

# Operator's Manual Model HNC-63-INT

## Neurovascular Array Coil for the Philips Intera 1.5T MRI System



Invivo Corporation Quality System is Certified to ISO 9001 and ISO 13485



February 2002  
©2002 Invivo Corporation





All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form by any means without the written permission of Invivo Corporation.

**Licenses and Trademarks**

The Invivo Logo is a registered trademark of Invivo Corporation.  
Intera is a registered trademark of Philips Medical Systems.

This manual describes the use and operation for the Invivo Neurovascular Array Coil on the Philips Intera 1.5T MRI Systems

Proper performance of this coil is guaranteed only while the coil is being used on the MR system (hardware/software level) specified at the time of purchase. Upgrades or other modifications to the system software and/or hardware may affect compatibility. Prior to upgrading your MR system, please contact the Invivo Customer Service Department to discuss coil compatibility issues. Failure to do so may void your warranty.

	Attention, Consult Accompanying Documents	<p>NOTICE:</p> <p>THIS EQUIPMENT SHALL BE TRANSPORTED AND STORED UNDER THE FOLLOWING CONDITIONS:</p> <ol style="list-style-type: none"><li>1. Ambient temperature range of -40°C to +70°C</li><li>2. Relative humidity range of 10% TO 100%, including condensation</li><li>3. Atmospheric pressure range of 500 hPa TO 1060 hPa</li></ol> <p><b>WARNING:</b> This product contains chemicals, including lead, known to the state of California to cause birth defects or other reproductive harm. <b>Wash hands after handling.</b></p>
	Type BF Equipment	
	Class II Equipment	
	0123	

**Caution:**  
**Federal law restricts this device to sale, distribution, and use by or on the order of a physician.**

 **Invivo™**  
Invivo Corporation      Phone: (352) 336-0010  
3545 SW 47th Avenue      Fax: (352) 336-1410  
Gainesville, FL 32608      info@invivocorp.com  
U.S.A.      www.invivocorp.com

# Introduction

This manual describes the safety precautions, features, use and care, of the Invivo HNC-63-INT Neurovascular Array Coil, compatible with the Philips Intera 1.5T MRI System. Please review this manual thoroughly before using the device.

If you have any questions or comments on this manual, or need any assistance with the use of the product, please contact your Invivo sales representative:

**1-800-524-1476**

# Compatibility

The Invivo HNC-63-INT Neurovascular Array Coil is compatible with Philips Intera 1.5T MRI systems operating with Release 8.1.1 software or above.

**NOTE: Release 8.1.1 software requires a SYNERGY MULTICONNECT patch available through Philips Medical Systems. Contact your Philips Representative for this software patch. Software releases after 8.1.1 do not require the software patch.**

**A SYNERGY MULTICONNECT device is required for use of this product. Contact your Philips Representative for the Synergy MultiConnect device.**

## Manufacturer:

Invivo Corporation  
3545 SW 47th Avenue  
Gainesville, FL 32608  
U.S.A.

Phone: (352) 336-0010  
Fax: (352) 336-1410  
Web: [www.invivocorp.com](http://www.invivocorp.com)  
E-mail: [info@invivocorp.com](mailto:info@invivocorp.com)

## For Sales and Service in Europe:

Invivo Germany GmbH  
Schweinfurter Strasse 28  
97076, Würzburg  
Germany

Phone: +49 (0)931 359 76-0  
Fax: +49 (0)931 359 76-10

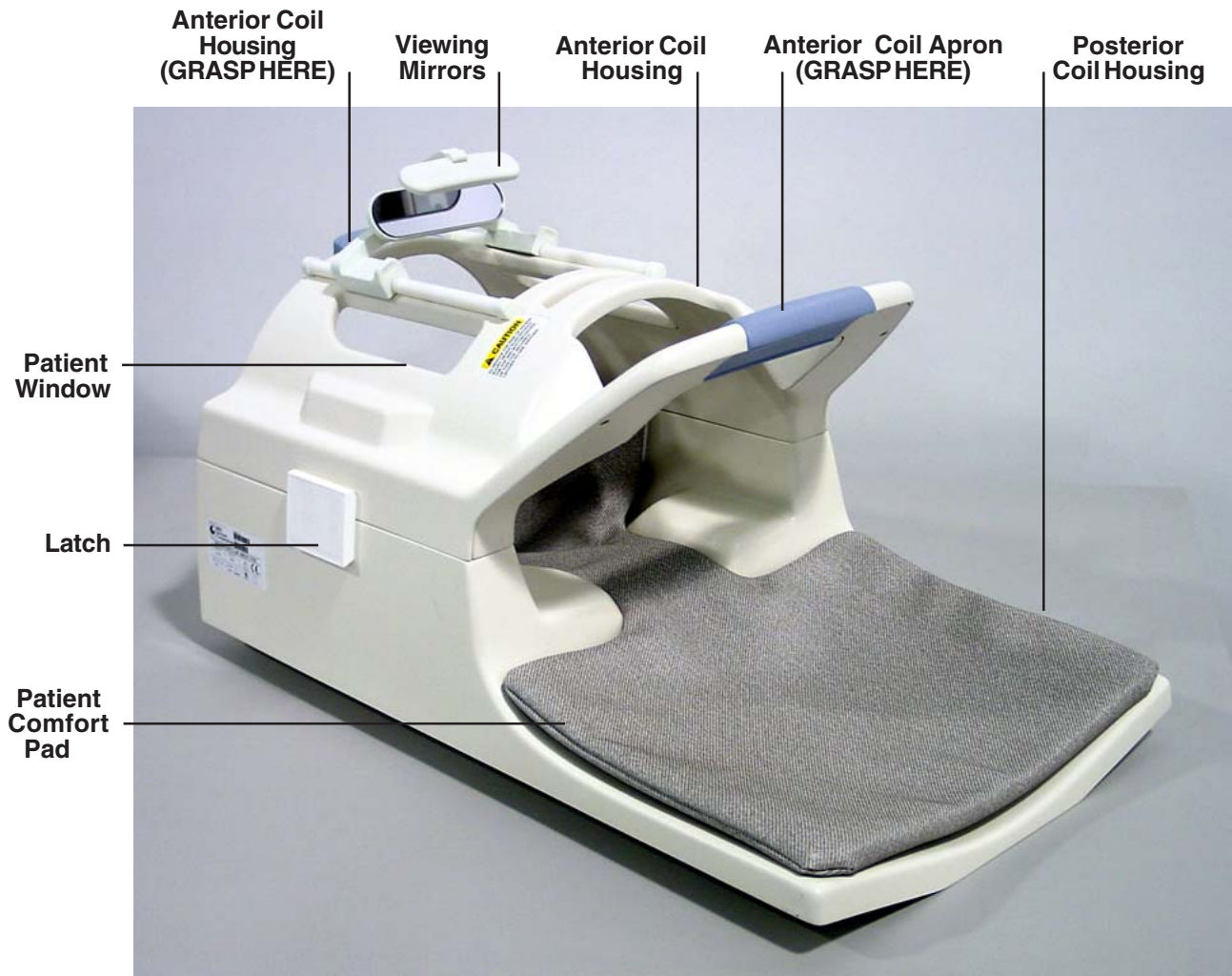
## Authorized Representative in Europe:

GBM Authorised Representative Ltd.  
The White House, 2 Meadow  
Godalming, Surrey GU7 3HN  
United Kingdom

Phone: 44 (0) 7710 039721  
Fax: 44 1483 424 310  
Web: [www.mba-gbm.com](http://www.mba-gbm.com)  
E-mail: [martin.biggs@mba-gbm.com](mailto:martin.biggs@mba-gbm.com)

# HNC Neurovascular Array Coil

Your HNC-63-INT Neurovascular Array Coil package consists of the following parts. Please inspect the package upon receipt to make sure all parts are present and in good order. Use this guide to refer to part names throughout this manual.



The HNC-63-INT consists of two housings to facilitate lifting and positioning the coil on the patient cradle and patient imaging. A latch is located on each side of the housing to secure the housings together and ensure proper electrical connections between anterior and posterior housings. With latches in the open position, the anterior housing may be lifted from the posterior housing.

Extreme care should be taken if attempting to move the HNC in one operation. When lifting the anterior housing from the posterior housing, always grasp the coil by the apron and superior end. **IMPORTANT: Never lift the coil by the rungs in the patient viewing window or by the viewing mirror.**

# Table of Contents

<b>HNC-63-INT Neurovascular Array Coil .....</b>	<b>4</b>
<b>Chapter 1 - Patient Safety .....</b>	<b>6</b>
Training .....	6
Quality Assurance .....	6
Indications .....	6
Contraindications .....	6
Precautions .....	6
Cautions .....	7
Emergency Procedures .....	7
Technical Considerations .....	8
<b>Chapter 2 - Using the HNC-63-INT Neurovascular Array Coil .....</b>	<b>9</b>
Positioning the HNC-63-INT Coil on the Patient Table .....	9
Positioning the Patient .....	10
Synergy MultiConnect (SMC) .....	11
Connecting the Cable .....	12
Left Side Patient Interface Control Unit (PICU) .....	13
Right Side Patient Interface Control Unit (PICU) .....	13
<b>Chapter 3 - Quality Assurance .....</b>	<b>14</b>
Quality Assurance .....	14
SNR Calculations .....	19
<b>Chapter 4 - Scanning Set Up .....</b>	<b>23</b>
Head and Neck Imaging .....	23
Selecting the Active Coil .....	23
Field of View and Coverage .....	23
Survey Image .....	23
Using Autoslim .....	23
Scanning Step by Step .....	24
<b>Chapter 5 - Scan Protocols .....</b>	<b>25</b>
<b>Chapter 6 - Maintenance .....</b>	<b>26</b>
Cleaning .....	26
Storage .....	26

# Chapter 1 - Patient Safety

## Training

This manual contains detailed information on the setup, positioning and use of the Invivo Corporation coil. Read the instructions carefully and thoroughly before attempting to scan patients with the coil.

## Quality Assurance


The procedure described in the Quality Assurance Section of this manual should be performed upon receipt of the coil to establish a baseline of coil performance. The procedure should be repeated at regular intervals.


## Indications

The coil is indicated for use, on the order of a physician, in conjunction with an MR scanner as an accessory to produce images of the brain, cervical spine, anterior neck, and vasculature of the head and neck, to the aortic arch.

## Contra-indications


The operator should be aware of the following contraindications for use related to the strong magnetic field of the MR system:

 Scanning is contraindicated for patients who have electrically, magnetically or mechanically activated implants (for example, cardiac pacemakers). The magnetic and electromagnetic fields produced by the MR System and coil may interfere with the operations of these devices.


 Scanning patients with intracranial aneurysm clips is contraindicated.


## Precautions

Precautions should be taken when scanning patients with the following conditions:

 Greater than normal potential for cardiac arrest




 Increased likelihood for developing seizures or claustrophobia

 Unconscious, heavily sedated, or confused physical or mental state

 Inability to maintain reliable communications

## Cautions

The following general warning statements apply to scanning with a magnetic resonance system. For further details, review the warnings in your MR system Operators Manual.

   Do not cross or loop cables. Arcing and patient burns could result. Route cables out of the magnet so that they do not touch the patient.

⚠ Assure that the patient is not touching the bore. If necessary, place pads between the patient and the surface of the bore.

⚠ If the patient complains of warming, tingling, stinging, or similar sensations, promptly stop the scan procedure, examine the patient, and contact the responsible physician before continuing the procedure. Pay special attention to very young, sedated, or other compromised patients who may not be able to communicate effectively.

⚠ Patients with ferromagnetic metal should not be scanned because the magnetic field may interact with implanted surgical clips or other ferromagnetic materials.

⚠ Persons with cardiac pacemakers or other implanted electronic devices should not enter the magnetic field zone delineated by the MR system manufacturer.

⚠ There is a risk to scanning feverish or decompensated cardiac patients.

⚠ Facial makeup should be removed before scanning because it may contain metal flakes which can cause skin and eye irritation. Permanent eyeliner tattoos may cause eye irritation due to ferromagnetic particles.

⚠ Patients who work in environments in which there is a risk of having embedded metallic fragments in or near the eye should be carefully screened before undergoing an MR exam.

⚠ Visually inspect the cable insulator jackets, strain reliefs and connector boxes before each use. If the insulation is broken, or if the cable is frayed, immediately discontinue use of the device.








## Emergency Procedures

In the unlikely event that a coil creates smoke, sparks, or makes an unusually loud noise, or if the patient requires emergency assistance:

- Stop the scan if one is in progress.
- Remove the patient from the scan room if medical treatment is needed.

## Technical Considerations

-  The coil and accessories require special conditions regarding electromagnetic compatibility. The coil must be installed and used in a shielded scan room provided with the MR magnet and system. The user must ensure that the scan room door is closed during system use. Failure to do so may cause reciprocal interference with portable and mobile RF communications equipment, affecting the performance of the MR coil and/or such equipment.
-  The coil should only be used with the accessories specified in the operator's manual.
-  The use of accessories other than those specified in the operator's manual may result in decreased ESD immunity of the coil or MR system, causing damage to the coil and/or system.
-  The equipment should not be used with other coils or equipment present in the MR scanner except as specified in the Operator's Manual.
-  Tampering with the cable pins and connector may damage the connector and affect coil or system performance. Please verify that connector and pins are not damaged before use.



# Chapter 2 - Using the HNC-63-INT Array Coil

## Positioning the HNC-63-INT Coil on the Patient Table

**IMPORTANT:** You must have the Synergy MultiConnect (SMC) device and Level 8.1.1 or higher software in order for the Intera system to recognize the coil. Additionally, Release 8.1.1 software requires a Synergy MultiConnect patch to enable this coil to be recognized by your system. Software releases above 8.1.1 do not require the patch.



The HNC-63-INT Neurovascular Array Coil is designed for imaging of the brain, cervical spine, anterior neck and vasculature in the head & neck, to the aortic arch.

Polarity (i.e., coil orientation) must be maintained to produce acceptable images. The coil must be placed on the patient support with the cable exiting the coil on the right, as you are facing the magnet. **The HNC-63-INT coil is designed for head first exams only!**

The HNC coil is designed to rest directly on the patient support. With the anterior coil housing removed, center the posterior coil housing on the patient support at the magnet end of the patient support. Position support pad flush with the end of the HNC Coil.

The internal coil pad should be centered on the posterior housing. The pad serves to provide additional patient comfort during the scan, and helps center the patient in the coil, and is recommended for optimal coil performance.

## Positioning the Patient.



When lifting the anterior coil housing, always grasp the coil by the apron and the superior end of the housing. **Never lift the coil housing by the viewing window or mirror.**



Adjust the patient so their shoulders are snug against the curved arch of the posterior coil housing.



Firmly hold the anterior coil housing and carefully place it on the posterior coil housing. As you lower the anterior coil housing, center and seat the RF connector pins while the flat mating surfaces meet. Secure the latches on each side of the housing.

Slide the viewing mirror if necessary for patient viewing. Use the window on the anterior coil housing to ensure the patient is centered properly. Using positioning beams, center on the anatomy to be imaged.

## Synergy MultiConnect (SMC)



The Synergy MultiConnect (SMC) shown here is a required option to use the HNC-63-INT coil.

**IMPORTANT:** You must have the SMC device and Level 8.1.1 or higher software on your Intera system.

**Additionally,** Release 8.1.1 software requires a Synergy MultiConnect patch to enable this coil to be recognized by your system. Contact your Philips representative to receive this software patch. Software releases above 8.1.1 do not require the patch.

For more information on Synergy MultiConnect, please refer to Intera Release 8 Philips Application Guide/Volume 1 - Basics, Section 3.22.



The Synergy MultiConnect (SMC) is shown here with the HNC coil connector.



## Connecting the Cable



Attach the Synergy MultiConnect (SMC) holder to the same side of the support as the patient interface control unit (PICU) facing the magnet. In this example, the PICU is on the left side. Slide the holder toward the bore, even with the patients knees.

For systems with PICU on left side of magnet, transfer SMC connector across table to the PICU. **IMPORTANT:** For SMC cable to reach PICU on left side of magnet, patient will need to be in position within the magnet, e.g., coil at magnet isocenter.



Route the coil cable and connector to the SMC holder, as shown above.



Join the SMC and HNC connectors, and place the assembly into the SMC holder, as shown above.



Landmark on the anatomy to be imaged and perform TRAVEL-TO-SCANPLANE.

Left Side  
Patient  
Interface  
Control Unit  
(PICU)



Attach SMC connector to PICU. Example above is left side PICU.

Right Side  
Patient  
Interface  
Control Unit  
(PICU)

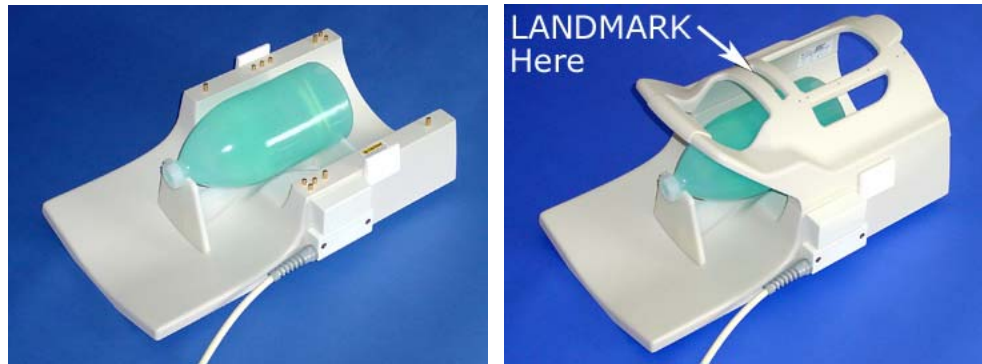


Attach SMC connector to PICU. Example above is right side PICU.

# Chapter 3 - Quality Assurance

## Quality Assurance

Remove the coil top and place the phantom positioner (part number 102485) and the phantom (part number 102690) as shown in the figures below. Replace the coil top.



Connect the coil to the system as detailed in Chapter 2, "Connecting the cable." Landmark on the the phantom through the small window in the top of the coil.

Follow the procedure found on the next 8 pages.

Run a SURVEY scan using the parameters listed below.

TIP: Save this SURVEY scan for future QA scans.

An example of the SURVEY images is on page 15.

Geometry		SPIR	no
Coil Selection	31B-MRIDEvic	TFEprepulse	invert
-channel Combination	2345	-slice selection	no
-connection	d	-delay	shortest
Multi Coil	no	MTC	no
Homogeneity correction	none	SARmode	default
FOV(mm)	400.00	Gradient mode	regular
RFOV(%)	100.00		
Foldover suppression	no	Motion	
Matrix scan	256	Cardiac synchronisation	no
-reconstruction	256	Respiratory compensation	no
Scan percentage(%)	50.00	Flow compensation	no
Stacks	3	NSA	1
-current	A		
-type	parallel	Dyn/ang	
-slices	3	Angio	no
-slicethickness(mm)	10.00	Quantitative flow	no
-slice gap	userdefined	Manual start	no
-- gap (mm)	10.00	Dynamic study	no
-slice orientation	sagittal		
-foldover direction	AP	Postproc	
Slice scan order	default	Preparation phases	auto
Stack display order	no	MIP/MPR	no
PlanAlign	no	Images:	O:M no no no
RESTslabs	0	Autoview image	M
Patient position	head first	Reference tissue	White matter
-orientation	supine	Preset window contrast	soft
		Reconstruction mode	immediate
Contrast		Save raw data	no
Scanmode	M2D	Push to workstation	no
-technique	FFE	Hardcopy protocol	no
Contrastenhancement	T1	Ringing filter	no
FastImagingmode	TFE	Silent mode	no
-shot mode	multi-shot		
TFE factor	4	Offc/ang	no
-shot interval	shortest	Stacks	3
-profile order	linear	-current	A
Echoes	1	Stack Offc.AP (P=+mm)	-20.00
-partial echo	no	RL (L=+mm)	0.00
TE	shortest	FH (H=+mm)	0.00
Flip angle (deg)	20.00	Ang. AP (deg)	0.00
TR	userdefined	RL (deg)	-0.00
-(ms)	15.00	FH (deg)	-0.00
Half Scan	no		
Water fat shift	maximum		
Shim	no		

Example of SURVEY images are below; note position of slices for the SNR check.

Proceed to the SNR check on page 16.

The image displays the MRI software interface. At the top, there are two sets of survey images. The left set shows a large, vertical, teardrop-shaped scan area with three vertical lines labeled 1, 2, and 3, and a horizontal line labeled H. The right set shows two smaller, similar scan areas, also with lines 1, 2, 3 and H. Below the images is a control panel with various buttons and a technical data window.

**Technical Data Window:**

Scan List : Planscan		TEST 4		9-JAN-2002 16:28	
H45:MS,FE,15, SAG, FFE, 200, 15, 30		Scan time 01:43		RSL: 100.0%	
Coil selection	318-MRI-Devic	Q-Body, Knee ...	318-MRI-Devic		
ch. combination	2345	1, 2, 3, 4, 5, 6, 12 ...	123456		
FOV (mm)	400.00	10.00 - 530.00			
RFOV (°)	100.00	25.00 - 100.00			
Stacks	1, 2				
slice thickness (mm)	5.00	0.50 - 320.00			
foldover direction	FH	AP, FH			
TE (ms)	user defined	shortest ... out-phase			
TR (ms)	15.00	0.70 - 80.00			
NSA	user defined	shortest, user defined			
Preparation phases	2	1 - 32			
	full	auto, full, prep_only			

**Control Panel:**

- Buttons: Geometry, Offc/ang, Contrast, Motion, Info, Dyn/ang, Postproc, Reset, Clear, Help, Cancel, Proceed.
- Navigation: < >, - +

**Bottom Right Panel:**

TEST 4	38495	M
12/22/1923		
SCOUT	01/09/2002,16:21	
TR	30	30 Slice
TE	4.0	Echo
Flip	30	
CORONAL	RFOV	100%
FFEM	FOV	400
ScTime: 7.8s	THK	5.0/0.0
		318-M, 256/256
AP	-20	ant

WW 2000  
VA 1000  
Gyrosan NT Intera T15  
TROPICAL MRI



Run an SNR CHECK scan using the parameters listed below.  
 TIP: Save this SNR CHECK scan for future QA scans.

Position slices for the SNR CHECK as shown on page 15.

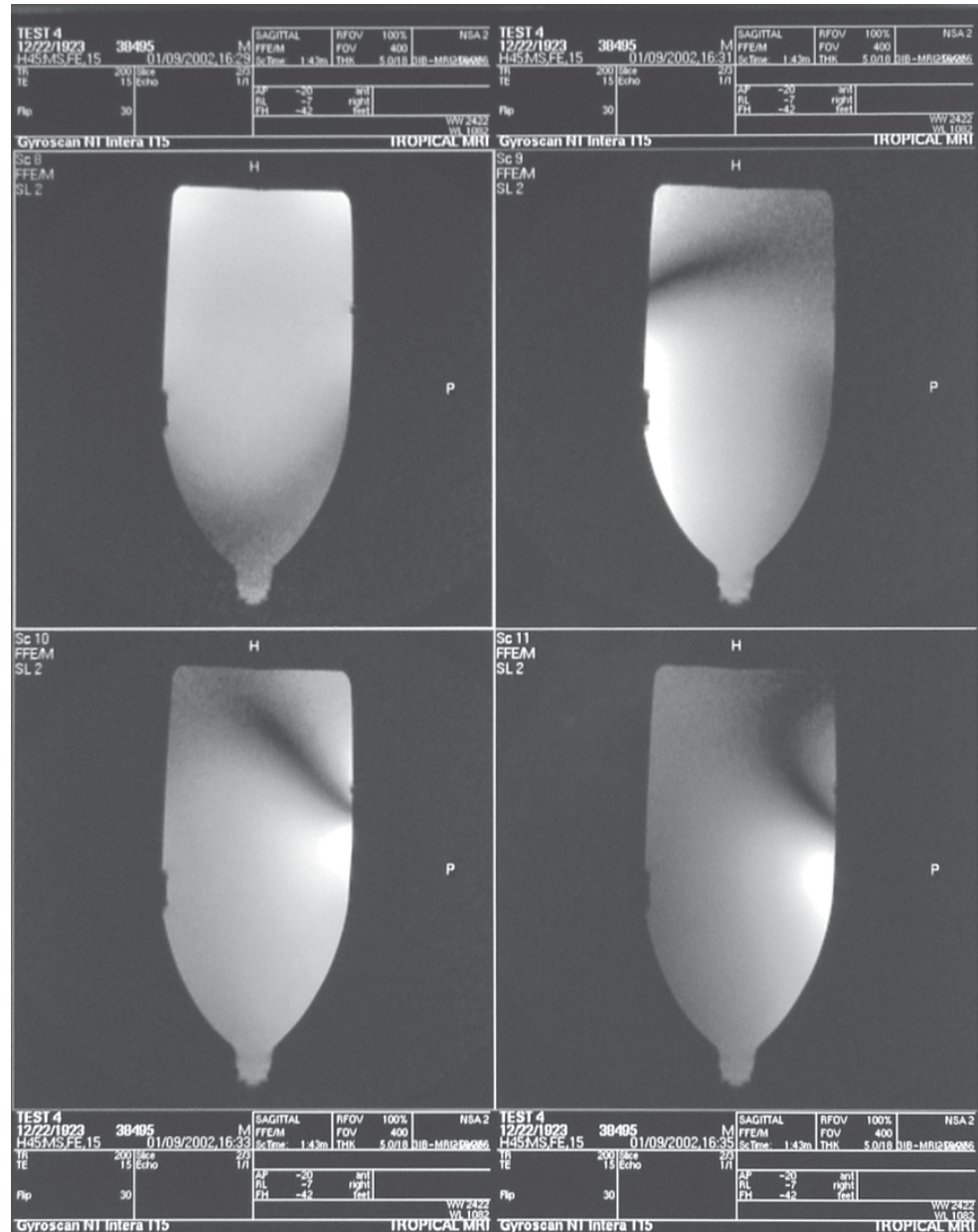
**\*\*\*IMPORTANT: Be certain to SAVE RAW DATA under Post Processing.\*\*\***

Geometry		SPIR	no
Coil Selection	3IB-MRIDevic	MTC	no
-channelCombination	2345	SAR mode	default
-connection	d	Gradient mode	regular
Homogeneity correction	none		
FOV(mm)	400.00	Motion	
RFOV(%)	100.00	Cardiac synchronisation	no
Foldover suppression	no	Respiratory compensation	no
Matrix scan	256	Flow compensation	yes
-reconstruction	256	NSA	2
Scan percentage (%)	100.00	SMART	no
Stacks	1		
-type	parallel	Dyn/ang	
-slices	3	Angio	no
-slice thickness (mm)	5.00	Quantitative flow	no
-slice gap	user defined	Manual start	no
-- gap (mm)	18.00	Dynamic study	no
-slice orientation	sagittal		
-foldover direction	AP	Postproc	
Slice scan order	default	Preparation phases	full
PlanAlign	no	MIP/MPR	no
REST slabs	0	Images:	O:M no no no
Patient position	head first	Autoview image	M
-orientation	supine	Reference tissue	Grey matter
		Preset window contrast	soft
		Reconstruction mode	immediate
Contrast		<b>***Save raw data***</b>	<b>yes</b>
Scan mode	MS	Push to workstation	no
-technique	FFE	Hardcopy protocol	no
Contrast enhancement	no	Ringing filter	no
Fast Imaging mode	none	Silent mode	no
Echoes	1		
-partial echo	yes	Offc/ang	
TE	user defined	Stacks	1
-(ms)	15.00	Stack Offc.AP (P=+mm)	-20.00
Flip angle (deg)	30.00	RL (L=+mm)	0.00
TR	user defined	FH (H=+mm)	0.00
-(ms)	200.00	Ang. AP (deg)	0.00
Half Scan	no	RL (deg)	-0.00
Water fat shift	user defined	FH (deg)	-0.00
-(pixels)	2.000		
Shim	no		

## Reconstruct SNR CHECK image for individual channels using the instructions provided below.

1. Before running the SNR CHECK scan, be sure to have the "Save Raw Data" option set to "Yes" under [Postproc].
2. Do not delete the current scan from the [Scanlist].
3. Under the [Scanlist] icon, select the [Add Rec] icon, then the [Del. Recon] icon.
4. Left-mouse select on the scan to perform the reconstructions, then select [Proceed].
5. Change the "Synergy selection" option from "0" to "2" for reconstruction of the 2nd channel, then select [Proceed].
6. Select [Options], and change the name of the reconstruction to "2".
7. Repeat steps 3-6 for each channel (channels 3,4,5), and change the "Synergy selection" option to the next channel, then rename the scans appropriately for each channel selected (i.e. 2,3,4,5)
8. From the [Scan List] icon, delete all scans except those renamed for each element.
9. Select [Start Scan] to start the reconstruction of the images.

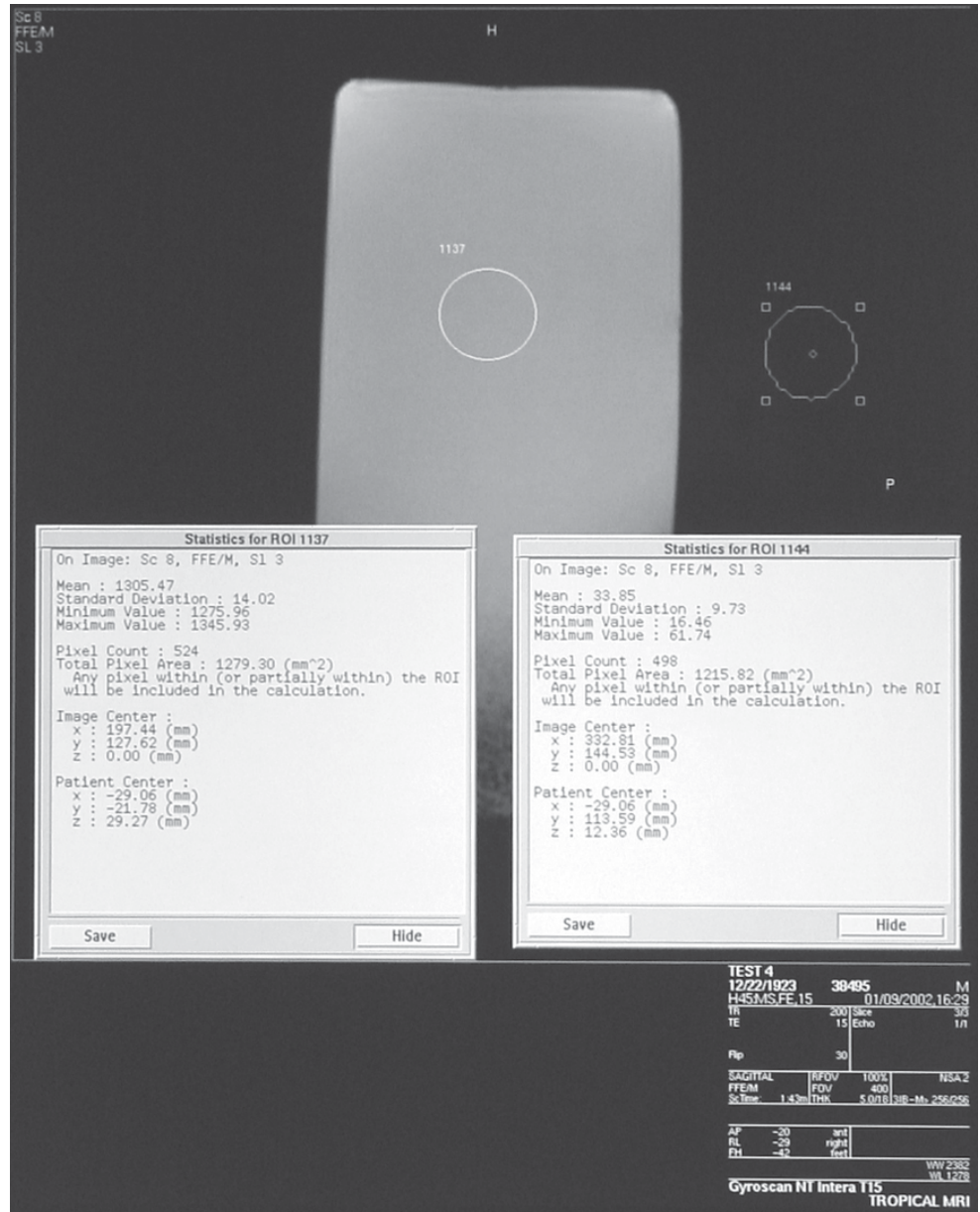
Note: Example of reconstructed images are shown below.



# SNR Calculations

1. Select the reconstructed image from Channel 2, and display an elliptical ROI with a total pixel area of 1300 mm squared. Refer to Philips Gyroscan Intera Instructions Manual for ROI help.
2. Position ROI in the center of the phantom bottle, as shown below.
3. Bring up the Statistics for ROI, right-mouse select over the ROI number (arbitrary number next to the ROI), left-mouse select on Statistics from the drop-down box, and select Statistics again from drop box.
4. Record the Signal Mean value.
5. Move ROI to background noise as shown below.
6. Record the noise standard deviation.
7. Divide the signal mean by the noise standard deviation.
8. Record this SNR value for future reference.
9. Spec > 50.

## Example



# SNR Calculations

Repeat SNR calculations as described on page 18 for the remaining reconstructed images from channels 3,4,5.

## Example



# SNR Calculations

Repeat SNR calculations as described on page 18 for the remaining reconstructed images from channels 3,4,5.

## Example

Sc 10  
FFE/M  
SL 3

H

1218

1220

P

**Statistics for ROI 1218**

On Image: Sc 10, FFE/M, S1 3

Mean : 1138.63  
Standard Deviation : 129.65  
Minimum Value : 911.88  
Maximum Value : 1438.09

Pixel Count : 568  
Total Pixel Area : 1386.72 (mm<sup>2</sup>)  
Any pixel within (or partially within) the ROI will be included in the calculation.

Image Center :  
x : 201.57 (mm)  
y : 191.18 (mm)  
z : 0.00 (mm)

Patient Center :  
x : -29.06 (mm)  
y : -17.65 (mm)  
z : -34.29 (mm)

Save Hide

**Statistics for ROI 1220**

On Image: Sc 10, FFE/M, S1 3

Mean : 26.46  
Standard Deviation : 8.33  
Minimum Value : 9.81  
Maximum Value : 55.56

Pixel Count : 618  
Total Pixel Area : 1508.79 (mm<sup>2</sup>)  
Any pixel within (or partially within) the ROI will be included in the calculation.

Image Center :  
x : 331.38 (mm)  
y : 201.57 (mm)  
z : 0.00 (mm)

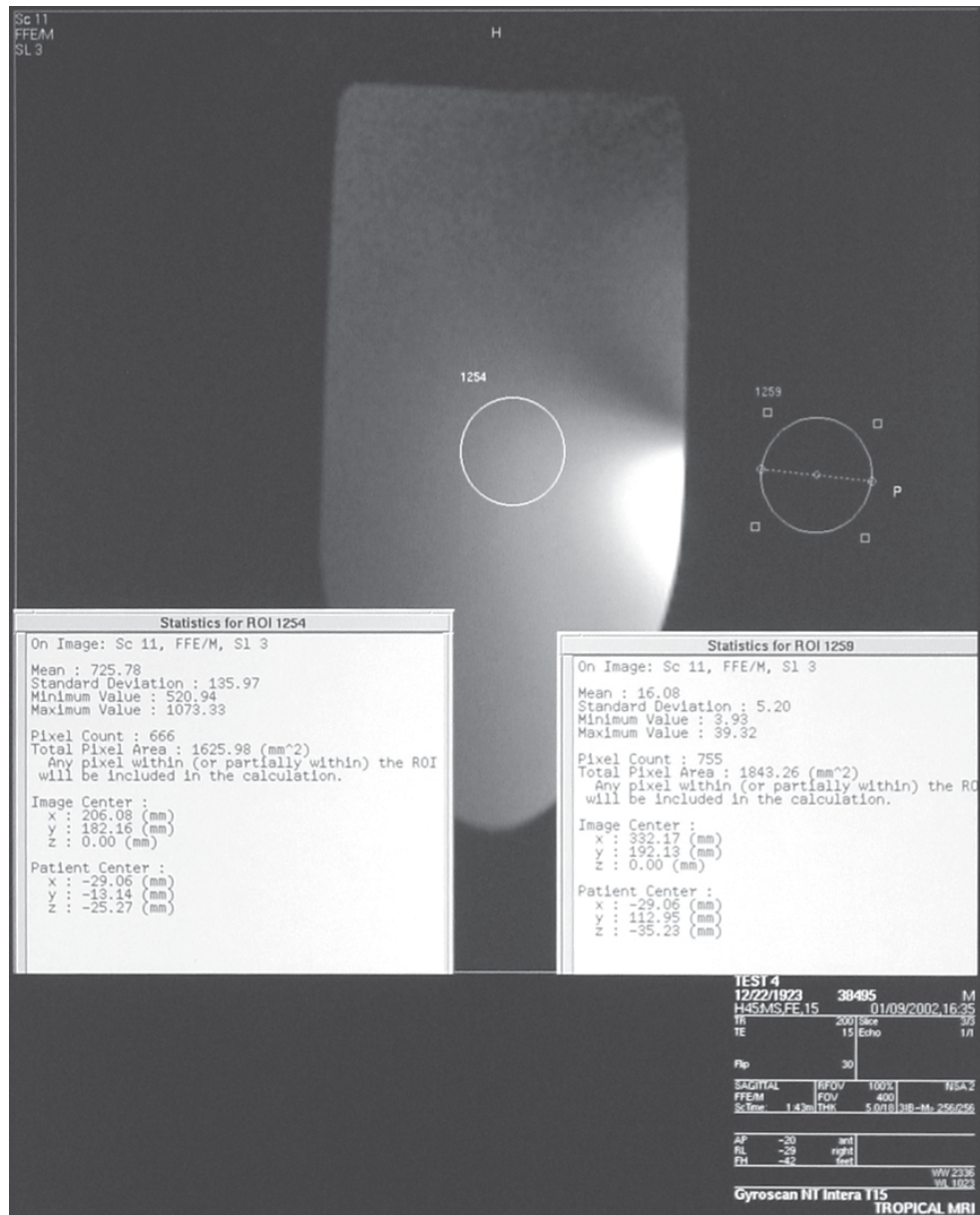
Patient Center :  
x : -29.06 (mm)  
y : 112.16 (mm)  
z : -44.68 (mm)

TEST 4			
12/22/1923	38495	M	
H45MS,FE,15	01/09/2002,16:33		
TR	2001	Slice	3/5
TE	15	Echo	1/1
Flip 30			
SAGITTAL	RFOV	100%	NSA*2
FFE/M	FOV	400	
ScTime	1:43m	THk	5.018
JIB-Mr, 256/256			
AP	-30	int	
RL	-39	right	
PH	-42	feet	
WW 193T			
WL 565			
Gyrosan NT Intera T15			
TROPICAL MRI			

# SNR Calculations

Repeat SNR calculations as described on page 18 for the remaining reconstructed images from channels 3,4,5.

## Example



# Chapter 4 - Scanning Set Up

## Head and Neck Imaging

One of the advantages of using the Invivo HNC-63-INT Neurovascular Array Coil (HNC) is the ability to acquire sequences of the head and neck without having to re-enter the scan room to change coils and/or re-center the patient. When positioning a patient for a study of the brain as well as an MRA of the carotids, center on the head as you would normally do for a routine brain scan. Then, to acquire a coronal or sagittal SURVEY image for the carotid MRA prescription, use an inferior offset of "FH-120" and a 240 mm FOV.

## Selecting the Active Coil

The neurovascular array coil contains both a head coil and a neck coil. The head coil (channel 2), neck coil (channels 3,4,5) or both head and neck coils (channels 2,3,4,5) can be active at any given time. To select the active coil(s), pick the proper channel(s) from the channel combination (ch. combination) menu on your Intera Operator's Console.

### EXAMPLES:

**HEAD only: Select                      Ch. combination 2**

**NECK only: Select                      Ch. combination 3,4,5**

**HEAD & NECK: Select                Ch. combination 2,3,4,5**

## Field of View and Coverage

For head or neck studies a FOV of 200 mm. is suggested, depending upon head size. The HNC-63-INT coil is 280 mm. in diameter. If the entire coil is active, a field of view of 320 mm. to 400 mm. is suggested. You may use a smaller FOV if desired. Fold-over suppression must be set to YES.

## Survey Image

The Intera body coil may be used at any time while the HNC-63-INT Neurovascular Array Coil is in the scanner. This allows a large FOV (400 mm) body coil SURVEY to be performed, which is helpful in determining the foot-head offset required for imaging the neck.

## IMPORTANT! Using Autoshim

AUTOSHIM is a feature of Intera software to improve image quality by improving the magnetic field homogeneity within the FOV selected. The improvement in image quality is often dramatic when the selected FOV is far off center, and when acquiring SPIR images.

## Scanning Step by Step

- Scan Select: Software Release 8.1.1, Choose "3IB-MRIDEVIC", Software Releases above 8.1.1, choose "SMC-MRI".
- Select Channel combination(s):
  - **HEAD only: Select**                      **Ch. combination 2**
  - **NECK only: Select**                      **Ch. combination 3,4,5**
  - **HEAD & NECK: Select**                      **Ch. combination 2,3,4,5**
- Plan Slices
- Confirm Planning
- Geometry Page: Homogeneity Correction, Select "NONE"
- Start Scan
- **IMPORTANT:** Upon scan completion, you must change channel combination if imaging a different region. System will default to last Channel combination when another scan is Added.



---

# Chapter 5 - Scan Protocols

Invivo Corporation recommends that you select imaging protocols that have been established by your radiologists. Additional protocols can be found within your Philips Application Guides.

# Chapter 6 - Maintenance

## Cleaning

The Neurovascular Array coil and patient comfort pads may be cleaned by wiping with a cloth dampened with a solution of 30% isopropyl alcohol and 70% tap water. **Do not pour any cleaning solution directly on the coil!** Let coil housing and pads dry before use.

## Storage

The coil should be stored in an air-conditioned scan room or equipment room.

