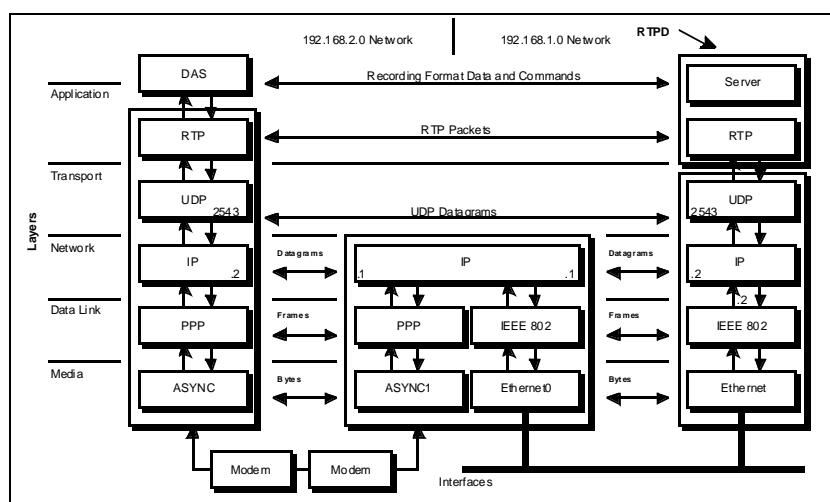


Archive Utilities

2.1.3 Release Notes

Rev 2.1.3

7/21/2008



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This REF TEK manual provides startup and basic operating procedures for the 130-SMA Accelerograph and its related products. Internal cable drawings are also provided along with guidelines for initial communication and installation.

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Revision History:

Revision	Date	Reason for change	Pages
0.1	03/14/08	Initial release	All
C	07/21/08	Update to new format	All
D	07/21/08	Added 2.1.3	

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-SMA System Documents	Number	PDF file
130-SMA Startup (Command Line)	Doc-SMA-Ops	130SMA_startup.pdf
Data Utilities Users Guide	Doc-Datautils	130_utilities.pdf
130-SMA Command Interface	Number	PDF file
130 Cmd Line - Theory of Operations	Doc-CmdL-Theory	130_CLtheory.pdf
130 Cmd Line - Release Notes	Doc-CmdL-Release	130_CLRN.pdf
130 Cmd Line - Reference	Doc-CmdL-Ref	130_CLcmd.pdf
130 Cmd Line - Recording Format	Doc-CmdL-Record	130_CLrecord.pdf
130-SM GUI Users Guide	Doc-130-SMGui	RT130SM.pdf
130-SMA Board Documents	Number	PDF file
RT608-B01 3 Channel 24-Bit A/D	Doc-130-RT608	RT608r.pdf
RT608-B02 6 Channel 24-Bit A/D	Doc-130-RT608	RT608r.pdf
RT506-B04 - CPU	Doc-130-RT506	RT506r.pdf
RT530 - B01 Lid Interconnect	Doc-130-RT530	RT530r.pdf
RT570 - B01 MicroDrive/Flash	Doc-130-RT570	RT570rB01.pdf
RT535 - Mass Memory Board	Doc-130-RT535	RT535rB01.pdf
Optional Manuals	Number	PDF file
SNDP Installation and Users Guide	SNDP-OP-003	SNDPUser.pdf
SNDP Reference Guide	SNDP-S-002	SNDPRef.pdf
RTCC Command / Control Users Guide	RTCC-S-006	RTCC.pdf
RT_Display Users Guide	RTD-S-007	RTDisplay.pdf
RT_View Users Guide	RTV-S-005	RTView.pdf
RTPMonitor Installation and Users Guide	RTPM-S-008	RTPM.pdf
RTPD Installation and Users Guide	RTPD-OP-005	RTPD.pdf
(part of RTPD manual) RTP Protocol		
Accelerometers		
131A-02/3 3G Triaxial Accelerometer	Doc-131A-03/2	131A023.pdf
131A-02/2 3G Triaxial Accelerometer	Doc-131A-02/2	131A022.pdf
131A-01/3 4G Triaxial Accelerometer	Doc-131B-01/3	131B013.pdf
131B-01/1 4G Unixial Accelerometer	Doc-131B-01/1	131B011.pdf

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 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 Version 2.1.3.0 (July 18,2008)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive utilities version 2.1.2.0 to create version 2.1.3.0, as follows:

1. Modification to Arcutils to properly filter units starting with hexadecimal digits
2. Modification to Archive Locking Logic

Please review all release notes between the version you are running and the version you wish to install.

WARNING: This version of the Archive Utilities is INCOMPATIBLE with Ref Tek data archives created prior to v2.1.0. You MUST run ARCREBUILD v2.1.0 or later on older archives before these utilities will run properly. Likewise, archives created and written to with Archive Utilities and RTPD v2.1.0 or later are INCOMPATIBLE with earlier versions. You must run the earlier version of ARCREBUILD before using an earlier version of these programs.

1.1 Modification to Arcutils to properly filter units starting with hexadecimal digits

It was noted that filtering of units with **arcinfo** utility did not properly work if the unit criteria started with a hexadecimal 'A'. A modification to the archive library was made to correct this. It affects all utilities which use the filtering criteria.

1.2 Modification to Archive Locking Logic

The archive is locked to prevent two processes from modifying the archive at the same time. Unfortunately, if the system crashed, the archive stays locked on power up. Special considerations were made to detect this situation. The locking algorithm sets the IP address and Process ID in the archive status file when it opened the archive for write. If another process tried to open the archive for write it would be denied, unless the process ID in the file was not currently running on the system, or it is the current processes ID. However, in the case of automatic restart of **RTPD** on power up, there is a high likelihood that another process, unrelated to the archive, may get the process ID that **RTPD** ran under before the system crashed. Therefore, it is also important to try and determine if the process which has the archive "locked" is a Reftek program which locks the archive.

Modifications were made to determine the name of the process if it is running, and not allow the current process to open it for write if the running process is **rtpd**, **arcwrite** or **arcbuild**.



2 Version 2.1.1 (Feb. 28, 2007)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive utilities version 2.1.0 to create version 2.1.1, as follows:

1. All: Modification to allow open of locked archive.

Please review all release notes between the version you are running and the version you wish to install.

WARNING: This version of the Archive Utilities is **INCOMPATIBLE** with Ref Tek data archives created prior to v2.1.0. You **MUST** run ARCREBUILD v2.1.0 or later on older archives before these utilities will run properly. Likewise, archives created and written to with Archive Utilities and RTPD v2.1.0 or later are **INCOMPATIBLE** with earlier versions. You must run the earlier version of ARCREBUILD before using an earlier version of these programs.

2.1 All: Modification to allow open of locked archive

Modifications were made the archive library which allows opening a locked archive if the process which locked the archive was started by this machine and is no longer running..



3 Version 2.0.0 (Oct. 6, 2005)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive utilities version 1.24 to create version 2.0.0, as follows:

1. All: Modification to Support Auxiliary Data Stream
2. All: Modification to Support 0.1 SPS Sample Rate
3. Arcfetch: Addition of Support for High Data Compression
4. Arcinfo: Modification to Channel Display
5. Arcrebuild: Modification to Handle Corrupted Status File

Note: Please review all release notes between the version you are running and the version you wish to install.

WARNING: This version of the Archive Utilities is **INCOMPATIBLE** with REF TEK data archives created prior to version 2.0.0. The user must run ARCHREBUILD version 2.0.0 or later on older archives before these utilities will run properly. Likewise, archives created and written to with Archive Utilities and RTPD version 2.0.0 or later are **INCOMPATIBLE** with earlier versions. The user must run the earlier version of ARCHREBUILD before using an earlier version of these programs.

3.1 All: Modification to Support Auxiliary Data Stream

Modifications were made to support the Auxiliary Data Stream (stream 9) of a REF TEK 130 DAS.

3.2 All: Modification to Support 0.1 SPS Sample Rate

Modifications were made to properly recognize and handle a 0.1 sps sample rate.

3.3 Arcrebuild: Modification to Handle Corrupted Status File

Modifications were made to proceed in rebuilding the archive status file when the existing file cannot be fully read.

3.4 Arcinfo: Modification to Channel Display

Modifications were made to display up to 16 active channels in the standard display.

3.5 Arcfetch: Addition of Support for High Data Compression

Support was added for the high data compression recording format of a REF TEK 130 DAS.



4 Version 1.24 (Dec. 16, 2004)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive utilities version 1.22 to create version 1.24, as follows:

1. Arcinfo: Correction to Detail Display
2. Arccopy and Arcwrite: Correction to Archive Purge
3. Arcinfo: Modification to Standard Display
4. Arcrebuild: Modification to Use Existing Parameters
5. Arcrebuild: Modification to Correct File Names
6. Arcrebuild: Modification to Update Sample Rate

Note: Please review all release notes between the version you are running and the version you wish to install.

4.1 Arcinfo: Correction to Detail Display

A correction was made to eliminate extra messages in the detail display.

4.2 Arccopy and Arcwrite: Correction to Archive Purge

Corrections were made in the purge functions of the archive library to prevent over-purging when the program starts and to eliminate misreporting of file sizes.

4.3 Arcinfo: Modification to Standard Display

Modifications were made to align the size and sample rate information in the standard display.

4.4 Arcrebuild: Modification to Use Existing Parameters

Modifications were made to use the archive parameters in the existing archive.sta file, unless overridden by command line parameters.

4.5 Arcrebuild: Modification to Correct File Names

Modifications were made to rename files in the archive that indicate incomplete events.

4.6 Arcrebuild: Modification to Update Sample Rate

Modifications were made to update the last known sample rate of each data stream.



5 Version 1.22 (Oct. 8, 2004)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive utilities version 1.21 to create version 1.22, as follows:

1. Arccopy and Archwrite: Correction to Handling of Lone ET packet .

Please review all release notes between the version you are running and the version you wish to install.

5.1 Arccopy and Archwrite: Correction to Handling of Lone ET packet

Previously, the file name for an event was only constructed when an EH or DT packet was processed. Therefore, if a ET packet arrived with no previous EH or ET packets, no filename would exist for the event, an error would occur upon opening the file, and the utility would abort. A correction was made to ensure that the filename is constructed on an ET packet if the name does not exist. Therefore, the utility will not be abort if it recieves a lone ET packet and will continue to process the remaining packets.



6 Version 1.21 (Aug 12, 2004)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive utilities version 1.19 to create version 1.21, as follows:

1. Arcfetch : wild cards
2. Arcfetch: precise alignment
3. Arcfetch: switch options use + or -
4. Arcfetch: switch defaults changed
5. Arcfetch: skip over bad data for multi units
6. Arcinfo: wild cards
7. Arcinfo: switch options use + or -

Please review all release notes between the version you are running and the version you wish to install.

6.1 Arcfetch: wild cards

Cooked mode required the unit and stream to be specified. A wild card can now be used for the unit and stream in the criteria string for cooked mode. An '*' can be used to select all units or select all streams.

6.2 Arcfetch: precise alignment

Cooked mode initially gets the data packets which encompass the time specified by the start and stop time in the criteria string. Precise alignment in cooked mode is available with the -p switch. Specifying a -p+ will cause the first and last data packets to be reformatted to include only samples within the time period specified by the criteria. A -p- turns precise alignment off, so that the entire packet is maintained.

6.3 Arcfetch: switch options use + or -

The -c, -cn, and -p switches require a '+' or '-' to turn the switch on or off. This allows defaults for switches to be on, and still allow the user to turn the switch off.

6.4 Arcfetch: switch defaults changed

The default switches cooked mode and precise alignment is on. If the user does not want these switches on, a '-c-' and '-p-' must be used to turn them off.

6.5 Arcfetch: skip over bad data for multi units

Version 1.20 of **arcfetch** would abort if it had any problems reading one units data when retrieving data from multiple units. Version 1.21 will skip over this unit and continue retrieving data for the remaining units.

6.6 Arcinfo: wild cards

Arcinfo now allows wild cards to be used for the unit and stream criteria. An '*' can be used to select all units or select all streams.

6.7 Arcinfo: switch options use + or -

The -D switch requires a '+' or '-' to turn the switch on or off. This was done for consistency with the **arcfetch** utility.



7 Version 1.19 (May 23, 2003)

This section of this manual lists and describes the functional modifications made to the REF TEK Archive Utilities software version 1.18 to create version 1.19, as follows:

1. Correction to RTP Library

Please review all release notes between the software version you are running and the version you wish to install.

7.1 Correction to RTP Library

Corrections were made to several functions in the RTP library used in building the various programs. All of the archive utilities were rebuilt whether they made use of these functions or not.