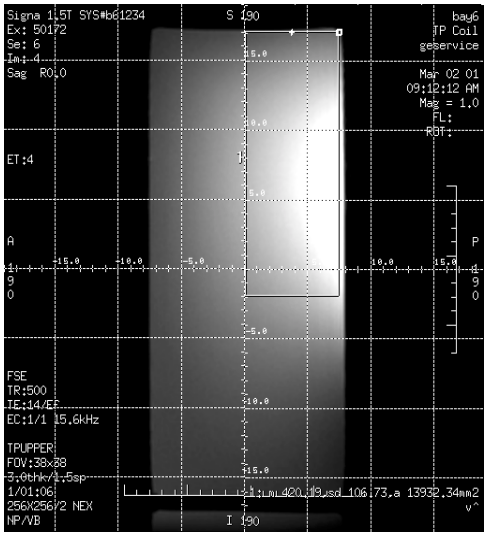

Figure 12: TP Upper/Lower Receiver 4
ROI ≈ 14000 mm^2
7.5 cm A-P 19.5 cm S-I.

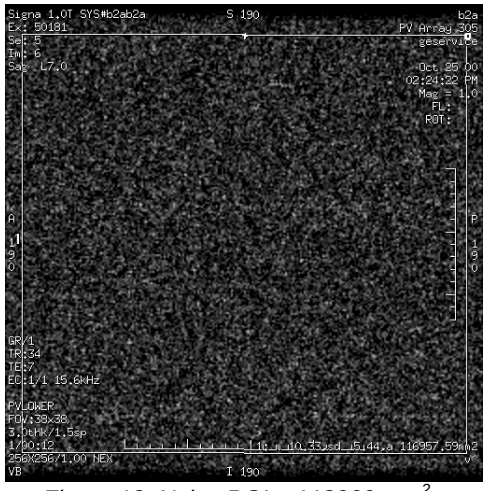

Figure 13: Noise ROI ≈ 118000 mm^2.

The SNR shall be calculated using the signal-to-noise ratios of the individual receiver channels. Individual receiver SNR is defined as the mean of data within the signal ROI divided by the standard deviation of data within the noise ROI:

$$SNR_{Element} = \frac{\text{Mean of Signal within ROI}}{\text{Standard Deviation of Noise within ROI}}$$

Note: The SNR calculation uses the **MEAN** of the signal image and **STANDARD DEVIATION** of the noise image.

Individual Element Performance

Examples of typical Receiver Images are shown in *Figures 14* through *18* below:

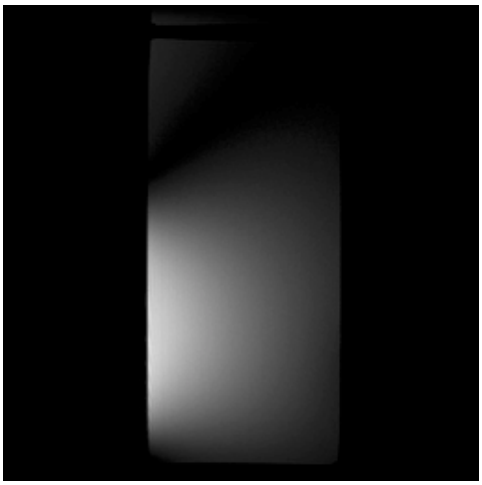

Figure 14: TP Upper/Lower Receiver 1.

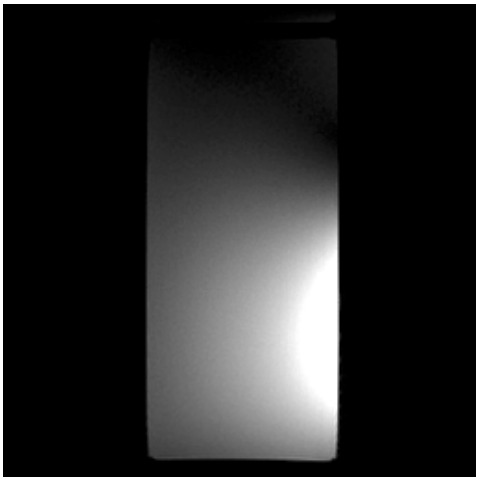

Figure 15: TP Upper/Lower Receiver 2.

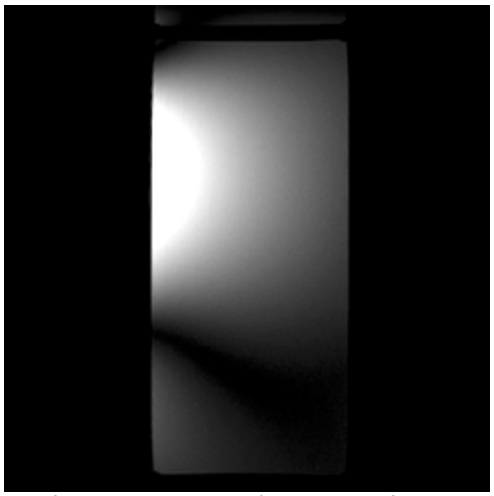

Figure 16: TP Upper/Lower Receiver 3.

Figure 17: TP Upper/Lower Receiver 4.

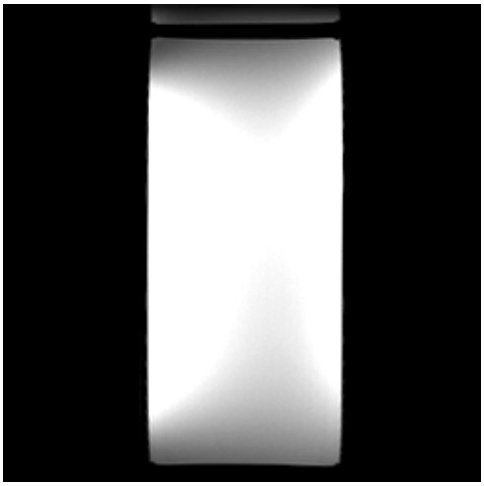

Figure 18: Composite.

SNR Specification

The SNR measurements must be greater than or equal to the following specifications:

SNR SPECIFICATIONS – TABLE 3-2-5

	CH0	CH1	CH2	CH3
TPUPPER	227.3	175.6	205.4	245.8
TVLOWER	192.9	186.3	212.0	211.1

3-3 External Cable Check

PIN Diode Check from the Connector:

Step 1 – Select the Diode Test function on the multi-meter.

Step 2 – Using *Figure 19* and External Cable Expected Readings – Table 3-3 below for the correct pin locations, connect the negative multi-meter lead to the connector pin on Row A and connect the positive multi-meter lead to the connector pin on Row B.

Step 3 – The reading on the digital multi-meter should be 1.05 ± 0.15 volts. If the reading is below 0.9 volts, either the output cable is shorted or one of the pin diodes on the feed board and the PIN diode board is defective. If the reading is above 1.20 volts, either the output cable or the DC wires are open.

EXTERNAL CABLE EXPECTED READINGS – TABLE 3-3

Coil Element Number	Positive Lead Connection	Negative Lead Connection	Voltage Reading
Anterior Coil #1 (L1)	13B	13A	1.05 ± 0.15
Anterior Coil #2 (L2)	1B	1A	1.05 ± 0.15
Anterior Coil #3 (L3)	5B	5A	1.05 ± 0.15
Anterior Coil #4 (L4)	9B	9A	1.05 ± 0.15
Posterior Coil #1 (S1)	15B	15A	1.05 ± 0.15
Posterior Coil #2 (S2)	3B	3A	1.05 ± 0.15
Posterior Coil #3 (S3)	7B	7A	1.05 ± 0.15
Posterior Coil #4 (S4)	11B	11A	1.05 ± 0.15

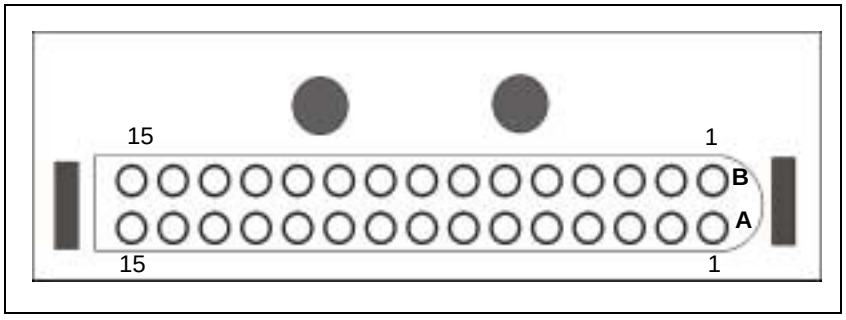

Figure 19: 30-pin Bendix connector.

3-4 PIN Diodes Check

Same as External Cable Check.

3-5 Mechanical Hardware Check

None.

3-6 Troubleshooting Tips

When troubleshooting the coil, refer to the typical Receiver Images shown in *Figures 14* through *18* in Section 3-2-5 SNR Image Analysis.

Symptom #1: The system reports a coil fault during prescan or does not recognize the coil connection to the system when selected in the software.

Probable Cause	Suggested Actions	Resolution
The coil connector has become disconnected from the system interface.	Check to make sure the coil connector is fully engaged.	Engage connector and try the scan again. Make sure the indicator light on the patient table turns green with the proper coil selected on the console.
One or more PIN diodes have failed.	From inside the coil, check the PIN diodes using a DVM. Use diode mode for forward-bias measurements and resistance mode for reverse-bias measurements. Note that there should be no reverse-bias leakage. Bad PIN diodes are usually shorted or exhibit reverse-bias leakage current.	Replace the coil.
There is a DC short or open somewhere within the DC path inside the coil.	Check the coil and associated DC paths with a DVM, in both diode check and resistance modes.	If a short or open is observed, check the output cable by itself (see below). If the cable and PIN diodes are okay, then replace the coil.
The output cable has a short or an open.	Disconnect the cable at the coil and check each coaxial line with a DVM (resistance). Try moving and twisting the cable as you watch the meter to find any intermittent connections. Inspect the center pins of the SMB and Bendix connections for wear and proper engagement into the mating connection.	Replace the coil.
There is a problem with the DC bias from the system interface or the coil ID circuitry.	Check to ensure the correct DC bias is being provided to the coil during transmit and receive per GEMS System Service Manual. Try a similar 2-channel coil to see if the same problem occurs	Correct MRI system problem.

Symptom #2: The coil does not pass SNR tests or exhibits poor image quality on patient scans.

Probable Cause	Suggested Actions	Resolution
One or more of the coil channels has a high noise level.	Look at the uncombined images to determine which channel has the problem. Compare the noise standard deviation measurements between channels and system performance logs; they should be approximately the same. Try swapping preamplifiers between channels to see if the problem follows the preamp. If it does, then the preamplifier is bad.	Replace the coil.
One or more of the coil channels has low signal.	Look at the uncombined images to determine which channel has the problem. Compare signal mean measurements between channels and system performance logs.	Replace the coil.
Excessive ghosting is causing the noise std. dev. measurements to be artificially high.	Window and level the images down to look at the background for signs of ghosting. Try padding the phantom in the holder. Try running the scan without the phantom holder to see if the ghosting diminishes. Try turning off the cold heads to see if the ghosting is vibration-related.	If padding or changing the phantom position can minimize ghosting, then the problem is caused by excessive vibration elsewhere in the system. If the ghosting is not symptomatic of phantom positioning or padding, then replace the coil.
There is a problem with the DC bias from the system interface or the coil ID circuitry.	Check to ensure the correct DC bias is being provided to the coils during transmit and receive per GEMS System Service Manual.	Correct MRI system DC bias problem.

SECTION 4 – MAINTENANCE

4-1 Coil Care

Detach the coil connector from the scanner before attempting to clean the coil. Do not touch the connectors with bare fingers. Never press a sharp object against the surface of the connector. Do not reattach the connector after cleaning the coil until the coil has dried completely. Electric shock may result if the coil is attached to the system during cleaning or when it is wet.

Do not spray or pour cleaning solution directly on the coil. Do not submerge the coil in the solution. The coil contains sensitive electronic components that could be damaged by the solution. The coil cannot be sterilized and should be cleaned only according to the procedure outlined in this section.

The following solutions are recommended for the coil and pad surfaces: (1) a ten percent bleach solution (some discoloration may occur), (2) one ounce commercial dishwashing liquid mixed with one gallon of water or (3) warm water. Apply cleaning solution to a soft cotton cloth and proceed to clean. The user place a cotton sheet over the coil before positioning the patient to prevent soiling of the coil. If the coil is soiled, clean the coil as described above.

4-2 Special Care Requirements

Prior to returning a coil for service, use a ten percent bleach solution (as described above) to eliminate risk of exposure to potentially infectious materials.

SECTION 5 – REPLACEMENT

Simple removals that are clearly obvious are not described here.

Unless otherwise noted, the steps for re-assembly are simply the reverse order of the steps described for disassembly.

5-1 External Cable Replacement

The following procedure applies to both the Anterior and Posterior Coils.

Step 1 – Remove the coil cover.

Step 2 – Remove the aluminum screws that hold down the two (2) O-ring connectors containing the DC lines.

Step 3 – Disconnect the SMB plugs on the cable end from the interface boards.

Step 4 – Remove the old cable assembly.

Step 5 – Fix a new cable assembly to the coil by connecting the four (4) SMB plugs to the corresponding receptacles on the interface boards.

Step 6 – Reattach the O-ring connectors to the PCB using the aluminum screw previously removed.

Step 7 – Close the coil cover.

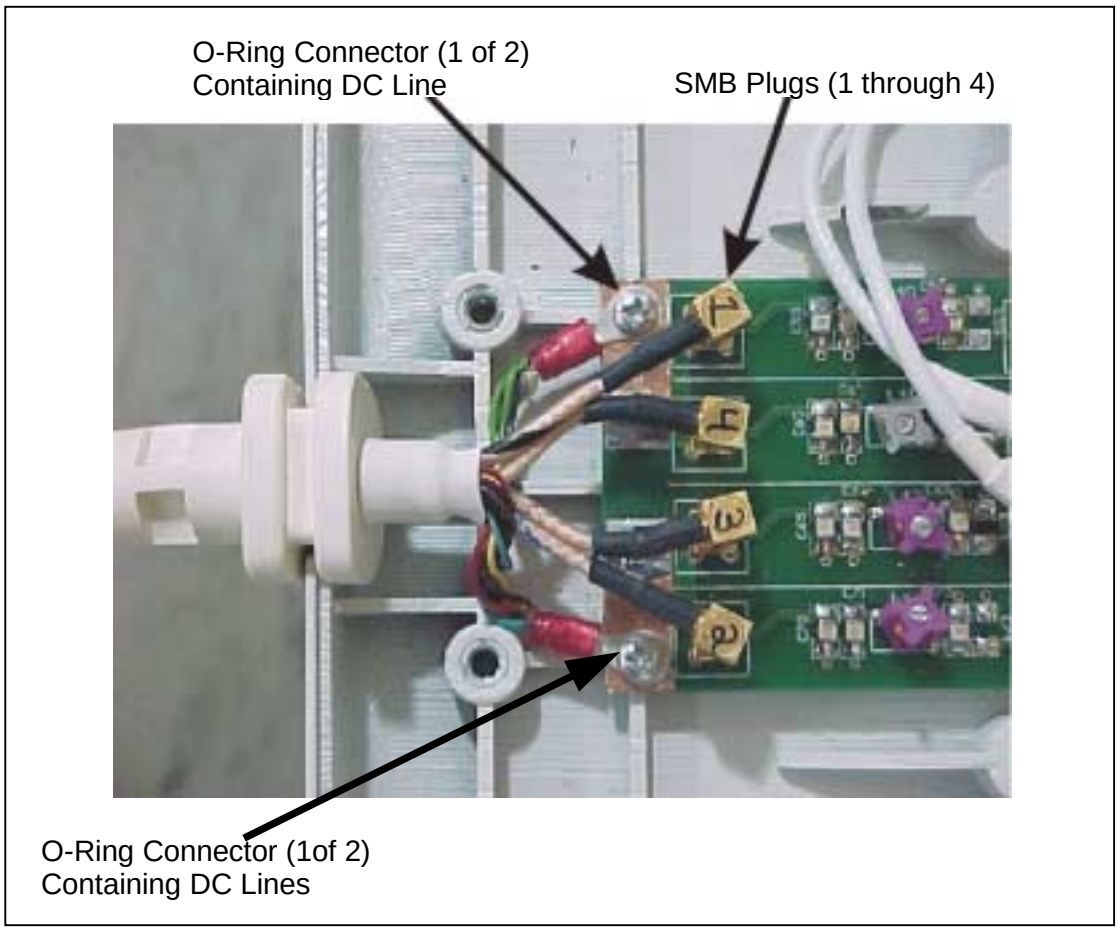

Figure 20: Posterior coil cable assembly.

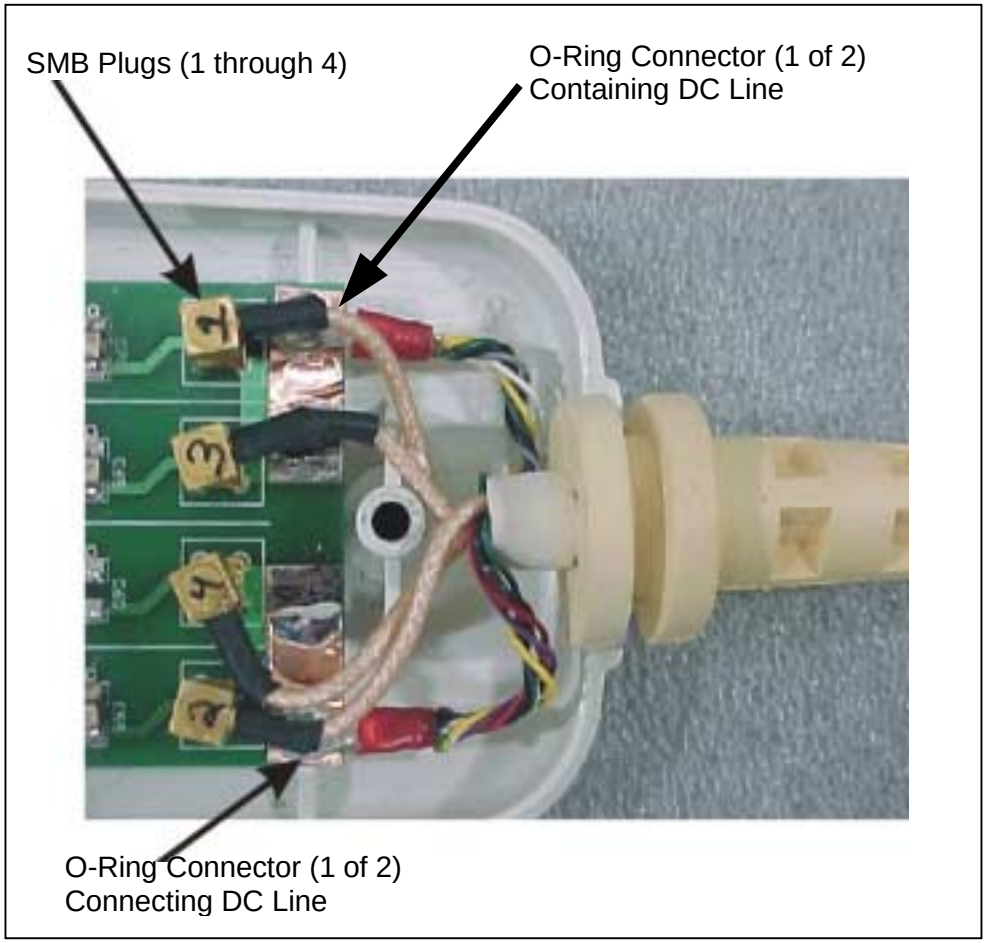

Figure 21: Anterior coil cable assembly.

SECTION 6 – RENEWAL PARTS

6-1 Field Replaceable Units

FIELD REPLACEABLE UNITS – TABLE 6-1

Part Name	GE Part #	USAI Part #
Coil	2298043-2	100189
Cable Asembly	2298043-3	110091
SNR Phantom	2298043-4	150213
Phantom Positioner Set	2298043-5	150225

6-2 Other Replaceable Accessories

OTHER REPLACEABLE ACCESSORIES LIST – TABLE 6-2

Part Name	GE Part #	USAI Part #
Patient Comfort Pad (Anterior)	E8800RB	150181
Patient Comfort Pad (Posterior)	E8800RC	150182
Velcro Strap Set	E8800RA	150183
Coil Shipping Container Set		150279
Phantom Shipping Container Set		150280

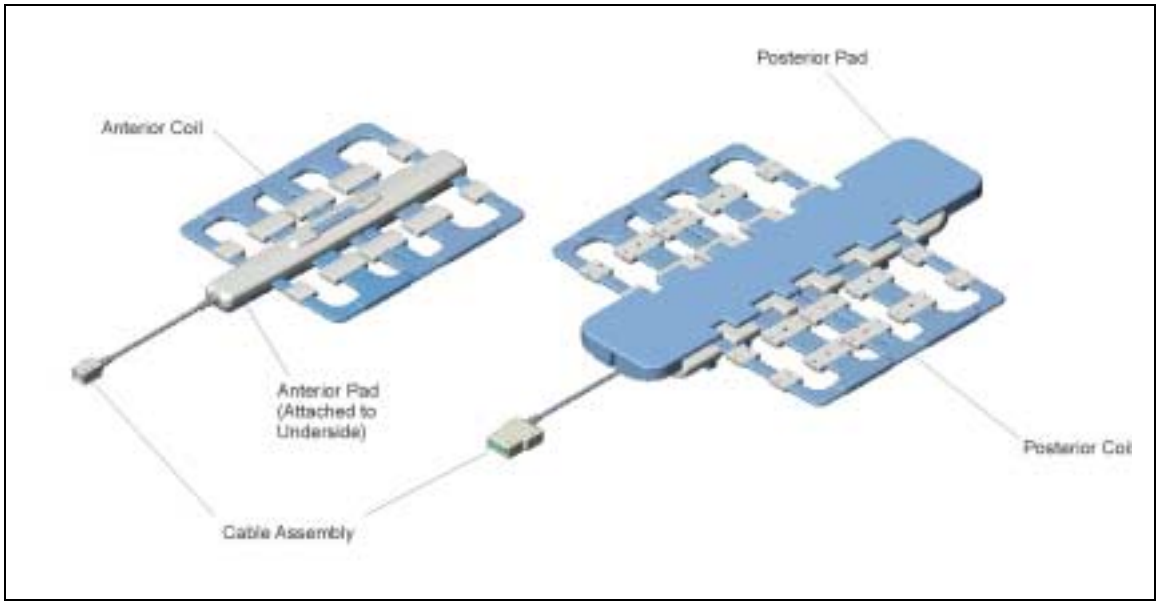

Figure 22: Parts of the coil.

SECTION 7 – APPENDIX

7-1 SNR Data Sheet

Use the table provided below to record the calculated signal to noise ratio (SNR) data obtained from the Functional Checks section.

Date	Comments							
Mode	**R1**	**R2**	**T1**	**Channel**	**Signal Mean**	**Noise Std Dev**	**SNR**	**Spec Limit**
TPUPPER				0				227.3
				1				175.6
				2				205.4
				3				245.8
TPLOWER				0				192.9
				1				186.3
				2				212.0
				3				211.1

Date	Comments							
Mode	**R1**	**R2**	**T1**	**Channel**	**Signal Mean**	**Noise Std Dev**	**SNR**	**Spec Limit**
TPUPPER				0				227.3
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Mode	**R1**	**R2**	**T1**	**Channel**	**Signal Mean**	**Noise Std Dev**	**SNR**	**Spec Limit**
TPUPPER				0				227.3
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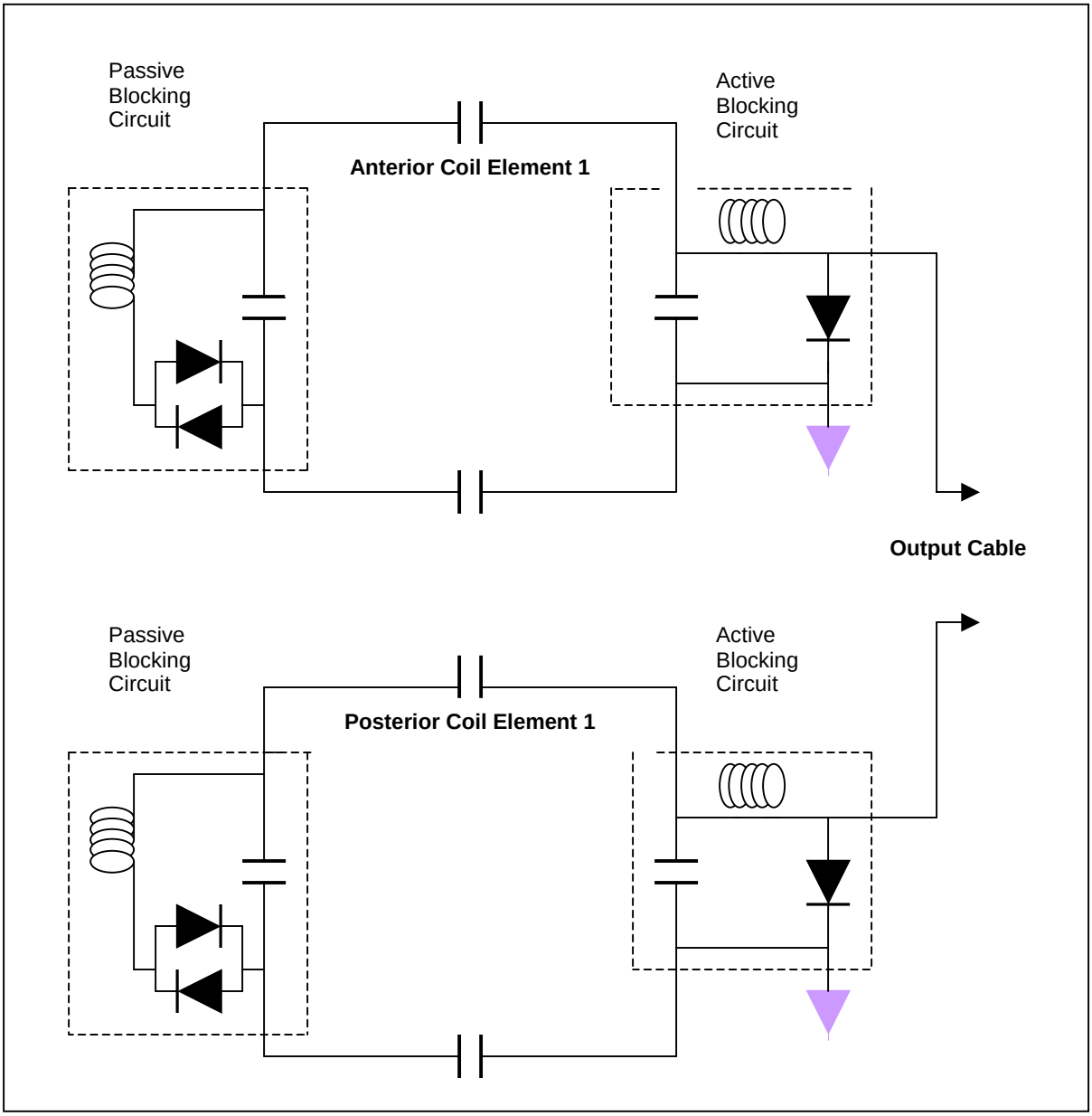
				2				205.4
				3				245.8
TPLOWER				0				192.9
				1				186.3
				2				212.0
				3				211.1

7-2 Schematic



7-3 Coil Configuration

Parameter	Modes	
Coil Name	TPUPPER	TPLOWER
Coil Type	3	3
Extremity Coil	no	no
Cable Loss	1.05	1.05
Coil Loss	1.72	1.72
Recon Scale Factor	1	1
Linear vrs Quadrature	1	1
Multiple Receiver Coil?	yes	yes
Number of Receivers	4	4
Starting Receiver ID	0	0
Ending Receiver ID	3	3
Multi-Coil Port Enable	9	6
Multi-Coil Port Error Enable	9	6
Additional Transmit Attenuation	0	0
Number of Fast Receivers	0	0
Starting Fast Receiver ID	4	4
Ending Fast Receiver ID	4	4
Start TA Value	90	90
Start RG Value	12	12
Multi-Coil Recon Enable	0	0
Head Default Freq. Direction	0	0
SCIC Axial	1.5 0.35 0.2 5.0 128 0.2 1.05	1.5 0.35 0.2 5.0 128 0.2 1.05
SCIC Saggital	1.5 0.35 0.2 5.0 128 0.2 1.05	1.5 0.35 0.2 5.0 128 0.2 1.05
SCIC Coronal	1.5 0.35 0.2 5.0 128 0.2 1.05	1.5 0.35 0.2 5.0 128 0.2 1.05

REVISION HISTORY

Rev	Date	Author	Primary Reason for Change
A	06/11/01	Reva Zaretsky	First Issue
B	06/21/01	Reva Zaretsky	Revisions Requested by GE