REALITY Check ✓©

IMPLEMENTATION ADVISORY

and

OPERATION

MANUAL

for

REALITY® 7.X

Document No. IA20069029 Rev C

Proprietary Information

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I. UNPACKING

Carefully open the box containing the REALITY Check ✓ components and inspect the contents for any signs of visual damage.

Verify that the following items are present:

- REALITY Check ✓ Program Tape (PM20069029-XXX)
- 24-byte Software Key
- Galaxy Pioneer V.22 Modem (GN-8912-P0403)
- Modem to System Cable - 25 ft. (A20032289-002)
- UPS to System Cable - 25 ft. (A20032289-002)
- Two REALITY Check ✓ Quick Reference Cards
- REALITY Check ✓ Implementation Advisory (IA20069029)

II. HARDWARE SETUP

REALITY Check ✓ requires one serial port for the modem and one for the UPS interface (if used). It also requires one TIPH process, and a phone line for the modem.

A. Select a suitable location for the modem. If the system is being powered by a UPS, it is recommended that the modem also obtain its power from the UPS.

B. Connect the Modem to System cable between the DB-25 connector on the modem and the DB-9 connector on the system or Node. Make a note of the port number to which the cable is connected. (If you are uncertain as to the port number, first connect a terminal to that port and enter "WHO" at TCL.)

C. Plug the modem power module into a 110 VAC receptacle. Remember to use the UPS if possible. Insert the power plug into the receptacle on the back of the modem.

D. Connect the RJ-11 phone cable between either of the connectors on the rear of the modem and the dedicated phone line.

E. If the UPS option is being used, connect the UPS to System cable between the DB-25 connector on the back of the UPS and the DB-9 connector on the system or Node. Make a note of the port number to which the UPS cable is connected. Refer to Appendix A for a listing of the UPS models supported by REALITY Check ✓.

Hardware setup is now complete.

III. REALITY Check ✓ SOFTWARE INSTALLATION

A. For installation on systems running REALITY 7.0 or above, observe the following procedures.

1. Take the REALITY Check ✓ Program Tape and load it on the tape unit of your choice. Set tape density on the tape drive to 1600 bpi.

2. Logon to SYSMAN and at TCL enter "INSTALL".

3. Enter the Unit Number of the tape drive selected in Step 1.

4. Enter the 24-byte Software Key at the prompt. If the key is entered correctly, the system will begin loading the REALCHECK Account. When it is finished, it will exit to TCL. The system will respond with "Software Not Enabled" if the key is not correct . If this occurs, rewind the tape and try again, paying close attention when entering the software key. If the failure persists, call for support.

5. At TCL enter "T-LOAD USERS".

6. At TCL, enter "SSM" to set the port characteristics for the Modem and UPS ports. This starts the Security Maintenance program and will display four choices on the screen.

    1. Network File Maintenance
    2. User File Maintenance
    3. Security File Maintenance
    4. Ports File Maintenance

    Note: REALITY 7.2 will display eight choices, however the first four will be the same as above.

7. Select option 4 (Ports File Maintenance). This program will then ask for a port number to setup. Enter the port number for the Modem Process selected in step II, B above, ensuring that this port is not currently logged on, and the program will display the following screen:

PORTS FILE MAINTENANCE

Port 52 (x'34'), IOP=E8, Controller=01, Channel=6A

0	Location	:
1	Baud Setting	:9600
2	Parity	:DISABLED
3	Data Bits	:8
4	Stop Bits	:1
5	CTS / RTS	:NO
6	XON / XOFF	:NO
7	Cycle DTR	:~~0~~ 2
8	Throughput	:200 / 2000
9	Dial - in - code	:2

Configure the modem port as above, then enter "FI" to file. At the system response "Do you want to execute 'SET-PORT' verb" enter "Y".

8. Set up the port characteristics for the UPS using the same procedure as for the modem, substituting the values from the table below:

0	Location	:
1	Baud Setting	:2400 (*)
2	Parity	:DISABLED
3	Data Bits	:8
4	Stop Bits	:1
5	CTS / RTS	:NO
6	XON / XOFF	:YES
7	Cycle DTR	:0
8	Throughput	:200 / 2000
9	Dial - in - code	:2

* Set UPS baud rate to match the 2400 bps setting.

9. In order for the Modem and UPS Processes to function properly, the Logon Message must be disabled. To do this, select option "1" (Network File Maintenance) from the SSM program menu. The program will then ask for a File Key. The File Key will be PLAN-XXXXXX-PORT, where XXXXXX = the Serial Number of the system and PORT is the port number of the UPS or modem.

   For example, PLAN-010073-0052 would select port 52 on system serial number 10073. The program will then display the following:

NETWORK FILE MAINTENANCE

FILE KEY >PLAN-010073-0052

0	Location Description	:REALITYCheck Modem Port
1	CCI	:
2	Logon Timeout	:90
3	Logon Retries	:0
4	Log Failed Attempts	:NO
5	Hushed Logon	:YES
6	Immediate Disconnect	:YES
7	Passworded User Logon	:YES
8	Terminal Type	:4
9	Inactivity Timeout	:0
10	Receipt of Messages	:NO
11	Messages on Line 25	:NO
12	Field Read	:0
13	Type Ahead	:YES

10. Using the values in the table above as a guide, set the Network characteristics for both the UPS and the Modem Processes.

11. Next, the REALCHECK Account must be given a security ID (password). The security ID is needed by the TIPH, Modem and UPS logon programs. To give the REALCHECK Account a password, type "PASSWORD" from the TCL prompt in the SYSMAN Account.

    The PASSWORD program will prompt for a User ID. Enter REALCHECK as the User ID. The program will then ask for a new password. Enter the password that you want to use for the REALCHECK Account. The program will then ask you to enter the password a second time for verification. After entering the password the second time, the program will return to TCL.

12. Verify that a TIPH process is available for REALITY Check ✓. To do this enter "PH-LINES" at TCL. The system will display the number of TIPH processes available. If none are available, the "PH-ALLOCATE" verb must be run. Refer to the REALITY system documentation for details on the PH-ALLOCATE verb.

13. One of the features of REALITY Check ✓ is that it can track file-save activity and identify problems that occur during a file-save. To enable file-save monitoring, logon to the SYSPROG Account, and perform the following steps:

    :ED SYSPROG-PL FILE-SAVE <return>
    .Top
    L/SAVE SYSTEM/ <return>
    U1 <return>
    I <return>
    HRUN SYSPROG-PL MARK.START <return>
    P <return>
    <return>
    L/LIST-$STAT-FILE/ <return>
    I <return>
    HRUN SYSPROG-PL MARK.END <return>
    P <return>
    <return>
    L/FILE SAVE TERMINATED/ <return>
    I <return>
    HRUN SYSPROG-PL MARK.FAIL <return>
    P <return>
    <return>
    FI <return>

* NOTE: It is recommended that the FILE-SAVE command only be executed from the SYSPROG Account and, ideally, only from port O. If there is more than one FILE-SAVE proc on the system, they will all need to be modified for file-save monitoring to be effective.

IV. REALITY Check ✓ Initialization

A. Log off of the SYSPROG Account and log on to the REALCHECK Account. When logging on to REALCHECK for the first time after initial program installation, the "Setup Basic Program Parameters" menu will automatically be displayed (as below). (Normally, this menu is accessed through Option 1 of the Utilities Menu.)

Setup Basic Parameters

-->	Site Name	ABC Computer Company
	Site Address	123 Elm St., Orlando, FL.
	System ID	10734
	Error Messages to...	SYSPROG, SYSMAN, REALCHECK,0,1
	Modem Port (Pager)	67
	Person to Page	System Operator
	Pager # to Dial	9,593 1253
	Message Delay (Secs.)	10 (Refer to Section X. A.)
*	Pager Code	10734
	Call Home (Days)	30 (Refer to Section IX.)
	Call Home for GFE's	Y
	File-Save Fail Page	Y
	UPS Port #	64
	Power Fail Shutdown	Y
	Power Fail Log Off	Y
	Shutdown Delay (Secs)	30
	Update Screen Every	1 Mins
	RealCHECK Password	******

U=Up D=Down C=Change X=Exit S=Save Changes
Enter Customer Name Here

* Note: For use with Skypagers, use the following syntax for this line:

PIN NNN NNNN DELAY SS XXXXX...

Where NNN NNNN is the PIN number; SS is the secondary delay in seconds (default is 5 seconds); and XXXXX... is the numeric message to be sent to the pager.

B. The Setup Basic Program Parameters menu is used to enter information used by REALITY Check ✓ to start the UPS, Modem and TIPH processes. Information in the setup file is also used for operator paging and call-home functions. Follow the prompt at the bottom of the screen for each of the parameters required. All the information fields on the screen should be filled in. It is especially important that the password for the REALCHECK Account, the System ID and the Pager phone be entered into the setup menu. The password is required to successfully start the TIPH, Modem and UPS processes, and the pager number is required to page the system operator when REALITY Check ✓ detects an error in the system.

NOTE: REALITY Check ✓ was designed to be terminal independent. This means that most any ASCII terminal or PC can be used to view the various REALITY Check ✓ screens. In order to make this possible, it was necessary to use standard ASCII characters for cursor positioning. Therefore, the "U" key is used to move the cursor up and "D" for down. "C" is used to change a data field and "S" is used to save the changes when finished. The only feature which may not work on all terminals or PC's (in terminal emulation mode), is messaging on line 25.

Follow the help messages at the bottom of the screen for each parameter. Be sure to save the changes when finished.

C. After saving the Basic Program Parameters, you will be prompted to enter your employee number. This is a security feature to tract changes made to the System Failure Parameters. After entering your employee number, the "Setup System Failure Parameters" menu will be displayed. A sample of that screen follows:

Note: If the program pauses for any length of time at this point it is most likely because there are many entries (items) in the SYSTEM-LOG and it may take a short while to sort them all. If this is the case then refer to Section VI before proceeding.

Setup System Failure Parameters

Current Event Counts			Event Level Thresholds	
Tape Errors	82	-->	Tape Errors	100
Disk Errors	7		Disk Errors	10
Mem Errors	0		Mem Errors	1
Group Format Errors	2		Group Format Errors	1
P-LAN Events	0		P-LAN Events	100
S-LAN Events	0		S-LAN Events	100
IOP Events	4		IOP Events	10
SM Events	8		SM Events	10
OVF Events	0		OVF Events	10000
TL Events	0		TL Events	10
TL Full (Percent)	0		TL Full (Percent)	80
Last File-Save	?			
Last AF Restore	21 MAR 1993			
File-Save Events	0			
Stopped Processes	0		Stopped Processes	10
OVF Frames Left	16740		OVF Frames Left	10000

* Indicates Over Limit

U=Up D=Down C=Change X=Exit S=Save Changes
Enter Number of Tape Errors at which notification will occur

The display on the left side of the screen indicates the quantity and type of events currently contained in the SYSTEM-LOG. The display on the right side of the screen contains the thresholds which, when met or exceeded, will cause the System Administrator to be paged.

Using the cursor positioning keys, set the threshold for each parameter to the desired value. Refer to Section VI, for guidance in setting thresholds.

V. STARTING REALITY Check ✓

A. After saving the threshold values (and each time REALITY Check ✓ is logged on), the Main screen shown below will be displayed.

DD MMM YYYY REALITYCheck System Monitor (Rev #) Time HH:MM

-- System Status ----		-- UPS Status --	
82	Tape Errors	Alarms Present	
7	Disk Errors	Input Voltage	Volts
0	Mem Errors	Input Current	Amps
2	Group Format Errors	Output Voltage	Volts
0	P-LAN Events	Output Current	Amps
0	S-LAN Events	Battery Voltage	Volts
4	IOP Events	Battery Current	Amps
8	SM Events	Battery Capacity	%
0	OVF Events	Input Frequency	Hz
0	TL Events	Output Frequency	Hz
Not Installed	TL Full (Percent)	# of Power Failures	0
?	Last File-Save		
21 Mar 1993	Last AF Restore		
0	File-Save Events, 0 GFE's		
0	Stopped Processes		
16740	OVF Frames Left	-- Supporting Processes --	
		TIPH Process	Not Logged On
		Modem Process	Not Logged On
C - Clear Message Line		UPS Process	Not Logged On
U - Utilities Menu		Expire Date	3 SEP 1994
Enter Selection (or OFF to Log off)		Active Incidents	0

B. Information from REALITY Check ✓ is grouped into three areas. At the upper left, system information, such as disk errors and stopped processes is shown. At the upper right half of the screen, information from the UPS is shown. The lower right corner provides information about the REALITY Check ✓ programs. The sample display above is how the main screen might look just after REALITY Check ✓ has been installed.

C. Notice the lower right portion of the display indicates that none of the REALITY Check ✓ processes have been started. To begin monitoring of the system, enter "U", <return> from the main display.

D. Initiating UPS Options. If the system is powered by a UPS with a REALITY Check ✓ compatible interface and you wish to use the UPS monitoring feature of REALITY Check ✓, enter "U" to display the UPS Utilities Menu (see example below). Refer to Appendix A for a list of compatible UPS models.

UPS Utilities

1- Logon UPS
2 - Log off UPS
3 - Get Power Line Readings from UPS
4 - Wake up UPS after aPower Fail / Shutdown

Enter Selection (or X to Exit)

1. Enter Option 1 (Logon UPS). You will be asked to confirm the UPS log on to the port number specified in the initial setup. The UPS process will log on and automatically update the ACC file.

E. To log on the Modem process, select option "M" from the Utilities Menu. Next, enter option 1 (Logon Modem). You will be asked to confirm the Modem Logon to the port number specified in the initial setup. The Modem process will log on and automatically update the ACC file.

F. To initiate the TIPH process, select option "T" from the Utilities Menu. To start the TIPH process, enter option 1 (Logon TIPH). Select the TIPH port you desire from the list provided and enter it where specified. (Refer to Section X. E. on Troubleshooting for assistance.)

All REALITY Check ✓ processes should now be operational. Depress the Return Key to view the Main REALITY Check ✓ display screen and verify that the processes logged on are shown in the lower right portion of the screen in the "Idle" state.

VI. Setting System Error and Event Thresholds

This section will serve as a guide to setting system error and event thresholds. REALITY 7.X monitors and records many different types of errors and system events. These are recorded and contained in a system level file called "SYSTEM-LOG" and are presented on the left side of the REALITY Check ✓ System Monitor displayed as System Status (see page 8).

It is important to recognize the distinction between system "Errors" and "Events" and the appropriate treatment of each. Errors indicate a non-standard and undesired result of some system function that may require operator attention. A system event is a recorded system function that should be noted, but typically requires no direct operator interaction or corrective action.

The SYSTEM-LOG is automatically updated by REALITY 7.X, but frequently not analyzed or purged by the system operators. The result is a SYSTEM-LOG file that can grow to thousands of entries wasting disk space and adding needlessly to system overhead. In order for the system and REALITY Check ✓ to operate efficiently the SYSTEM-LOG file should be kept to a maximum of 200 items. As an example of how to purge the SYSTEM-LOG file, the following is a sample of how to delete the S-LAN events:

```
: SELECT SYSTEM-LOG = 'SLN]'
402 Items Selected
>DELETE SYSTEM-LOG
```

This operation can also be incorporated into a PROC or DATA/BASIC program.

A. Setting System Error Thresholds

REALITY Check ✓ monitors the following types of system errors:

Disk
Tape
Group Format
Memory

1. **Disk Errors:** Disk errors are not uncommon, but if closely monitored, they can be kept to infrequent occurrences. This is accomplished by having your Novadyne Field Engineer use the S. O. M. E. (on-line) diagnostics to correct disk errors as they occur. Having a dial-in modem on your system will make this process much simpler for both you and the Engineer. (Note: Use of these diagnostics should not be attempted by customer personnel and the REALTIY Check ✓ modem cannot be used for this purpose.)

   After this process has been accomplished, continued errors on a specific drive may be a sign of an impending drive failure. Frequent monitoring of the disk error count will give this type of advance warning and allow for the scheduled replacement of a failing drive rather then a system crash due to the same drive.

   At installation it is recommended that the REALITY Check ✓ Utility Menu Option "6", Sub-option "3" (Group Disk Errors) be run. This groups disk errors by drive and address, making it very clear when a spot on a drive is going bad. Evaluate the errors displayed and contact your Field Engineer to correct any that are recurring at the same address. All errors that relate to a sector that has been reassigned by the Engineer, or that are more that 90 days old should been deleted from the log.

   Once the above steps have been completed, access the REALITY Check ✓ Utility Menu option "T," sub-option "3" to scan the system. This will provide a current count of the SYSTEM-LOG. Return to the Main REALITY Check ✓ System Monitor display and again select the Utility Menu option 2 to update the Disk Error Threshold.

   The recommended threshold for disk errors is two (2) plus the current disk error count. REALITY Check ✓ will automatically open a service call if four or more disk errors are logged in any 24 hour period.

2. **Tape Errors:** Tape errors indicate that something abnormal occurred in the process of reading from or writing to a tape drive. These are normally recoverable and do not result in severe system degradation.

   Although usually not fatal to system operation, tape errors should be noted. They can be an indication of bad tape media, dirty read/write heads or the need for general servicing. Careful monitoring of tape errors can avoid non-scheduled service calls.

   A Tape Error Threshold Setting of 50 is recommended. By reviewing a listing of tape errors (Utility option "6"), the source of the errors can be identified by tape operation type and time of occurrence. This will reveal the type of tape operation responsible for the errors (e. g.; File Save, Transaction Logging, etc.). Also, installations with more than one tape drive can identify which drive needs more frequent cleaning.

3. **Group Format Errors (GFE's):** GFE's occur when the system detects data corruption. These are serious and the threshold should be set to one more than the current count in the SYSTEM-LOG. Once a GFE is corrected within the data the error should be immediately removed from the SYSTEM-LOG.

   REALITY 7.0 detects GFE's in two ways. Any process (except File-Save) that encounters a GFE will result in that GFE being recorded in the SYSTEM-LOG. The File-Save does not record GFE's in the SYSTEM-LOG. However, when the File-Save is completed, REALITYCheck✓ scans the Stat-File and retains a record of any GFE's encountered. When using the System Failure Parameters screen (option 2 from Utilities Menu) the Current Count will display the total number of GFE's found in the SYSTEM-LOG and the Stat-File.

   REALITY Check ✓ allows the system administrator the option of automatically calling Novadyne Central Dispatch whenever a GFE occurs or notifying only the system operator. Utility Menu Option "1" is used to set the automatic call option. To have a software incident opened whenever a GFE is detected, enter "Y" in the "Call Home for GFE's" field. Enter "N" to disable this Call Home feature.

4. **Memory Errors:** Memory errors are always critical and should be addressed at once. The Memory Error Threshold should always be set to no more than one (1) with all prior errors deleted. REALITY Check ✓ will automatically open a service call with Novadyne's Dispatch Center when a memory error is detected.

B. Setting System Event Thresholds

The operating system keeps track of various system events in addition to system errors. System events are normally not an indication of a pending failure, but should be reviewed regularly. One example of a possible event that may need investigation is P-LAN events. They may indicate that the P-LAN cabling or hradware are defective. As a rule of thumb certain system components that are functioning well, may occasionally have a fault event. The system events that need to be watched in this manner are P-LAN, S-LAN and Session Manager (SM). The number of fault events for these components will vary with activity level. The number of acceptable S-LAN faults can be in the hundreds over the course of a day on a busy LAN.

It is recommended that these Event Thresholds be set at 100 initially and adjusted up or down based on system activity. An event level that continues to rise on a regular basis can be an indication of a problem on the LAN, in the peripheral cabling or elsewhere in the system.

C. Setting Other System Event Thresholds

REALITY Check ✓ monitors several other conditions not associated with the SYSTEM-LOG file.

1. **Stopped Processes:** There are three conditions under which REALITY Check ✓ will log a Stopped Process. Any process that is stopped in the:

   - DATA/BASIC Debugger
   - ASSEMBLER Debugger
   - Condition of an unknown PIB Status.

   The Stopped Process Threshold should initially be set to 3 in production mode and 10 if programmers or other users with access to the debuggers are active on the system. These settings can be reset at any time to better reflect actual system utilization.

2. **Overflow (OVF) Frames Left:** The threshold for remaining overflow frames of disk will depend on the configuration of the disk subsystem. It is recommended that the OVF Threshold never be set less than ten percent (10%) of the total number of disk frames installed. When the remaining disk space is less than ten percent (10%) of the total, it is strongly advised that the disk subsystem be reorganized and data be purged to an archive tape file. Adding disk drives must also be considered at this time.

VII. Interpreting Pager Messages

When REALITY Check ✓ pages the system operator, a message is sent that describes the type of event found by REALITY Check ✓. Since most pagers are unable to receive alpha characters, the message sent to the pager is a numeric string that represents the condition detected. The Error message has the following format:

Pager Code, (Event code), (Event count)

where; Pager Code is the message entered by the operator into the setup screen (1),
Event code is a 2 digit code that represents the event (refer to REALITY Check ✓ Quick Reference Card or below), and
Event count is the number of events logged.

Event Code	Meaning
01	Tape Errors Exceeded Threshold
02	Disk Errors Exceeded Threshold
03	Memory Errors Exceeded Threshold
04	Group Format Errors Exceeded Threshold
05	P-LAN Events Exceeded Threshold
06	S-LAN Events Exceeded Threshold
07	IOP Events Exceeded Threshold
08	SM Events Exceeded Threshold
09	OVF Events Exceeded Threshold
10	TL Events Exceeded Threshold
11	Transaction Log Tape Full
12	FILE-SAVE Failed
13	Reserved
14	Reserved
15	# of Stopped Processes Exceeded Threshold
16	# of OVF Frames is Below Threshold
17	Session Manager Aborted
18	Session Manager Logged Off
19	Session Manager Hung
20	UPS error (Cable no longer connected to UPS)
30	UPS Error Found (But not a power fail error)
911	UPS Error Power Fail (System Shutdown!)

For example, the sample setup menu in Section IV. A. shows a pager code of 10734, and the error level threshold for Memory errors is set to 1. If one memory error occurred on the system, then the pager message would be 1073400301 indicating error type 3 (memory error) and a count of 1. Note that the pager message, error code and error count are separated by zeroes. This is because most pagers are unable to receive space characters.

VIII. REALITY Check ✓ Menu Options

A. Main Menu Options

There are four options available from the Main REALITY Check ✓ display screen. They are:

Go to the Utility Options Menu
Clear the message line
Log off
Exit to TCL

1. Accessing the Utility Menu is accomplished by entering "U" (Utility). This will display the Utility Menu at which time you may select any of the Utility Menu options.

2. The message line (line 25) can be cleared by using the "C" (Clear) option.

3. To log off, enter "OFF"". This will cause the display screen to log off, however, REALITY Check ✓ will continue to function normally. The TIPH, Modem and UPS processes all perform their respective functions independently of the Main display.

4. It is possible to exit to TCL by entering the REALCHECK Account password at the options prompt. To reactivate the Main display screen from TCL, simple enter "R" from TCL.

B. Miscellaneous Utility Options

There are several options available in the Miscellaneous Utilities Menu. The Utilities menu is shown below followed by a brief description of each menu function.

1. Setup Basic Program Parameters
2. Setup System Failure Parameters
3. Install REALCHECK Update tape
4. Enter a new Software Key
5. Display Trace Files (For Debugging)
6. Display System Status Events
7. Display Stopped Processes
8. Display File-Save Events
9. Display TL-STATUS
10. List Users (LISTU)
11. List Active Processes
12. Display Session Manager Status
13. Display Incident Activity

Option 1 - Setup Basic Program Parameters:
This option was covered in sufficient detail in Section IV. A.

Option 2 - Setup System Failure Parameters:

The System Failure setup screen is used to set the event thresholds that will determine when REALITY Check ✓ will page the system operator. The setup screen is divided into two halves: the left half shows the current event count for each event tracked by REALITY Check ✓, the right half of the screen shows the event level thresholds. When REALITY Check ✓ is installed for the first time on a system, the event thresholds on the right side will be set to default values. The operator can set the event thresholds to any desired level, but it is recommended that the guidelines discussed in section VI be observed.

Option 3 - Install REALITY Check ✓ Update Tape:
From time to time, Novadyne may release update tapes for REALITY Check ✓ . This option will be used to load the update tape onto the system. To install a REALITY Check ✓ update tape, simply mount the tape on the tape drive, and select this option. The update option will automatically load the changes from the update tape onto the system. After the update is complete, restart the REALITY Check ✓ programs following the proceedure in Section XII.

Option 4 - Enter New Software Key:
The REALITY Check ✓ program is a keyed program. That is, it checks a software key before running. When the software key expires, REALITY Check ✓ will no longer run until a new software key is entered into the system. On 7.X systems, you would normally need to log to the SYSMAN account and re-install the program to enter the new key. This menu item allows the operator the convenience of entering a new key without logging to SYSMAN and reinstalling the software.

Option 5 - Display Trace Files:
Each of the processes that run under REALITY Check ✓ (the TIPH, Modem and UPS processes) maintain trace files that show the activity of each of these processes. The trace files are normally examined only when there is a problem with REALITY Check ✓ , and are intended as a debugging aid.

Each trace file maintains a 40 line circular buffer. In other words, only the last 40 events are stored in any of the trace files. The contents of the trace files are only erased when one of the processes is logged on (i.e. logging on the Modem process causes the contents of the Modem Trace file left over from the last session to be erased).

Option 6 - Display System Status Events

The Display System Status Events Menu is used to display the various events and errors that are summarized on the Main menu. This menu gives the operator the ability to see the Disk, Memory or Group Fromat errors without the need to exit REALITY Check ✓ and return to TCL. Most of the events depicted on the Main screen can be viewed using this menu option. The menu choices available in the System Status Events menu are shown below.

1. Correlate System-Log Events
2. Group Disk Errors
3. List Disk Errors
4. Display Tape Errors
5. Display Mem Errors
6. Display OVF Events
7. Display GFE's
8. Display P-LAN Events
9. Display S-LAN Events
10. Display IOP Events
11. Display SM Events
12. List Startup Log (CLD Events)
13. List PWF Events

Option 7 - Display Stopped Processes:

Besides monitoring the events in the SYSTEM-LOG file, REALITY Check ✓ also monitors the other processes that are running. If a process has stopped (either because it is in the Assembler or DATA/BASIC debugger, or because of an unusual PIB status), it is noted on the Main menu. If the operator wishes more information about stopped processes, this menu option will display all the processes on the system that have stopped. An example of the stopped process display is shown below.

Display Stopped Processes

	PORT	PCBFID	PS	RTN STACK...			
D	5	226419	FBFF	2040.1F	2023.06E		In Assembly Debugger
		226417		6.0FC	6.076	5.124	
	50	227037	FBFF	6.0FC	1782.09C	1781.1C0	In DATA/BASIC Debugger

Option 8 - Display File-Save Events

This option displays file information gathered each time a File-Save is run. If the File-Save PROC has been modified to allow tracking of Stat-File information (see Installation Instructions), then each time a File-Save is performed, REALITY Check ✓ scans the Stat-File, and copies information about the file statistics into the REALCHECK Account for display to the operator using this menu option. REALITY Check ✓ tracks possible file sizing errors, and GFE's.

The GFE display shows the Account name and file name where the GFE occurred so that the operator can take steps to correct the problem. File sizing errors are not really errors, but are files that may need to be resized and warrant examination. Files that need to be resized are shown by account name, file name, MOD and SEP.

Option 9 - Display TL Status
If Transaction Logging is running on the system, REALITY Check ✓ will track the progress of this process. The main menu will display how full the TL tape is (in Percent). This menu is used to provide detailed information about the TL process (Process name, type, % full, etc). This menu item basically does a TL-STATUS, avoiding the need to exit REALITY Check ✓ to run the TL-STATUS from TCL.

Option 10 - List Users (LISTU)
This menu option will list the connected users by doing a LISTU command. If the operator wants to see who is logged on, or what account names are associated with a stopped process, this menu item can be used without the need to return to TCL, to do a LISTU, and then return to REALITY Check ✓ .

Option 11 - List Active Processes
This menu item can be used to see which processes are using system resources and how much each is using. This menu item performs a WHERE (BEAT command. This command samples the system for 10 seconds, and then presents the result of the sample).

Option 12 - Display Session Manager Status
This option offers a quick look at the Session Manager status.

Option 13 - Display Incident Activity
This option is used to view and delete incidents automatically opened by REALITY Check ✓ with Central Dispatch.

IX. Theory of Operation

There are four components to the REALITY Check ✓ program: the Main program, the TIPH program, the UPS program , and the Modem program. The Main program displays event summary and setup information to the operator through various menu screens. The Main program communicates with three other programs that do most of the work for REALITY Check ✓ .

The TIPH process periodically scans the system for events, and reports the results back to the Main program. If the events thresholds set by the operator have been exceeded, it is the TIPH process which calls the system operator's pager.

If a UPS is installed on the system, the UPS program monitors the UPS for any alarm conditions that may occur. If any UPS alarm conditions are present, the UPS program will page the system operator

and, if main power has been lost, the UPS program will logoff all users (if so indicated in Setup Screen1) and perform an orderly shutdown of the system (provided that system shutdown has been indicated in Setup Screen 1).

Both the UPS and TIPH programs communicate with the Modem program in order to page the system operator and initiate the Call Home process. The Modem program controls the modem, and waits for "call" commands from either the TIPH or UPS programs.

When the Modem process is logged on, it will check to see that the modem is connected to the system, and that the modem is responding. The Modem process will also verify that an outside phone line is connected to the modem. After the Modem process has finished these checks, the result will be displayed on the screen for the operator. If the modem is responding to the Modem program, and if an outside phone line is connected to the modem, then the modem status will be "Idle". This indicates that the Modem process is ready to accept commands. If there is no outside line connected to the modem, then the modem status will be "Phone Disconnected". If the modem is not responding to the Modem program, then the modem status "NO RS-232" will be displayed indicating that the modem is not responding to the program. (Normally, this status would indicate that the modem cable has become disconnected from the system).

The TIPH process will scan the system every 10 minutes. If the operator wishes to see the results of a TIPH scan at any given time, select Option 3 within the TIPH utilities (Scan System). This will cause the TIPH process to scan the system immediately, and post the results for the Main program (displayed on the Main menu).

REALITY Check ✓ will page the system operator whenever any of the thresholds are met or exceeded. REALITY Check ✓ will also page the system operator if the Session Manager is not logged on, or has stopped (unusual PIB status or in the debugger). If a UPS is connected to the system, the system operator will be paged if a UPS fault is detected.

REALITY Check ✓ will call the Novadyne Central Dispatch system and automatically log an incident if one GFE, or one Memory error is detected. REALITY Check ✓ will also call home if four (4) Disk errors are detected within a 24 hour period. If the "Call Home for GFE" flag is set to "N", then REALITY Check ✓ will only call home for Memory or Disk errors.

If REALITY Check ✓ is operational for a period of 30 days without a Call Home incident an automatic Call Home Test will be initiated. This will enable Novadyne to check on system status.

X. Troubleshooting

A. Modem

After REALITY Check ✓ has been installed and configured, the system administrator Paging and Call Home functions should be tested. To do this perform the following:

1. System Operator Paging:

   To test the ability of REALITY Check ✓ to page the system operator go to the Utilities Menu and select option "M" for Modem utilities.

   Select Option "4" (Test Pager Feature) and wait. This will cause REALITY Check ✓ to page with the following:

   MESSAGE + 12345601

   Where "MESSAGE" = the numeric value entered in the "Pager Message" field of the "Setup Basic Parameters" screen (see page 6).

   If the entire message is received, no adjustment is necessary. If only the last part of the message is received, the time delay is too short. If no message is received, the time delay is too long. Listen to the modem as the number is dialed, to determine the adjustment to be made to the time delay.

2. Testing the Call Home Feature:

   To test the ability of REALITY Check ✓ to Call Home and open an incident on Central Dispatch, select Option "5" (Test Call Home Feature) from the Modem Utilities menu. This will actually cause REALITY Check ✓ to connect to the Novadyne Central Dispatch System and open a test incident. Progress of the test will be displayed on the message line of the terminal executing the test. A pass or fail message will be displayed when the test is completed and the incident will be entered in the Incidents file (see page 18).

   REALITY Check ✓ will continue trying until it successfully opens an incident. There are no adjustments to this test if it fails. If this test continues for a period of two minutes without successful completion, log on to REALITY Check ✓ at another terminal and log to the Modem Utilities menu, select Option "2" (Log off modem) , and contact Novadyne Central Support.

XI Shutting Down REALITY Check ✓

In the event of a Cold Start or AF Restore it will be necessary to log off the REALITY Check ✓ processes. To shut down these processes, follow the procedure outlined on the Quick Reference Card and as listed below:

1. **Log off the TIPH Monitor:** From the REALITY Check ✓ Main menu, enter "U" for Utilities menu, then enter Option "T" for the TIPH options, then "2" for TIPH log off.
2. **Log off the Modem:** From the REALITY Check ✓ Main menu, enter "U" for Utilities menu, then enter Option "M" for the Modem options, then "2" for modem log off.
3. **Log off the UPS:** From the REALITY Check ✓ Main menu, enter "U" for Utilities menu, then enter Option "U" for the UPS options, then "2" for UPS log off.
4. Perform a "WHERE" on the three processes just logged off to verify that they were successfully logged off.

XII Restarting REALITY Check ✓

To restart the REALITY Check ✓ processes, log on to the REALCHECK Account from "Logon Please" and follow the procedure outlined on the Quick Reference Card and as listed below:

1. **Log on the TIPH Monitor:** From the REALITY Check ✓ Main menu, enter "U" for Utilities menu, then enter Option "T" for the TIPH options, then "1" for TIPH log on.
2. **Log on the Modem:** From the REALITY Check ✓ Main menu, enter "U" for Utilities menu, then enter Option "M" for the Modem options, then "1" for modem log on.
3. **Log on the UPS:** From the REALITY Check ✓ Main menu, enter "U" for Utilities menu, then enter Option "U" for the UPS options, then "1" for UPS log on.
4. Check the lower right section of the Main Display screen to verify that all processes have been successfully started and are in the "Idle" state.

XIII Sytem Resource Overhead

On average the REALITY Check ✓ programs utilize less than one percent of the total system resources available. This number can incerase however if SYSTEM-LOG entries are allowed to accumulate.

APPENDIX A

REALITY Check ✓ is compatible with the following Exide UPS models which include the RS232 Option. These are available from NOVADIRECT Catalogue at 1-800-926-6823.

Exide Powerware System 20*
Exide Powerware System 50
Exide Powerware System 80
Exide Powerware System 125
Exide Powerware System 150
Exide Powerware System 225
Exide Powerware System 375

Exide Powerware Plus 6
Exide Powerware Plus 12
Exide Powerware Plus 18
Exide Powerware Plus 36

* Note: RS232 is not standard on this unit and must be installed.

Other UPS types to be integrated will require a written RPQ with complete model and revision level data. Upon receipt of this information, Novadyne will schedule the analysis and provide a written quotation based on time and material costs.