TABLE OF CONTENTS

1- INTRODUCTION

This tool reads and displays exam, series, and image headers. This can help provide information relating to complaints of artifacts, or poor quality in Signa images. Frequently asked questions involve transmit gain, receive gain, power monitor, patient weight, critical scan parameters, gradient coil, etc. This tool also provides easy access to raw file header information, such as the "base" run number.

Important

This Run # is correct for single scan image mode, but for multiscan image mode, **you must use the Raw File Manager tool** to obtain the correct Run number for the desired image.

2- PROCEDURE

1. On the Service Desktop, select **[Utilities]**, **[Read Header]**, then **[Start…]**. The RDHD Main Menu is displayed:

```
================================================
                  RDHD MAIN MENU
================================================

Exam_No = xxx,    Series_No = x,   Image_No = x

A. Select Exam
B. Select Series
C. Select image
D. List/Select Exam
E. List/Select Series
F. List/Select Image
G. Display Header
Q. Quit
YOUR CHOICE :
```

2. Use choices **A**, **B**, and **C** to directly enter desired exam, series, and image number, or use choices **D**, **E**, and **F** to list/select each one.

3. After entering the exam, series, and image number, type **G <Enter>** to get the Display Header Menu:

```
================================================
 DISPLAY HEADER MENU
================================================
A. Exam
B. Series
C. Image
Q. Quit
YOUR CHOICE :
```

4. Enter choice (**A**, **B**, or **C**) to display desired header information, or **Q <Enter>** to quit.

2-1 Exam Header Information

Refer to Table 2-1 for Exam Header items.

TABLE 2-1
EXAM HEADER INFORMATION

EXAM HEADER ITEM	SAMPLE VALUE OR COMMENT
The Suite ID for this Exam	= B15B
The Make-Unique Flag	= 0
Disk ID for this Exam	=
Exam Number	= 50019
Hospital Name	=
Detector Type	=
(CT header info)	
Decon Kernal Shift Count	=
Magnet Strength (in Gauss)	= 15000
Patient ID	= GESERVICE
Patient Name	= RDHDR
Patient Age (years)	= 0
Patient Age Notation	= 0
Patient Sex	= M
Patient Weight	= 73 (kgs) 160 (lbs)
Trauma Flag	= 0
---Patient History ---	
---End Patient History ---	
Requisition Number	=
Exam Date/Time Stamp	= Fri Oct 8 13:58:28 1999
Referring Physician	=
Diagnostician/Radiologist	=
Operator	=
Exam Description	=
Exam Type	= MR
Exam Format	= 6
Creator Suite and Host	= B15BOC0
Date/Time of Last Change	= Fri Oct 8 13:58:28 1999
Process Allocated this Record	= MRIFCCALLOC
Number of Updates to Header	= 0
Genesis Version - Created	= 08
Genesis Version - Now	= 08
Exam Record Checksum	= 3967758762
Last Series Number Used	= 2
Number of Series Archived	= 0
Number of Series Existing	= 2
Series Keys for this Exam	= 416546616
Number of Unstored Series	= 0
Unstored Series Keys for Exam	= 0
Number of Unarchived Series	= 2
Unarchive Series Keys for Exam	= 65537
Number of Prospective Series	= 2
Prospective Series Keys for Exam	= 0
Last Model Number Used	= 0
Number of ThreeD Models	= 0
Patient Status	=
Unique System ID	=

Unique Service ID	=
Mobile Location Number	= 999
Study Entity Unique ID	=
Study Status	= 0

2-2 Series Header Information

The number of pages in the Series Header depends on the number of echoes generated during the scan. Refer to Table 2-2 for Series Header items.

TABLE 2-2
SERIES HEADER INFORMATION

Series Header Item	**Sample Value or Comment**
The Suite ID for This Series	= B15B
The Make-Unique Flag	= 0
Disk ID for This Series	=
Exam Number	= 50019
Series Number	=
Allocation Series D/Time Stamp	= Fri Oct 8 13:58:28 1999
Actual Series D/Time Stamp	= Fri Oct 8 13:58:28 1999
Series Description	= Body,Ax,2D,GRE
Primary Receiver Suite/Host	= B15BOC0
Archiver Suite and Host	=
Series Type	= RETRO
Series From Which Prescribed	= 0
Most-Like Plane for (L/S)	= Ax
Patient Position	= Prone
Patient Entry	= Feet First
Anatomical Reference	= SN
Horizontal Landmark	= 373.30
Scan Protocol Name	=
Contrast	=
RAS Letter 1st Scan Loc. (L/S)	= S
First Scan Location (L/S)	= 0.00
RAS Let. last Scan Loc. (L/S)	= S
Last Scan Location (L/S)	= 0.00
Last Pulse Sequence Used (L/S)	= GR
Image Sort Order (L/S)	= 0
Landmark Counter	= 0
Number of Acquisitions	= 1
Date/Time of Last Change	= Fri Oct 8 13:58:28 1999
Process Allocated This Record	= MRIFCCALLOC
Number of Updates to Header	= 0
Genesis Version - Created	= 08
Genesis Version - Now	= 08
PixelData Size - as Stored	= 0.000000e+00
PixelData Size - Compressed	= 0.000000e+00
PixelData Size - Uncompressed	= 0.000000e+000
Series Record Checksum	= 3045279710
Number of Images Archived	= 0
Last Image Number Used	= 1

Number of Images Existing	= 1	
Images Keys Len. for This Series	= 0	
Number of Unstored Images	= 0	
Unstored Image Keys Length	= 0	
Number of Unarchived Images	= 1	
Unarchived Image Keys Length	= 0	
Echo 1 Alpha Value	= |	
Echo 1 Beta Value	= |	*These four values repeat for each echo.*
Echo 1 Window Value	= |	
Echo 1 Level Value	= |	
Series Entity Unique ID	=	
Landmark Unique ID	=	
Equipment Unique ID	=	

2-3 Image Header Information

Refer to Table 2-3 for Image Header items.

TABLE 2-3
IMAGE HEADER INFORMATION

Image Header Item	Sample Value or Comment
Suite ID for This Image	= B15B
The Make-Unique Flag	= 0
Disk ID for This Image	=
Exam Number for This Image	= 50019
Series Number for This Image	= 1
Image Number	= 1
Allocation Image D/Time Stamp	= Fri Oct 8 13:58:28 1999
Duration of Scan (usec)	= 1.188200e+07
Slice Thickness (mm)	= 5.000000e+00
Image Matrix Size - X	= 256
Image Matrix Size - Y	= 256
Display Field of View - X (mm)	= 240.00
Display Field of View - Y (mm)	= 240.00
Image Dimension - X	= 256.00
Image Dimension - Y	= 256.00
Image Pixel Size - X	= 0.94
Image Pixel Size - Y	= 0.94
Pixel Data ID	=
IV Contrast Agent	=
Image Contrast Mode	= NO
Series from Which Prescribed	= 0
Image from Which Prescribed	= 0
Screen Format (8/16 bit)	= 16
Plane Type	= Ax
Spacing Between Scans (mm)	= 0.00
Image Compression Type for Alloc	= 3
RAS Letter for Image Location	= S
Image Location	= 0.00
Center R Coord Plane Image (mm)	= 0.00
Center A Coord Plane Image (mm)	= 0.00
Center S Coord Plane Image (mm)	= 0.00
Normal R Coordinate	= 0.00

```
Normal A Coordinate ..................    = 0.00
Normal S Coordinate ..................    = 1.00
R Coord of Top LH Corner (mm) .........    = 120.00
A Coord of Top LH Corner (mm) .........    = 120.00

S Coord of Top LH Corner (mm) .........    = 0.00
R Coord of Top RH Corner (mm) .........    = -120.00
A Coord of Top RH Corner (mm) .........    = 120.00
S Coord of Top RH Corner (mm) .........    = 0.00
R Coord of Bottom RH Corner (mm) ......    = -120.00
A Coord of Bottom RH Corner (mm) ......    = -120.00
S Coord of Bottom RH Corner (mm) ......    = 0.00
Foreign Image Revision ................    = 0
Pulse Rep. Time (TR in usec) ..........    = 34000
Pulse Inv. Time (TI in usec) ..........    =
Pulse Echo Time (TE in usec) ..........    = 10000
Second Echo Time (TE2 in usec) ........    = 0
Number of Echoes ......................    = 1
Echo Number ...........................    = 1
Table Delta (1/10 mm) .................    = 0.00
Number of Excitations (NEX) ...........    = 1.000
Continuous Slices Flag ................    = YES
Cardiac Heart Rate (BPM) ..............    = 0
Delay Time after Trigger (usec) .......    =
Average SAR (Watts/Kg) ................    = 7.491977e-05

Peak SAR (Watts/Kg) ...................    = 4.307334e-03
Monitor SAR Flag ......................    = YES
Trigger Window (% R-R interval) .......    = 0
Cardiac Repetition Time ...............    = 0.000000e+00
Images Per Cardiac Cycle ..............    = 0
Actual Transmit Gain (TG 0.1db) .......    = 67
Act. Rec. Analog Gain (R1 0.1db) ......    = 11
Act. Rec. Gain Digital(R2 0.1db) ......    = 15
Flip Angle for GRASS Scans (deg) ......    = 10
Min. Delay After Trigger (usec) .......    = 0
Total Cardiac Phase Prescribed ........    = 0
Swap Phase/Frequency Axis .............    = YES
Pause Interval (Slices) ...............    = 0
Pause Time ............................    = 0.000000e+00
Oblique Plane .........................    = 2
Slice Offsets on Freq Axis ............    = 0
Center Frequency (0.1 Hz) .............    = 638919350
Auto Center Frequency (0.1 Hz) ........    = 638919350
Auto Transmit Gain (0.1dB) ............    = 67
Prescan R1 - Analog ...................    = 11

Prescan R2 - Analog ...................    = 15
Bitmap Defining User CVs ..............    = 00000000000000000000000000000001
Center Frequency Method (Hz) ..........    = 2
Imaging Mode ..........................    = 3D
Imaging Options .......................    = /VB
Pulse Sequence ........................    = 4
Pulse Sequence Mode ...................    = 3D
Pulse Sequence Name ...................    = 2dfast
PSD Creation Date and Time ............    = Mon Oct  4 23:26:09 1999
PSD Name From Inside PSD ..............    = 2DFAST
```

```
Coil Type ..............................    = BODY
Coil Name ..............................    = HEAD
Surface Coil Type ......................    = 0
Extremity Coil Flag ....................    = 0
Raw Data Run Number ....................    = 0
Calib Field Strength (x10Gauss) ........    = 0
SAT Fat/Water/None .....................    = None
Variable Bandwidth (Hz) ................    = 1.563000e+01
Num. of Slices in Scan Group ...........    = 1
Graphically Prescribed .................    = NO

Interimage/Interloc Delay (usec) .......    = 0
User Variable 0 ........................    = 0.000000e+00
User Variable 1 ........................    = 0.000000e+00
      .
      .
      .
User Variable 18 .......................    = 0.000000e+00

User Variable 19 .......................    = 0.000000e+00
Projection Angle .......................    = 0.000000e+00
Concat Sat Type Flag ...................    = 0.000000e+00
Image Allocation Key ...................    = MRIFCCALLOC
D/Time of Last Change ..................    = Fri Oct  8 13:58:28 1999
Genesis Version - Created ..............    = 08
Genesis Version - Now ..................    = 08
Pixel Data Size - as Stored ............    = 136276
Pixel Data Size - Compressed ...........    = 61569
Pixel Data Size - UnCompressed .........    = 136276
Acq. Recon Record Checksum .............    = 4169491112
Image Archive Flag .....................    = NO
Image Complete Flag ....................    = 0
Bitmap of SAT Selections ...............    =
Surf. Coil Int. Correction Flag ........    = 0
R-side SAR Pulse Loc Rel Lmk(mm) .......    = 9990
L-side SAR Pulse Loc Rel Lmk(mm) .......    = 9990

A-side SAR Pulse Loc Rel Lmk(mm) .......    = 9990
P-side SAR Pulse Loc Rel Lmk(mm) .......    = 9990
S-side SAR Pulse Loc Rel Lmk(mm) .......    = 9990
I-side SAR Pulse Loc Rel Lmk(mm) .......    = 9990
Thickness X-axis SAT Pulse (mm) ........    = 0
Thickness Y-axis SAT Pulse (mm) ........    = 0
Thickness Z-axis SAT Pulse (mm) ........    = 0
Phase Contrast Flow Axis ...............    = 0
Phase Contrast Velocity Encoding .......    = 0
Slice Thickness (mm) ...................    = 0
Auto/Manual Prescan flag ...............    = Auto Succeeded.
Bitmap of Changed Values ...............    = (0000000000000000)
Image Type .............................    = 0
Collapse Image .........................    = NO

User Variable 23 .......................    = 0.000000e+00
User Variable 24 .......................    = 0.000000e+00
Projection Algorithm ...................    = 0
Projection Algorithm Name ..............    =
X Axis Rotation ........................    = 0.000000e+00
```

```
Y Axis Rotation ......................    = 0.000000e+00
Z Axis Rotation ......................    = 0.000000e+00
Lower Range of Pixels 1 ..............    = 0
Upper Range of Pixels 1 ..............    = 0
Lower Range of Pixels 2 ..............    = 0
Upper Range of Pixels 2 ..............    = 0
Echo Train Length/Fast Spin Echo .....    = 0
Fractional Echo/Effective TE Flag .....    = 0
Preporatory Pulse Option .............    = 0
Cardiac Phase Number .................    = 0
Variable Echo Flag ...................    = 0
Reference Image Field ................    =
Summary Image Field ..................    =

Page 10 of 12
Window Value .........................    = 0
Level Value ..........................    = 0
Integer Slope Field 1 ................    = 0
Integer Slope Field 2 ................    = 0
Integer Slope Field 3 ................    = 0
Integer Slope Field 4 ................    = 0
Integer Slope Field 5 ................    = 0
Float Slope Field 1 ..................    = 1.800000e+02
Float Slope Field 2 ..................    = 4.500000e+01
Float Slope Field 3 ..................    = 5.000000e+04
Float Slope Field 4 ..................    = 0.000000e+00
Float Slope Field 5 ..................    = 0.000000e+00
String Slope Field 1 .................    =
String Slope Field 2 .................    =
Scan Acquisition Number                   = 0
Magnitude Weighting Flag                  = 2
Scale Weighted Vencoding                  = 0.000000e+00
GE Image Integrity                        = 0
Number of Phases                          = 0
Frequency Direction                       = 0

Page 11 of 12
Vascular Mode                             = 0
Image Unique ID                           =
Service Obj Class Unique ID               =
Number of 3D Slab                         = 0
Slice Locs per 3D Slab                    = 0
Number of Slabs                           = 0
Bitmap of Prescan Options                 = 0
Gradient Offset in X-Direction            = 1
Gradient Offset in Y-Direction            = 0
Gradient Offset in Z-Direction            = 0
Original or Unoriginal Image              = 0
Number of EPI Shots                       = 0
Effective Echo Spacing for EPI            = 0
Views per Segment                         = 0
Respiratory Rate, Breaths/Min             = 0
Respiratory Trig Point, % of Max          = 0
Type of Receiver Used                     = 0

Page 12 of 12
Dbdt Limit in Tesla per Sec
                                          = 0.000000e+00
```

```
Dbdt Limit in Units of Percent              = 6.600000e+01
PSD Calculated Dbdt in Tesla per Sec        = 0.000000e+00
DSD Calculated Dbdt in Units of Percent     = 0.000000e+00
Avg Head SAR                                = 1.722933e+00
Negative scan spacing for overlap slices    = 0.000000e+00
Offset Frequency – Mag.Tranfer              = 1200
User Usage Tag                              = 0
User Fill MagMSW                            = 0
User Fill MapLSW                            = 0
```

REVISION HISTORY

REV	DATE	AUTHOR	PRIMARY REASONS FOR CHANGE
0	August 5, 1998	M. Whitlow	Initial conversion from Toolbook to Word.
1	Oct. 13, 1999	M. Keber	Updates based on Release 8.3 validation (added menus, updated exam, study, and image information; removed unavailable [Save to File] and pixel header information).
2	March 9, 2001	M. Jones	Updated Tables 2-2 and 2-3.
3	Sep 3, 2001	J. Gerber	Updated for TwinSpeed scanner with Leo1 release.
4	Mar 12, 2002	Hawthorne	Removed Gradient coil mode entry on page 4.