



Refraction Technology

REF TEK Data Utilities

Release Notes: 4.0.0

Version 4.0.0

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This REF TEK manual provides release notes for each release of the REF TEK Data Utilities for the 130 DAS Family.

About this manual:

This REF TEK Data Utilities Release Notes manual provides a detailed list of changes in each release of the REF TEK Data Utilities.

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Revision History:

Revision	Date	Reason for change	Pages
0.1	03/14/08	Initial release	All
A	05/13/08	Update to new format	All

CF Card Replacement:

Due to the large variability of CF cards available on the world market and the resulting problems with compatibility due to memory layout, signal structuring and power requirements, Refraction Technology cannot guarantee a CF card will work in a REFTEK data recorder unless it is sold through REFTEK itself. REFTEK ensures compatibility through communications with CF manufacturers and rigorous in-house testing. Some CF manufacturers refuse to provide adequate information or factory controls to ensure that the product being sold today is the same as the product sold earlier under the same part number. CF cards not purchased from REFTEK may work at one temperature but not at another, or may fail all together.

Software Version:

Current software and documentation is available on our web site. Some early units may require hardware modifications to use the latest software. Contact REF TEK if you have any queries on the compatibility of your unit(s) and the current software release.

Firmware Update:**To update firmware from the FTP site**

1. Login to our FTP site at: <ftp.reftek.com/pub> as:
User name: Anonymous
Password: Your E-mail address
2. Find the 130 firmware at <ftp.reftek.com/pub/130/cpu/prom>.
3. Download the zip file of the most recently released firmware version.

Update firmware:

Updating firmware in a 130 DAS requires the presence of a firmware file on an installed Compact Flash device.

1. On power-up, the 130 checks the Compact Flash for the presence of 'main.s3' in the root directory.
2. If the 'main.s3' file is present on the Compact Flash, the 130:
 - a. Reads the file.
 - b. DELETES the file.
 - c. Re-programs the internal flash memory.

Note: DO NOT DISTURB THE UNIT DURING THIS PROCESS.

Follow these steps to update the firmware of a 130 DAS:

1. Unzip the 'main.s3' file from the downloaded zip file of the most recently released firmware.
2. Copy the desired firmware image to the root of the Compact Flash as 'main.s3' using a PC with a Compact Flash reader or ftp into the 130 DAS, with a Compact Flash installed, in binary mode.
3. With the Compact Flash with the main.s3 image installed in the 130 DAS, issue a reset command.

(a) If you are at the 130 DAS:

1. Issue a Reset command from a PDA running PFC_130 or Physically disconnect and reconnect power to the unit.
2. Observe the LCD for the following messages:

READING DISK DO NOT DISTURB

WRITING FLASH DO NOT DISTURB

3. The 130 DAS resets and returns to normal messaging.

(b) If you are remotely connected to a 130 DAS via telemetry mode:

1. If you are connecting remotely by a TCP connection:
 - a. **First connect**
 - b. **Discover the unit**
 - c. **Acquire status**
2. Issue a reset command from the Status screen.
3. Delete the unit from the Station List screen.
4. Wait at least 5 minutes.
5. At the Connections screen (reconnect id using a TCP connection) issue a Station Discovery again to discover the 130 DAS station.

Note: DO NOT DISTURB THE UNIT until the start-up LCD message reappears.

Notation Conventions

The following notation conventions are used throughout Ref Tek documentation:

Notation	Description
ASCII	Indicates the entry conforms to the American Standard Code for Information Interchange definition of character (text) information.
Binary	Indicates the entry is a raw, numeric value.
Hex	Indicates hexadecimal notation. This is used with both ASCII characters (0 – 9, A – F) and numeric values.
BCD	Indicates the entry is a numeric value where each four bits represents a decimal digit.
FPn	Indicates the entry is the ASCII representation of a floating-point number with n places following the decimal point.
<n>	Indicates a single 8-bit byte. When the contents are numeric, it indicates a hexadecimal numeric value; i.e. <84> represents hexadecimal 84 (132 decimal). When the contents are capital letters, it represents a named ASCII control character; i.e. <SP> represents a space character, <CR> represents a carriage return character and <LF> represents a line feed character.
MSB	Most Significant Byte of a multi-byte value.
MSbit	Most Significant Bit of a binary number.
LSB	Least Significant Byte of a multi-byte value.
LSbit	Least Significant Bit (bit 0) of a binary number.
YYYY	Year as a 4-digit number
DDD	Day of year
HH	Hour of day in 24-hour format
MM	Minutes of hour
SS	Seconds of minute
TTT	Thousandths of a second (milliseconds)
IIII	Unit ID number

n, nS	nano, nanoSecond; $10^{-9} = 0.000000001$
u, uS	micro, microSecond; $10^{-6} = 0.000001$
m, mS	milli, milliSecond; $10^{-3} = 0.001$
K, KHz	Kilo, KiloHertz; $10^3 = 1,000$
M, MHz	Mega, MegaHertz; $10^6 = 1,000,000$
G, GHz	Giga, GigaHertz; $10^9 = 1,000,000,000$
Kb, KB	Kilobit, KiloByte; $2^{10} = 1,024$
Mb, MB	Megabit, MegaByte; $2^{20} = 1,048,576$
Gb, GB	Gigabit, GigaByte; $2^{30} = 1,073,741,824$

Related Manuals:

130-01/3 System Documents	Number	PDF file
130-01 System Startup	Doc-130-Ops	130_startup_01.pdf
PFC_130 Users Guide	Doc-130-PFC	130_pfc.pdf
Data Utilities Users Guide	Doc-DataUtils	130_utilities.pdf
Archive Utilities	Doc-ArcUtil s	arcutil.pdf
130 Theory of Operations	Doc-130-Theory	130_theory. pdf
130 PFC Release Notes	Doc-130-PFCRel	130_PFCRN.pdf
130 CPU Release Notes	Doc-130-CPUrel	130_CPURN.pdf
130 Command Reference	Doc- 130-Cmd	130_command.pdf
130 Recording Format	Doc-130-Record	130_record.pdf
130-GPS Manual	Doc-GPS-Ops	130_gps. pdf
130-01 Board Documents	Number	PDF file
RT505 - A/D Board	Doc-130-RT505	RT505r.pdf ¹
RT506 - CPU Board	Doc-130-RT506	RT506r.pdf
RT520 - Lid Interconnect Board	Doc-130-RT520	RT520r.pdf
RT526 - MicroDrive/Flash Board	Doc-130-RT526	RT526rB01.pdf
RT527 - Sensor Control Board (Optional)	Doc-130-RT527	RT527rB01.pdf
RT535 - Mass Memory Board (Optional)	Doc-130-RT535	RT535rB01.pdf
Optional Manuals	Number	PDF file
SNDP Reference Guide	Doc-SNDP-Ref	SNDPRef.pdf
SNDP Installation and Users Guide	Doc-SNDP-	SNDPUser.pdf
RTPD Installation and Users Guide	Doc-RTPD	RTPD.pdf
RTP Protocol	Doc-RTP	RTP.pdf
RT_View Users Guide (Part of Data Utilities) ²	Doc-RTView	RTView.pdf
RTCC Command and Control Users	Doc-RTCC	RTCC.pdf
130 RTCC Release Notes*	Doc-RTCCRel	130_RTCCRN.pdf
RT_Display Users Guide*	Doc-RTDis	RTDisplay.pdf
RTPMonitor Installation and Users Guide	Doc-RTPMon	RTPM.pdf
131A-02/3 3G Triaxial Accelerometer	Doc-131A-02/3	131A023.pdf
131A-02/2 3G Biaxial Accelerometer	Doc-131A-02/2	131A022.pdf
131A-01/3 4G Triaxial Accelerometer	Doc-131A-01/3	131A013.pdf
131B-01/1 4G Unixial Accelerometer	Doc-131B-01/1	131B011.pdf

¹ R = Revision level of 130 Board

² * = Programs are included in the optional REF TEK Command and Control Interface (RTI)

REF TEK Support and update notifications

As a valued user of REF TEK equipment we would like to provide the best support possible by keeping you up to date with our product updates.

If you would like to be notified of any REF TEK product updates please spend a couple of minutes to register with the REF TEK customer support team.

To register, either send an email to updates@reftek.com giving us your name and REF TEK product you currently have or fill out our online registration form at www.reftek.com/registration

Once we register your contact we will only send necessary notifications via email. The same notifications will be shown on our website's www.reftek.com/support page

Thanks,

Your REF TEK support team



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1 PASSCAL Version 4.00 (22 January, 2007)

This section lists and describes the functional software modifications made to REF TEK Utilities version 3.51 to create version 4.00, as follows:

1. Conversions: Correction to Dual EH/ET
2. Conversions: Modifications for Cross-Platform Support
3. Conversions: Modification to Increase Allowed Open Files
4. RT_COS: Modifications to Azimuth

1. Conversions: Correction to Dual EH/ET

A correction was made to the logic used to detect complete events when dual EH/ET packets are present.

2. Conversions: Modifications for Cross-Platform Support

Modifications were made to support DOS, Windows32, Linux-Intel and Solaris-Sparc platforms.

3. Conversions: Modification to Increase Allowed Open Files

The number of files allowed open at one time was increased from 10 to 32. This improves program speed when handling a large number of traces simultaneously.

4. RT_COS: Modifications to Azimuth

Modifications were made to the handling of the Azimuth value. Previously, the azimuth was expected to be 1 – 360. Now, additional azimuth codes can be used.



2 PASSCAL Version 3.51 (04 Aug, 2006)

This section lists and describes the functional software modifications made to REFTEK Utilities version 3.50 to create version 3.51, as follows:

1. All: Correction to Version Report
2. RT_COS: Modifications to Output Directory Names

1. All: Correction to Version Report

The version reported by the programs was not properly updated. Each program reported version 3.42 instead of 3.50. With this release they report 3.51.

2. RT_COS: Modifications to Output Directory Names

Modifications were made to the naming of output subdirectories. Previously, the directory was named using the DAS Unit ID number stored in the data. Now, the Station Name will be used, when available. Previously, the Win32 version named directories differently than the DOS version. Now, both versions behave the same.



3 PASSCAL Version 3.50 (16 June, 2006)

This section lists and describes the functional software modifications made to REF TEK Utilities version 3.41 to create version 3.50, as follows:

1. Conversions: Modifications for Dual EH/ET
2. Conversions: Modification to Sensor Serial Number
3. RT_COS: Modifications to COSMOS Output
4. RT_COS: Addition of Result File

1. Conversions: Modifications for Dual EH/ET

Modifications were made to handle dual EH and dual ET packets for an event. The second EH/ET provides channel information for channels 17 – 32. The event information is the same as in the first EH/ET. The second EH/ET is distinguished from the first EH/ET by a bit-flag in the Flags field of the packet header. The second EH is recorded immediately after the first EH. The second ET is recorded immediately before the first ET.

2. Conversions: Modification to Sensor Serial Number

Modifications were made to handling the Sensor Serial Number. This is now handled strictly as a decimal number rather than a hexadecimal or text value.

3. RT_COS: Modifications to COSMOS Output

Various modifications were made to better conform the output of RT_COS to the COSMOS Volume 0 format.

4. RT_COS: Addition of Result File

A result file is now created at the completion of RT_COS. The filename matches the COSMOS output file name. The file extension is ERR if an error occurred or OK if no error occurred. The file contains a simple text message saying whether an error occurred. Specific errors are not listed.



4 PASSCAL Version 3.41 (24 February, 2006)

This section lists and describes the functional software modifications made to REFTEK Utilities version 3.30 to create version 3.41, as follows:

1. Conversions: Modifications for Consistent Command Line
2. Conversions: Modification to Support High Compression
3. RT_MSEED: New Program

1. Conversions: Modifications for Consistent Command Line

Significant modifications were made to make the command line switches uniform across all of the conversion programs. Each program may use different defaults for the available options.

2. Conversions: Modification to Support High Compression

Modifications were made to support the high compression recording mode of the REF TEK 130 DAS.

3. RT_MSEED: New Program

A new conversion program has been added to the Ref Tek Utilities. RT_MSEED converts data from REF TEK PASSCAL format to Mini-SEED format.



5 PASSCAL Version 3.30 (12 April, 2005)

This section lists and describes the functional software modifications made to REF TEK Utilities version 3.22A to create version 3.30, as follows:

1. Conversions: Correction to Reading RTU.INI
2. Conversions: Modification of Log File
3. RT_SEIS: Correction of Dates in Header
4. RT_SEIS: Modification of Component Descriptor
5. RT_COS: New Program

1. Conversions: Correction to Reading RTU.INI

A correction was made to ensure the conversion programs properly handle the end of file when reading the RTU.INI initialization file.

2. Conversions: Modification of Log File

The log file produced by the various conversion programs has been changed to output additional information stored in the EH/ET recording packets.

3. RT_SEIS: Correction of Dates in Header

Previously, the date stamp stored in the Seisan trace header was corrupted for dates containing 10; i.e. day 10 or month 10. This has been corrected.

4. RT_SEIS: Modification of Component Descriptor

The channel component descriptor stored in the Seisan trace header was changed to the following format: Sscx, where s represents the data stream number, c represents the channel number and x represents the axis of orientation. The component descriptor can be changed using the ChnSeisComp setting in the RTU.INI file.

5. RT_COS: New Program

A new conversion program has been added to the Ref Tek Utilities. RT_COS (Win32) and RT_COSD (DOS) convert data from Ref Tek PASSCAL format to COSMOS Volume 0 format.



6 PASSCAL Version 3.22A (14 January, 2003)

This section lists and describes the functional software modifications made to REF TEK Utilities version 3.21 to create version 3.22A, as follows:

1. RTCNVRT & RT_WGSN: Correction to SOH Only Output
2. Conversions: Modification to Unit ID
3. RT_PDB: New Program
4. RT_VIEW: New Program

1. RTCNVRT & RT_WGSN: Correction to SOH Only Output

A correction was made to eliminate a crash condition when only generating a State of Health log.

2. Conversions: Modification to Unit ID

A change was made to the handling of the Unit ID in recording packets to support the new hexadecimal Unit ID of the REF TEK 130.

3. RT_PDB: New Program

A new program has been added to the REF TEK Utilities. RT_PDB runs under DOS and Windows and converts between FSC parameter files and PFC parameter files.

4. RT_VIEW: New Program

A new program has been added to the REF TEK Utilities. RT_View runs under Windows and graphs data contained in a Ref Tek PASSCAL data file.



7 PASSCAL Version 3.21 (22 November, 2000)

This section lists and describes the functional software modifications made to REFTEK Utilities version 3.20 to create version 3.21, as follows:

1. RTCNVRT: Correction of Lockup Problem

1. RTCNVRT: Correction of Lockup Problem

RTCNVRT v3.20 was locking up under Windows. This has been corrected.



8 PASSCAL Version 3.20(24 October, 2000)

This section lists and describes the functional software modifications made to REF TEK Utilities version 3.10 to create version 3.20, as follows:

1. FSC: Serial Port Access
2. RTCNVRT: Change in Log Format
3. RTCNVRT: Change in Operating Environment
4. New Conversion Programs

1. FSC: Serial Port Access

FSC was modified to close and reopen the serial port at startup. This was added to work around a problem discovered under Windows ME. Prior to this change, FSC would lock up under Windows ME on the first access of the serial port unless the user first re-implemented the FSC port settings.

IMPORTANT: We recently experienced some situations where FSC would not run properly under Windows 9x on some machines while it ran fine on others. The problem was finally traced down to the FIFO settings for the serial ports under Windows. If you experience lock-up problems with FSC, check the following:

1. Check the file C:\WINDOWS\SYSTEM.INI. Look in the 386ENH section. If there is a line that says COM1Fifo=0 it should be commented out by placing a semicolon (;) at the beginning of the line. If there is a line that starts with COM1AutoAssign= either comment it out or change it to -1. This should be done for whichever port FSC will be using.
2. Check the Advanced Port settings in the Windows Device Manager for the Com port used by FSC. Make sure the FIFO settings are enabled. We recommend setting the receive FIFO to at least 3/4 of the range and setting the transmit FIFO to the maximum.
3. Check the Properties for the FSC DOS box. Under the Misc tab, set the Idle Sensitivity to the minimum. This ensures the screen updates correctly instead of only updating when a key is pressed or every 10 seconds or so.

2. RTCNVRT: Change in Log Format

The log file generated by RTCNVRT has been modified. The contents of packets have been indented to make it easier to distinguish the packet contents from the packet header lines. This change affects State-of-Health packets, Parameter packets, Event Header packets and Event Trailer packets.

3. RTCNVRT: Change in Operating Environment

RTCNVRT is now a 32-bit Windows console application and must be run under Windows.

4. New Conversion Programs

The following data conversion programs have been added to the Ref Tek Utilities:

Program	Platform	Description
RTCNVRTD.EXE	MS-DOS	Convert PASSCAL data to REFTEK ASCII trace files
RT_SEGY.EXE	Win32	Convert PASSCAL data to IRIS SEG-Y trace files
RT_SEGYD.EXE	MS-DOS	Convert PASSCAL data to IRIS SEG-Y trace files
RT_SEIS.EXE	Win32	Convert PASSCAL data to SEISAN format
RT_SEISD.EXE	MS-DOS	Convert PASSCAL data to SEISAN format
RT_WGSN.EXE	Win32	Convert PASSCAL data to WGSN trace files
RT_WGSND.EXE	MS-DOS	Convert PASSCAL data to WGSN trace files



9 PASSCAL Version 3.10(08 June, 2000)

This section lists and describes the functional software modifications made to REF TEK Utilities version 3.00 to create version 3.10, as follows:

1. FSC: Addition of SCSI Retry Control
2. RTCNVRT: Additional Log Information

1. FSC: Addition of SCSI Retry Control

FSC was modified to add control of the period in days for the periodic SCSI retry added to DAS v3.10 firmware. This field is located with the other SCSI parameters.

2. RTCNVRT: Additional Log Information

Several fields were added to the information stored by RTCNVRT in its log file. This includes the SCSI retry period and information specific to the Ref Tek 120.



10 PASSCAL Version 3.00(April 15, 1999)

This section lists and describes the functional software modifications made to REF TEK Utilities version 2.93 to create version 3.00, as follows:

1. RTCNVRT: Modification to update the sample count.
2. RTCNVRT: Modification to program parameters display.
3. RTCNVRT: Modification to window title.
4. RTPRMCVT: Addition of screen output.
5. ALL: Y2K Compliance

1. RTCNVRT: Modification to update the sample count.

RTCNVRT stores the sample count as the first value in the output data file. Previously, RTCNVRT stored the sample count requested by the user, even if fewer samples were actually available. Now, RTCNVRT updates the sample count to match the number of samples actually stored in the output file.

2. RTCNVRT: Modification to program parameters display.

Modifications were made in the way RTCNVRT displays its control settings. The display is more complete and better organized.

3. RTCNVRT: Modification to window title.

Previously, when RTCNVRT was executed in a DOS window under Microsoft Windows, it modified the window title in such a way that the title did not revert to its previous state after RTCNVRT ended. Now, the window title reverts to its previous state.

4. RTPRMCVT: Addition of screen output.

RTPRMCVT has been modified to optionally output the parameter information to the screen in a user-readable format instead of to a file. This output can be redirected into a file or to a printer.

5. All: Y2K Compliance.

All of the programs in the standard Ref Tek Utilities package were checked for Y2K compliance and modified as needed to ensure proper interpretation of dates as output by the 72A-series DAS units.



11 PASSCAL Version 2.93(July 31, 1998)

This section lists and describes the functional software modifications made to REF TEK Utilities version 2.90 to create version 2.93, as follows:

1. ALL: Change in method of opening files.
2. NCI: Correction to log file name corruption.

1. ALL: Change in method of opening files.

The method of opening disk files was changed to prevent access problems in a multi-tasking environment. Access collisions (a program opening a file that another program already has open) caused some PCs to lock up and caused others to terminate running programs. The change prevents a file from being opened by more than one program at a time. This change was implemented in all programs that perform file access, including: FSC, NCI, RTPRMCVT, RTCNVRT, CHKFMB, TAIL, STNINFO, SRREAD and SRSCRIPT.

2. NCI: Correction to log file name corruption.

Previous versions of NCI corrupted the log file name when a parameter set was loaded using the File menu. This prevented NCI from opening and appending to the log file. Under DOS, there was no other adverse effect. However, under other operating systems, this sometimes caused the PC to lock-up or caused communications with network DAS units to slow down. Changes were made to eliminate the corruption of the log file name and to display a message to the user whenever NCI is unable to open the log file.



12 PASSCAL Version 2.90 (December 9, 1997)

This section lists and describes the functional software modifications made to REF TEK Utilities version 2.86 to create version 2.90, as follows:

1. FSC: Addition of SCSI Configuration support.
2. FSC: Modification in detecting changed parameters.
3. NCI: Addition of SCSI Configuration support.
4. NCI: Correction to serial port control.
5. RTPRMCVT: Modification to support SCSI Configuration parameters.

1. FSC: Addition of SCSI Configuration support.

A SCSI Configuration command has been added to FSC. The SCSI configuration options are considered part of the DAS parameter set. The SCSI configuration options can be accessed from the Edit Menu and from the Data Menu.

When the SCSI configuration options are accessed from the Edit Menu, they are treated just like other DAS parameters. They can be modified and saved in a parameter set without being connected to a DAS.

When the SCSI configuration options are accessed through the Data Menu, a DAS must be connected. FSC queries the connected DAS for its current SCSI configuration information before displaying the options for editing. When the modifications are accepted (F10 is pressed), the new configuration is sent to the DAS. The DAS implements the new SCSI configuration as soon as the command is received, but after any current SCSI operation is complete.

2. FSC: Modification in detecting changed parameters.

Previously, FSC would assume the parameters had been changed if any of the parameter editing forms were entered. Now, FSC does not consider the parameters changed unless F10 (accept changes) is pressed while in a parameter editing form.

3. NCI: Addition of SCSI Configuration support.

NCI has been modified to accept FSC parameter files that contain the SCSI configuration options.

4. NCI: Correction of serial port control.

Previous versions of NCI left the PC serial port open when it should be closed. NCI incorrectly opened Com1 when Mailbox mode (port 0) was selected. NCI left ports open when it terminated. NCI left Com1 open when switching to Com2. The serial ports are now closed properly.

5. RTPRMCVT: Modification to support SCSI Configuration parameters.

RTPRMCVT has been modified to read and write parameter files that contain the SCSI configuration options. When converting older parameter files to the new format, the SCSI configuration options are set to their default values.



13 PASSCAL Version 2.86(October 1, 1997)

This section lists and describes the functional software modifications made to REF TEK Utilities version 2.84 to create version 2.86, as follows:

1. FSC: Close-aware.
2. FSC: DTR control.
3. NCI: Close-aware.
4. NCI: DTR control.
5. NCI: Unit ID output.
6. PCTIME: Hour adjustment across year boundary.
7. RTPARSE: Close-aware.
8. RTCNVRT: Close-aware.
9. RTCNVRT: makes global QCC file.
10. RTCNVRT: Verbose message control.
11. RTCNVRT: QCC Syntax modification.
12. RTCNVRT: REFTEK 120 support.
13. SRREAD: Close-aware.
14. SRREAD: Command line order.
15. SRREAD: Prompt control.

1. FSC: Close-aware.

FSC has been modified to be 'close-aware'. For a description of 'close-aware', see the explanation at the end of the notes in this section (page144).

2. FSC: DTR control.

FSC now asserts DTR when opening a port and de-assert DTR when closing a port. This has no affect on direct communications with a REF TEK 72A-series DAS or REF TEK 112. Some terminal devices require DTR before they will recognize data on the serial port. This change allows the output of FSC to be recognized by other terminal equipment, such as a dumb terminal.

3. NCI: Close-aware.

NCI has been modified to be 'close-aware'. For a description of 'close-aware', see the explanation at the end of these notes. (page144).

4. NCI: DTR control.

NCI now asserts DTR when opening a port and de-assert DTR when closing a port. This has no affect on direct communications with a REF TEK 72A-series DAS or REF TEK 112. Some terminal devices require DTR before they will recognize data on the serial port. This change allows the output of NCI to be recognized by other terminal equipment, such as a dumb terminal.

5. NCI: Unit ID output.

A bug was fixed which caused the unit ID field of commands issued by NCI to contain the wrong value. This only occurred with several specific non-zero unit ID values.

6. PCTIME: Hour adjustment across year boundary.

The adjustment of time using the hour offset from UTC was modified to properly handle year boundaries. Problems with previous versions would only be seen on December 31 or January 1, depending on the hour offset being used.

7. RTPARSE: Close-aware.

FSC has been modified to be 'close-aware'. For a description of 'close-aware', see the explanation at the end of these notes.

8. RTCNVRT: Close-aware.

RTCNVRT has been modified to be 'close-aware'. For a description of 'close-aware', see the explanation at the end of these notes.

9. RTCNVRT: Global QCC file.

RTCNVRT now creates a .QCC file containing QCC information for all units found in the input file. This is in addition to the QCC file that is created for each unit. All .QCC files are controllable with the /Q command line switch.

10. RTCNVRT: Verbose message control.

A command line switch has been added to RTCNVRT to control the messages it outputs. /V+ produces the same messages as previous versions of RTCNVRT. /V- reduces the messages to a display of the number of megabytes of data processed.

11. RTCNVRT: QCC Syntax modification.

The usage of the /Q command line switch has been modified. Previously, /QY turned on QCC file output and /QN turned it off. Now, /Q+ can be used in place of /QY and /Q- can be used in place of /QN.

12. RTCNVRT: REF TEK 120 support.

Modifications have been made to support fields in the EH, ET, NH and NT recording blocks that are specific to the REF TEK 120 Data Acquisition Unit (DAU) and Central Recording Unit (CRU).

13. SRREAD: Close-aware.

FSC has been modified to be 'close-aware'. For a description of 'close-aware', see the explanation at the end of these notes below.

14. SRREAD: Command line order.

A bug was fixed in SRREAD which caused it to always use the first entry on the command line as the output filename. Now, the output filename can occur anywhere on the command line.

15. SRREAD: Prompt control.

SRREAD displays its parameters and prompts the user to validate them before continuing. The /Y command line switch forces SRREAD to bypass the prompt and assume the settings are correct.

Close-aware

Note: DOS programs that are run under Windows 3.x or Windows 95 cannot normally be terminated using the Close button on the window bar or by a 'close' message issued by the operating system. DOS programs can be made 'close-aware' by adding some system calls that are benign under DOS but responsive under Windows. A DOS program that is 'close-aware' can be closed using the Close button on the window bar or by the 'close' message issued by the operating system IF they were started using a shortcut (Windows 95) or PIF file (Windows 3.1). They will NOT shut down if they are started from a command prompt or a batch file in a DOS box.



14 PASSCAL Version 2.84(October 7, 1996)

This section of this manual lists and describes the functional software modifications made to REF TEK Utilities version 2.83A to create version 2.84, as follows:

1. SRREAD and SRSCRIPT: Fixed a bug trying to flush the keyboard buffer.
2. SRSCRIPT: Fixed a bug in the handling of the port selection command line switch.
3. PCPWR: Modified to use serial ports and handle more RS232 signals.
4. TAIL: New program to output tail (end) portion of a file.
5. FSC and NCI: Fixed bug in printing parameter file to a printer.
6. PCTIME: Lock quality control.
7. RTCNVRT: Output of program parameters added.

1. SRREAD and SRSCRIPT: Fixed a bug handling the keyboard buffer.

A bug was fixed that sometimes caused the program to hang. While waiting for the transfer to start, the program detects when a key is pressed. Previously, if any key presses were found, the program would get stuck in an infinite loop.

2. SRSCRIPT: Fixed a bug in the handling of the port selection command line switch.

A bug was fixed which caused the /c command line switch to be case sensitive. Previously, it only worked when it was typed in lower case.

3. PCPWR: Modified to use serial ports and handle more RS232 signals.

This program was modified to use serial port instead of the parallel port signals. It also handles signals such as DCD, RI and DSR. In addition, the program now sets the DOS error level depending on the signal status and action (such as OFF, ON & STATUS) required.

4. TAIL: New program to output tail (end) portion of a file.

This program was written to output the end (tail) portion of a file. This is similar to the UNIX version of the tail program, but without the various switches. This program is useful to display the end of a large file. It can also be used to trim growing log files.

5. FSC and NCI: Fixed bug in printing parameter file to a printer.

These programs were modified to explicitly print carriage return characters to the printer when printing the parameter file.

6. PCTIME: Lock quality control.

A command line switch has been added to control whether the program observes or ignores the lock quality factor when setting the PC time. By default, the program ignores the lock quality. Using /L+ in the program invocation causes the program to set the time only when the external clock source indicates the clock is locked.

15 PASSCAL Version 2.83A (June 6, 1996)

This section of this manual lists and describes the functional software modifications made to REF TEK Utilities version 2.83 to create version 2.83A, as follows:

1. RTCNVRT:
2. FSC, NCI: Modified to handle UPS shutdown.

1. RTCNVRT:

Correction to Time Tag Error Calculations

2. FSC, NCI: Modified to handle UPS shutdown

Removed the keyboard flush function before exiting the program, as this would cause the program to miss the shutdown command keystrokes sent by the UPS software.

16 PASSCAL Version 2.83 (February 23, 1996)

This section of this manual lists and describes the functional software modifications made to REF TEK Utilities version 2.80A to create version 2.83, as follows:

1. RTPRMCVT: New Program to Convert Parameter Files
2. FSC: Correction to Sound Option
3. FSC: Corrections to DAS Configurations
4. FSC, NCI: Modification to PC Serial Port Delay
5. FSC, NCI: Modification to DAS Serial Port Control
6. FSC, NCI: Correction to Misspelled Message
7. RTCNVRT: Addition of /T Command Line Switch
8. RTCNVRT: Addition of Customer-Specific Information

1. RTPRMCVT: New program to convert parameter files

The RTPRMCVT (parameter convert) program reads existing FSC parameter files and outputs a new file that matches the format of the current version of FSC and NCI. A command line option is available to change the output format.

2. FSC: Correction to sound option

A bug was introduced in FSC v2.70 to the sound option of the FSC program. Whenever the FSC Configuration file was saved, the sound option was forced off. This has been corrected.

3. FSC: Corrections to DAS configurations

The DAS Configuration file used by FSC (FSC.DAS) has been modified to correct several errors reported by users. These corrections include:

Configuration Modification

020, 021, 022 and 023 Allow 32-bit data format

023 Correct the channel relays

060 and 061 Correct the gains

080 Change the configuration number for the following DASs to configuration 080: 0146, 0150, 0192, 0195, 0229, 0231, 0338, 0344, 0345, 0347, 0358, 0359, 0366, 0381, 0384, 0387, 0388, 0396, 0403, 0418, 0476, 0530, 0552 and 0554.

4. FSC, NCI: Modification to PC serial port delay

Setting the Delay field in the PC Serial Port Configuration to 0 milliseconds causes the PC to overrun the DAS serial port receive capabilities. Therefore, the option of setting the Delay field to 0 milliseconds has been removed. Delay options of 60, 70, 80 and 90 milliseconds have been added.

5. FSC, NCI: Modification to DAS serial port control

FSC and NCI no longer provide the option of configuring DAS serial port 0 (the NULL port) or 1 (the TERMINAL port), since the DAS does not allow these ports to be configured, anyway. In addition, the DAS Port Use fields now default to 0 (the NULL port) instead of to 1 (the TERMINAL port).

6. FSC, NCI: Correction to misspelled message

A word was misspelled in one of the messages common to FSC and NCI. This has been corrected.

7. RTCNVRT: Addition of /T command line switch

The /T command line switch has been added to RTCNVRT. It allows you to 'trash' (skip) a requested number of samples at the beginning of each event.

8. RTCNVRT: Addition of customer-specific information

Customer-specific information has been added to the end of a few of the PASSCAL recording blocks. RTCNVRT has been modified to identify this information.

17 PASSCAL Version 2.80A (October 25, 1995)

This section of this manual lists and describes the functional software modifications made to REF TEK Utilities version 2.80 to create version 2.80A, as follows:

1. RTCNVRT: Correction to Handling of Command Line Switches
2. PCTIME: Addition of Full Serial Port Support
3. NCI: Addition of Disk Load Commands
4. NCI: Modification of SCSI Load and SCSI Format Menus
5. NCI: Modification of Tape Backup Options
6. FSC, NCI: Addition of Parameter File Qualification

1. RTCNVRT: Correction to handling of command line switches

A bug was introduced in v2.80 when the behavior of RTCNVRT was changed. The bug caused some of the command line switches to be ignored. This has been corrected.

2. PCTIME: Addition of full serial port support

Previously, the PCTIME program allowed the selection of a COM port but only operated at 9600 bps, No parity, 8 data bits and 7 stop bits. Now, all of the serial port parameters are configurable including baud rate(bps), data bits, stop bits, and parity control.

3. NCI: Addition of disk load commands

Menu options were added to issue Disk Load commands to the REFTEK 44D firmware in the REFTEK 112A.

4. NCI: Modification of SCSI load and SCSI format menus

The SCSI Load and SCSI Format menus were modified so that disk 1 is selection 1, disk 2 is selection 2 and the tape drive is selection 3.

5. NCI: Modification of tape backup options

The tape backup options have been modified. The choices are: ON (data automatically backed up to tape), OFF-PRESERVE (no backup, overwrite NOT allowed) and OFF-OVERWRITE (no backup, disk overwrite enabled).

6. FSC, NCI: Addition of parameter file qualification

FSC and NCI will no longer load parameter files that are not in the current parameter file format.

18 PASSCAL Version 2.80 (September 21,1995)

This section of this manual lists and describes the functional software modifications made to REF TEK Utilities version 2.70 to create version 2.80, as follows:

1. ALL: Modification of Syntax Message
2. RTCNVRT: Modification of Time List Trigger in Output Log
3. RTCNVRT: Addition of System Time in Output Log
4. RTCNVRT: Modification of Default Behavior
5. NCI: Addition of Support for Time List Trigger

1. ALL: Modification of syntax message

All of the command line utility programs now generate a syntax message that provides basic usage information and default behavior.

2. RTCNVRT: Modification of time list trigger in output log

The Time List Trigger parameters are now properly parsed and labeled in the log file created by RTCNVRT.

3. RTCNVRT: Addition of system time in output log

The PC system time is now output at the top of the log file produced by RTCNVRT.

4. RTCNVRT: Modification of default behavior

Previously, RTCNVRT required multiple parameters on the command line invocation and prompted the user for missing parameters. Now, RTCNVRT defaults all of the parameters except the filename. If the filename is not supplied, RTCNVRT produces a syntax message and quits. The new default behavior of RTCNVRT is to only create LOG files, one for each DAS Unit ID it encounters in the input file.

5. NCI: Addition of support for time list trigger

NCI has been modified to properly handle the addition of the Time List Trigger parameters to the parameter files created by FSC.

19 PASSCAL Version 2.70 (June 7, 1995)

This section of this manual lists and describes the functional software modifications made to REF TEK Utilities version 2.60 to create version 2.70, as follows:

1. SRREAD: Modification of Syntax Message
2. SRSCRIPT: Addition of Timeout Switch
3. FSC: Addition of Time List Trigger Support
4. FSC: Modification of Configuration File
5. FSC: Addition of Parameter Restriction Logic
6. FSC: Modification to Keystroke Support
7. FSC: Addition of Forced Auto-Dump Option

1. SRREAD: Modification of syntax message

The syntax message in SRREAD has been modified so that it accurately reflects the program's default values.

2. SRSCRIPT: Addition of timeout switch

A new switch (/Tsecs) has been added which allows the user to vary the amount of time SRSCRIPT will wait for a command response before it terminates. The time is expressed in seconds with a maximum of 32767 seconds. The minimum timeout is three seconds, which is also the default.

3. FSC: Addition of time list trigger support

Support has been added for the new Time List trigger. This trigger is implemented in CPU v2.70 and later. The Time List trigger allows the entry of up to eleven unrelated trigger times for each stream.

4. FSC: Modification of configuration file

The contents of the FSC configuration file (FSC.CFG) have been modified. The field names have been changed from two-letter mnemonics to English words. Several new fields and comment lines have been added, as well. Refer to REFTEK's Operations Tasks Manual "Using FSC Software" for more information.

5. FSC: Addition of parameter restriction logic

FSC has been modified to restrict some parameter choices based on the Unit ID of the DAS for which the parameter set is being created. Information on the configuration of each DAS is located in the file FSC.DAS. This file is required for the restrictions to take effect. The file is readable ASCII text. If incorrect restrictions are encountered by the user, that user should notify Refraction Technology so that corrections can be made.

THE FSC.DAS FILE SHOULD NOT BE MODIFIED BY THE USER UNLESS INSTRUCTED TO DO SO BY REFTEK PERSONNEL. For more information, refer to REFTEK's Operations Tasks Manual "Using FSC Software".

6. FSC: Modification to keystroke support

FSC now responds to alternate keystrokes for the usual function (Fn) keys. In the Main Menu, the regular number keys can be used to select a menu. In addition, CTRL-E (hold down the CONTROL key and press E) can be used in place of the F10 key to confirm a response or save changes to the entries in a form.

7. FSC: Addition of forced auto-dump option

An option has been added to the DAS DATA menu which issues the appropriate commands to the DAS to force the DAS to do a destructive copy of RAM to the auto-dump device.