

1. RIT System Restoration

CMOS Configuration Settings

Introduction

All RIT Systems have been delivered with hardware and software options installed and configured by AOS-500. All commercial software licenses, original equipment manufacturer's (OEM) installation diskettes and manuals have been included in every RIT System delivery. AOS-500 recommends that site users store the OEM manuals and diskettes in a cool, dry, accessible, and safe place.

Recommendation: AOS-500 recommends that customers fully backup their system upon receipt and then establish a schedule for partial or incremental backups.

Importance of RIT System Back-up

As with any hardware system, component failures are inevitable and the RIT System is no different. Personal computers, for the most part, are very reliable and when a system failure occurs, it is not only unexpected but usually at the most inopportune time when you are least prepared. *Even the best of us, who should know better, are caught napping sometimes!*

Back up the RIT System to preserve:

- the system software image (all installed programs and configuration settings)
- any special or site specific data files (flight check, history files, etc.)
- custom configuration changes (modem address books, desktop colors, radar analysis settings)

Common Hardware Failures

Hardware failures are a result of a multitude of reasons and are frequently catastrophic. Be aware that they are always unexpected and are quite often intermittent, misleading troubleshooting efforts. Common hardware subsystem failures:

- hard drive
- video monitor or port
- keyboard or mouse
- tape drive
- processor board

When the RIT System fails, due to a hardware component failure, customers risk destroying or corrupting files, especially if the system was writing data to the hard disk. Microsoft Windows performs frequent background writes to temporary files on the hard disk, transparent to the user.

Note: When the PC system fails and the chassis is sent to the FAA Logistics Center (AML-442) for repair, the customer is expected to have a backup copy of the current RIT System image and any special data or custom configuration files to restore on the replacement system.

Common Software Failures

Software related failures usually can be isolated to a specific application, but the damage to the DOS file system is almost always irreversible. Common software failures are:

- file system corruption
- mistaken file deletion
- incorrect configuration change
- application error
- computer virus infection

Note: Backing up the RIT System is solely the responsibility of the customer. AOS-500 and AML-442 do not maintain any customer specific or custom files.

Backup Schedule

Backing up the system is simply defined as “making a duplicate copy of a file or files for safe keeping”. Consider making a duplicate of a diskette containing important, irreplaceable data.

A common backup schedule:

1. Full backup - usually weekly or monthly
2. Incremental or partial backup - usually daily or weekly

Recommendation: Customers should establish a backup schedule that they can reasonably adhere to and be faithful to. Each customer was provided a commercial backup utility installed on each RIT System.

Evaluate the replaceability of the data/files in question. Considerations should include: how much time is required to recreate the file (reload data), the inconvenience of operating without the lost data (downtime/offline), and the interval between the data changing.

AOS-500 maintains only the original delivery configuration. Software drivers required for the various hardware options have been supplied in the original OEM packages with every RIT System delivered.

2. RIT System Configuration

Introduction

All RIT Systems have been preconfigured by AOS-500, prior to delivery. Copies of the original equipment manufacturer's (OEM) installation diskettes and manuals have been included in every RIT System delivery.

Recommendation: AOS-500 recommends that site users store the OEM manuals and diskettes in a cool, dry, accessible, and safe place.

Hardware Configuration Management

The AOS-500 is designing radar analysis software tools to run on a generic Microsoft DOS/Windows 3.1 PC. Currently, there are several different PC models used as a RIT System. It is reasonable to expect that several more models will be used as a RIT System as the PC industry technology evolves.

AOS-500 established a RIT System Definition to describe the hardware components required to maintain compatibility nationwide. This definition is designed to be compatible with the all of the FAA newly developed radar analysis software tools and many of the legacy software programs.

COTS Hardware

AOS-500's RIT System hardware configuration management program entails the management of minimum and maximum COTS PC hardware capability. AOS-500 does not proposed to manage the COTS PC hardware in the traditional FAA configuration management practice. The RIT System Hardware Specification defines minimum and maximum PC options thereby defining minimum performance operations.

Each PC hardware model, regardless of manufacturer, will require specific software device drivers (OEM developed operating system "extension" programs) for each of the hardware subsystem components.

All OEM documentation and device driver diskettes should be stored at each site with the RIT System PC, for use in the event of equipment failures or system upgrades.

Some devices device drivers usually supplied by the OEM:

- video boards & monitors
- pointing devices (mouse, glide points, track balls)
- printers

- SCSI devices (hard disk, tape, and CD-ROM drives)

Warning ! AOS-500 and AML-442 do not maintain storage of OEM documentation or device driver diskettes for each customer. AML-442 will provide to the customer the required OEM packaged items when new subsystem components are provided.

FAA Hardware

FAA special use cards, such as the RDI System and the MX-6A, are used to interface a PC to a radar sensor or NAS modem. These devices are designed to fit and operate within the RIT System definition and all device drivers are available from AOS.

Software Configuration Management

AOS-500 has designed its radar analysis software tools to run under the Microsoft DOS/Windows 3.1 PC environment. AOS-500's RIT System software configuration management program entails the management of the capability to run the required COTS software and FAA software.

RIT System Services

Customer	Service	RIT System Option
Mode-S	tape drive emulation	TDIC (Tape Drive Interface Card)
Mode-S	realtime air traffic display/record	MX-6A Card w/RTADS software
ALL	electronic documentation	CD-ROM drive w/DOS & Windows device drivers & Worldview s/w
ALL	file exchange with remote user	Modem w/Procom + software
ASR-9	radar optimization	RDI System w/recording software
ARTCC, CERAP, TRACON	external optical drive read/write	SCSI Host Adapter termination option

TABLE 2. -1 SOME OF RIT SERVICES.

The RIT System provides several services to each customer (refer to Table 2. -1). See the RIT System Definition section for a more complete discussion of RIT System services.

FAA RIT System Mission Support

With the delivery of each RIT System, AOS-500 configured and optimized the system settings that best performs the FAA RIT System mission. AOS-500 supports the "official" RIT System configuration to the extent of FAA mission performance. All the services that the RIT System is currently tasked to provide, has

been addressed in the “official” RIT System configuration; hardware and software.

Installing Other Software

Customers may choose to install other commercial software they determine useful to accomplish the FAA mission. Customers are not discouraged from installing legally acquired software on the RIT System, however, AOS-500 can not support other software products. It is expected that customers adhere to commercial software copyright usage licenses.

Caution ! Customers should be aware that the install programs of many software products, alter the DOS/Windows configuration files that may have an adverse impact to the performance of the PC and the FAA RIT System Mission.

Many install programs of well designed software products allow the user to choose whether the DOS/Windows configuration files should be automatically modified or not. Additionally, well designed software provides for an uninstall option to remove any “footprint” that the product has made on the system including configuration file changes and various supporting files installed.

Unfortunately, there exists a multitude of software that does not adhere to the “well design” specification. These programs make changes to the configuration files, causing problems that are frequently irreversible.

Recommendation: AOS-500 recommends that a full system backup be taken prior to the installation of any software.

Computer Viruses

Computer viruses are destructive, designed to destroy data and some can even affect hardware. In the past, several AOS computer systems have been infected (on more than one occasion) with various kinds of computer viruses. Although, the infections have been detected and removed by various methods, no serious damage was done.

Chances of infection increase everytime data is copied from one system to another. Customers should take precautions to protect their computers from infection. Refer to the Virus Protection section.

RIT System Hardware Configuration

Personal computer manufacturers employ several techniques to ensure that their hardware is compatible for a wide variety of

applications. One of the standard and most popular techniques is software utilities used to configure and customize hardware options.

Each RIT System PC uses a system setup utility to define and customize its options. The options, once set can be saved into battery-maintained memory, popularly referred to as “CMOS memory” (Complementary Metal-Oxide Semiconductor = electronic memory with low power dissipation). Two of the RIT System models require a special OEM utility to configure the PC Extended Industry Standard Architecture (EISA) expansion bus.

System Setup Utility

The “System Setup” utility allows the user to define and edit each of the features and options the manufacturer designed into the hardware system. The “System Setup” utility writes the system configuration into the CMOS memory where it is saved and read each time the computer is powered on.

For most of the RIT Systems, the user can activate the “System Setup” utility during the bootup sequence, usually pressing <CTRL> + <ALT> + <ESC> key sequence (press simultaneously) when prompted. The “System Setup” utility is usually a manu driven software utility.

System Setup is usually run after replacing the computer battery, upgrading the video port, or if you want to change, enable, or disable the system date/time, the memory configuration, or the system password option.

System Setup Option	RIT Setting
On Board Floppy Adapter	Enable; A: = 1.44MB; B: = None Some motherboard have an on-board floppy drive controller, enable it if the floppy drive is plugged into it. Only one 3.5 inch, double sided, high density, micro-diskette drive is required.
On Board Hard Disk Adapter	Disable; Disk 0: = None; Disk 1: = None Many motherboards have an integrated IDE hard drive controller. RIT uses a separately installed SCSI Host Adapter (contrller card).
Default Boot Device:	Auto (check A: then C:) On some motherboards having an integrated floppy drive controller, can have a different boot sequence than the standard floppy (A:) then the hard drive (C:). RIT uses the standard bootup sequence. Network servers require the fast auto-reboot feature of only booting off the hard drive.
Video Adapter:	EGA/VGA Many motherboards have an integrated video controller. RITuses the VGA option. Many Setup utilities have an EGA/VGA option instead of VGA.
Memory:	Conventional = 640KB; Total = 16MB (16,384 bytes) Usually this is automatically detected by the system and no operator intervention is required.

Parallel Port (LPT1:)	addr = 0378h; interrupt = IRQ7 The industry standard port address and interrupt are used.
Serial Ports	COM1 = 3F8h; COM2 = disable The industry standard addresses are used for the COM ports. COM2 is disabled for the internal modem or a serial port mouse.
Default Speed:	High The microprocessor clock speed may have more than one setting. The High or Fast setting is used for RIT.
Shadow BIOS:	System & Video Copying the BIOS to upper memory areas increases system performance, sometimes significantly. On motherboards with integrated video ports, shadowing video BIOS is valid option, otherwise only the system BIOS can be shadowed. Where possible, shadow both, the System BIOS and Video.
Cache Memory:	Enable Cache memory improves the microprocessors input/output performance. Always enable cache memory.
Password Enable/Disable:	Disable Some motherboards allow the user to enable a power-on password. For RIT, this should be disabled.

TABLE 2. -2 RIT SYSTEM GENERAL FEATURE SETTINGS

The “System Setup” features and options vary for every PC. In general, the system default settings are usually used. Refer to Table 2. -2 for the System Setup settings used in the RIT System.

EISA Bus Configuration Utility

The PC EISA (Extended Industry-Standard Architecture) expansion bus requires a special OEM utility program to configure it. The PC manufacturer included an “EISA Configuration” diskette with every computer.

Each RIT System EISA bus was configured and a backup copy of the OEM “EISA Configuration” diskette for each PC.

RIT System verion	Computer model	Expansion bus	System Setup Utility	EISA Config Utility	RIT Boot Disk
RIT v1 (Mode-S)	AST Premium 486/33 model 3V desktop	ISA/Cupid 32	Yes	No	Yes
RIT v2 (Mode-S)	AST Premium 486/33 model 3V desktop	ISA/Cupid 32	Yes	No	Yes
RIT v3 (Mode-S)	AST Premmia 4/66d EISA desktop	EISA	Yes	Yes	Yes
RIT v4 (ASR-9, no Mode-S)	AT&T Globalyst 630 Pentium 100 Minitower	ISA/PCI	Yes	No	Yes

E-RIT/Recorder (ARTCC)	AST Premium 486DX2/66 Tower	EISA	Yes	Yes	Yes
E-RIT/Analyzer (ARTCC)	AST Premium 486DX2/66 Tower	EISA	Yes	Yes	Yes

TABLE 2. -3 RIT SYSTEM CONFIGURATION UTILITIES

If EISA board(s) are installed in the computer, they must be added to the system configuration because the EISA Configuration Utility program can help you determine proper switch settings for the board(s). ISA board(s) do not have to be added to the configuration, but the EISA Configuration Utility will be unable to detect and notify the operator of resource conflicts (such as I/O address or IRQ conflicts) unless the board(s) are added to the system configuration.

The RIT System uses one EISA board, Adaptec 32-bit SCSI Host Adapter model AHA-1742. The RDI Boards and modem are ISA boards and are not defined in the system configuration.

By not defining each of the EISA slots, except for the EISA boards, allows for greater flexibility while adding or removing ISA boards (especially during troubleshooting).

Warning ! Boards with different I/O addresses and IRQ's inserted into an EISA slot configured differently, will not be recognized by the system and may generate errors.

The EISA bus is used in the RIT Systems as indicated by Table 2. - 3.

EISA Option	Configuration Setting
Parallel Port (LPT1:)	Addr = 0378h; Interrupt = IRQ7 The industry standard port address and interrupt are used.
Serial Ports	COM1 = 3F8h; COM2 = disable The industry standard addresses are used for the COM ports. COM2 is disabled for the internal modem or a serial port mouse.
On Board Floppy Adapter	Integrated; A: = 1.44MB; B: = None Some motherboards have an on-board floppy drive controller, enable it if the floppy drive is plugged into it. Only one 3.5 inch, double sided, high density, micro-diskette drive is required.

EISA Option	Configuration Setting
On Board Hard Disk Adapter	Add-in; Disk 0: = None; Disk 1: = None Many motherboards have an integrated IDE hard drive controller. RIT uses a separately installed SCSI Host Adapter (controller card).
Video Adapter:	EGA/VGA Many motherboards have an integrated video controller. RIT uses the VGA option. Many Setup utilities have an EGA/VGA option instead of VGA.
Integrated Mouse Port	Enable Many motherboards have an integrated mouse port that should be enabled if a Microsoft Mouse compatible pointing device is used.
Memory:	Conventional = 640KB; Total = 16MB (16,384 bytes) Usually, this is automatically detected by the system and no operator intervention is required.
EDIT RESOURCES <F6> Slot 1	IRQ 11 Trigger: Level The Adaptec Board is set for IRQ 11. The Interrupt Request Channel is a channel through which a hardware device can send a message to get the immediate attention of the computer's CPU. Adaptec 32bit Adaptec SCSI Host Adapter (without floppy) This option should be automatically detected by the EISA Configuration Utility.
Host Adapter Interface Mode	Enhanced Mode The Adaptec Board should be set in Enhanced to take full advantage of the 32 bit data transfer capability and the faster EISA bus clock speed.
I/O Port Definition	I/O Port 330H The Adaptec Board is set for I/O address of 330h.
DMA Channel Definition	DMA 5 The Adaptec Board is set for DMA channel 5. Direct Memory Access allows hardware control of the transfer of streams of data to or from the computer's main memory.
Host Adapter SCSI Id	Device Id 7 The Adaptec Board is set for a SCSI-Id of 7 (industry standard setting).
SCSI Bus Reset at Power-on	Enable SCSI Bus Reset This option allows you to enable or disable a SCSI bus reset generation by the host adapter during its power-on initialization and after a hard reset. If enabled, the host adapter BIOS resets the SCSI bus, then waits two seconds before scanning the bus for SCSI devices. Normally, this should always be enabled.
Floppy Controller	Not Present
Host Adapter BIOS	Enabled @ Base Address CC00H

EISA Option	Configuration Setting
Extended BIOS Translation	Enabled This option allows you to enable or disable extended translation for SCSI hard disks with a capacity greater than 1GB. It is only valid if the host adapter BIOS is enabled.
Support for more than 2 Drives	Disabled This option allows you to enable or disable BIOS support for more than two SCSI hard disk drives. It is only valid if the host adapter BIOS is enabled.
Immediate Return on Seeks	Enabled
EDIT RESOURCES <F6>	IRQ 11 Trigger: Level
ADVANCED OPTIONS <F7>	
LOCK/UNLOCK BOARDS	System !Locked This board is locked so it can not be edited.
	Slot 1 !Locked This board is locked so it can not be edited.
System	AST Premmia System Board (file: AST0301.cfg) This option looks at the CFG file for options.
Slot 1	Adaptec 32-bit SCSI Host Adapter (without floppy) (file: ADP0001.cfg) This option looks at the CFG file for options. This slot is the only defined slot.
Slot 2, 3, 4, 5, 6, 7, 8, 9, 10	(Empty) Only slot 1 should be defined.
Set Verification Mode	Automatic This should be set to automatic.

TABLE 2. -4 RIT V3 EISA CONFIGURATION

To restore the RIT System EISA bus configuration to the delivery configuration, follow the steps listed below.

- STEP 1.** Boot with the “EISA System Configuration” diskette supplied by AOS-500 in the A: floppy drive.
- STEP 2.** Select “Maintain System Configuration Disk” from the Main Menu.
- STEP 3.** Select “Load a Backup SCI File” from the Maintain System Configuration Disk.
- STEP 4.** Select the appropriate file for the hardware system your configuring: “RITSYS.SCI RIT 3.0 System Config All Boards” or “ERITSYS.SCI ERIT System Configuration”.

STEP 5. Select “Save the configuration and restart the computer”. Press <ENTER> to reboot the computer.

Below are the RIT System “System Setup” features and options settings.

System Setup Option	RIT v1 & v2 (AST Premium 486/33)
Diskette A:	1.44M
Diskette B:	None
Fixed Disk 0:	None
Fixed Disk 1:	None
Video Adapter:	EGA/VGA
Primary Video:	Primary
Conventional Memory:	640
Extended Memory:	reference only
Reserved Memory:	reference only
Math Coprocessor:	Enable
Math Coprocessor Type:	reference only
Parallel Port Address:	0378h
Parallel Port Interrupt:	IRQ7
Serial Ports:	SP1=3F8h SP2=2F8h
On Board Floppy Adapter:	Enable
On Board Hard Disk Adapter:	Disable
Default Speed:	High
Auto Slowdown:	Enable
Shadow BIOS:	System & Video
Cache Memory:	Enable
Limit Access to 16MB:	Disable
Default Boot Device:	Auto
Boot Without Keyboard:	Disable
Numlock On After Boot:	Disable
Password Enable/Disable:	Disable
Server Mode:	Disable

TABLE 2. -5 RIT V1 & V2 SYSTEM SETUP OPTIONS

System Setup Option	RIT v3 (AST Premmia 4/66d)
Floppy Disk Adapter	Integrated
Floppy Disk A	1.44M 3.5"
Floppy Disk B	None
Keyboard Error	Report as Error
Num Lock	Off at Boot
Default Speed	High
Boot Device	Try Floppy First
POST Testing	Normal
Primary Video	reference only
Total Memory	reference only
User Password	None
Video Blanking	Disable
Walk 'n' Lock Duration	0
Admin Password	Disable
Setup Privilege	User and Admin
BIOS Update Privilege	User and Admin
Change User Password	User and Admin
Minimum Password Size	0
Temporary Override	Disable
Read-Only ISA Conf.	Read/Write
Read-Only EISA Conf.	Read/Write
Read-Only Floppy Drive	Read/Write
Read-Only I/O Port	Read/Write
BIOS	reference only
BIOS Loader	reference only
Processor Type	reference only
Processor Speed	reference only
System Serial Number	reference only
Asset Tag	reference only

TABLE 2. -6 RIT V3 SYSTEM SETUP OPTIONS

System Setup Option	RIT v4 (AT&T Globalyst 630 Pentium 100)
Floppy Disk A	1.44M 3.5"
Floppy Disk B	None
IDE Adapter 0 Master	None
IDE Adapter 0 Slave	None
IDE Adapter 1 Master	None
IDE Adapter 1 Slave	None
Video System	EGA/VGA
Memory Cache	
External Xache	Enabled
CPU Internal Cache Enabled	Enabled
Memory Shadow	
System Shadow	reference only
Video Shadow	Enabled
Shadow Memory Regions	
C800-CBFF	Disabled
CC00-CFFF	Disabled
D000-D3FF	Disabled
D400-D7FF	Disabled
D800-DBFF	Disabled
DC00-DFFF	Disabled
Boot Sequence	C: then A:
Numlock	Off
System Memory	reference only
Extended Memory	reference only

TABLE 2. -7 RIT V4 SYSTEM SETUP OPTIONS

System Setup Option	E-RIT (AST Premium SE 4/66d)
Floppy Disk Adapter	Integrated
Floppy Disk A	1.44M 3.5"
Floppy Disk B	None
Boot Device	Try Floppy First
Keyboard Error	Report as Error
Num Lock	Off at Boot
Default Speed	High
External Copr. Type	None
Security	None
BIOS	reference only
Keyboard Controller	reference only
BIOS Loader	reference only

TABLE 2. -8 E-RIT SYSTEM SETUP OPTIONS

EISA Configuration	RIT v3 (AST Premmia 4/66d)
System	AST Premmia System Board
Parallel Port	378h, IRQ7
Parallel Port Type	Standard
Serial Porta	Port 1=3F8h, 2 disabled
Floppy Disk Adapter	Integrated
Floppy Disk A	1.44 MB 3.5"
Floppy Disk B	None
Hard Disk Adapter	Add-in
First Hard Disk Type	None
Second Hard Disk Type	None
User Def1: Number of Heads	1
User Def1: Number of Cylinders	1
User Def1: Number of Sectors	1
User Def1: Write Precompensate	0
User Def2: Landing Zone	0
User Def2: Number of Heads	1
User Def2: Number of Cylinders	1
User Def2: Number of Sectors	1
User Def2: Write Precompensate	0
User Def2: Landing Zone	0
Video Adapter	EGA/VGA
Integrated Mouse Port	Enable
CPU	Type 80486DX2 Speed 66MHz
Conventional Memory	640 KB
Total Memory	16 MB
EDIT RESOURCES <F6> Slot 1	IRQ 11 Trigger: Level Adaptec 32bit Adaptec SCSI Host Adapter (without floppy)
Host Adapter Interface Mode	Enhanced Mode
I/O Port Definition	I/O Port 330H (Standard Mode)
DMA Channel Definition	DMA 5 (Standard Mode)
Host Adapter SCSI Id	Device Id 7
SCSI Bus Reset at Power-on	Enable SCSI Bus Reset
Floppy Controller	Not Present
Host Adapter BIOS	Enabled @ Base Address CC000H
Extended BIOS Translation	Disabled
Support for more then 2 Drives	Disabled
Immediate Return on Seeks	Enabled
EDIT RESOURCES <F6>	IRQ 11 Trigger: Level
ADVANCED OPTIONS <F7>	
LOCK/UNLOCK BOARDS	System !Locked
	Slot 1 !Locked
System	AST Premmia System Board (AST0301.cfg)
Slot 1	Adaptec 32-bit SCSI Host Adapter (without floppy) (ADP0001.cfg)
Slot 2, 3, 4, 5	(Empty)
Set Verification Mode	Automatic

TABLE 2. -9 RIT v3 EISA CONFIGURATION

EISA Configuration	E-RIT (AST Premuim SE 4/66d)
System	AST Premmia System Board
Parallel Port	378h, IRQ7
Parallel Port Type	Standard
Serial Porta	Port 1=3F8h, 2 disabled
Floppy Disk Adapter	Integrated
Floppy Disk A	1.44 MB 3.5"
Floppy Disk B	None
Hard Disk Adapter	Add-in
First Hard Disk Type	None
Second Hard Disk Type	None
User Def1:Number of Heads	1
User Def1:Number of Cylinders	1
User Def1:Number of Sectors	1
User Def1:Write Precompensate	0
User Def2:Landing Zone	0
User Def2:Number of Heads	1
User Def2:Number of Cylinders	1
User Def2:Number of Sectors	1
User Def2:Write Precompensate	0
User Def2:Landing Zone	0
Video Adapter	EGA/VGA
Integrated Mouse Port	Enable
CPU	Type 80486DX2 Speed 66MHz
Math Coprocessor Type	None
Conventional Memory	640 KB
Processor Board Memory	16M
Cache Memory	Enable
Video 800x600 Mode	56 Hz Non-Interlaced
Video 1024x768 Mode	87 Hz Non-Interlaced
EDIT RESOURCES <F6> Slot 1	IRQ 11 Trigger: Level Adaptec 32bit Adaptec SCSI Host Adapter (without floppy)
Host Adapter Interface Mode	Enhanced Mode
I/O Port Definition	Disabled (Enhanced Mode)
DMA Channel Definition	Disabled (Enhanced Mode)
Host Adapter SCSI Id	Device Id 7
SCSI Bus Reset at Power-on	Enable SCSI Bus Reset
Floppy Controller	Not Present
Host Adapter BIOS	Enabled @ Base Address CC000H
Extended BIOS Translation	Disabled
Support for more then 2 Drives	Disabled
Immediate Return on Seeks	Enabled
EDIT RESOURCES <F6>	IRQ 11 Trigger: Level
ADVANCED OPTIONS <F7>	
LOCK/UNLOCK BOARDS	System & Slot 1 !Locked
System	AST Premmia System Board (AST0301.cfg)
Slot 1	Adaptec 32-bit SCSI Host Adapter (without floppy) (ADP0001.cfg)
Slot 2, 3, 4, 5, 6 7, 8, 9, 10	(Empty)

Set Verification Mode	Automatic
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TABLE 2. -10 E-RIT EISA CONFIGURATION

RIT System Software Configuration

All RIT Systems have been preloaded and preconfigured with the COTS and FAA software on the hard drive by AOS-500. For your convenience, an initial RIT System backup tape or magneto-optical (MO) cartridge, has been included with every RIT System delivered by AOS-500.

Note: AOS-500 recommends that periodic backups of the RIT System be made to protect against the eventual system failure.

Device Drivers

The specific device drivers required to successfully operate each version of RIT PC hardware will vary between the different hardware versions. These drivers are not interchangeable between RIT Systems. The OEM Install disks have been included with each delivery.

Keep the OEM disks in a safe place.

RIT Master Backup

The RIT Master Backup contains all of the COTS and FAA TRACS-9 Radar Analysis programs that were installed and optimized on each RIT System. The RIT Master Backup was delivered on $\frac{1}{4}$ inch tape (RIT v1, v2, v3, & v4) or $5\frac{1}{4}$ inch MO disk (E-RIT Systems) with each delivery. This backup should be used for situations that require restoring the full or a partial RIT Software Configuration.

Keep the RIT Master Backup in a safe place.

RIT Boot Diskette

For your convenience, AOS-500 included a RIT Boot Disk with every RIT System delivery. It is used to bootup the RIT System when the entire RIT System software is required to be restored from the RIT Master Backup.

The RIT Boot Disk contains a minimized DOS configuration and backup utility to enable users to restore the system to the original baseline.

Keep the RIT Boot Disk in a safe place.

Catastrophic Failure

In the event of a catastrophic failure; e.g., hard disk failure requiring replacement or the hard drive data was lost or corrupted

or the SCSI Host Adapter fails, use the Restore Procedure in conjunction with the RIT Master Backup and the RIT Boot Floppy diskette to restore the RIT System Software Configuration.

Periodic Backups

Scheduled periodic backups should be accomplished to protect important data. Backups can be accomplished on $\frac{1}{4}$ inch tape, 3.5 inch high density disks, or on magneto-optical drive disks.

The RIT Master Backup is a full backup of the original software configuration. Site users can feel comfortable completing only incremental backups, that will backup only files that have been changed since the last backup.

Backing Up the RIT Software Configuration

Backup Procedures

- STEP 1.** Power down the PC system (for a cold boot).
- STEP 2.** Place the floppy disk labeled “RIT/AST 486/33 Boot disk level 1.00”, in the a: drive.
- STEP 3.** Place the 150 MB master tape in the tape drive unit.
- STEP 4.** Power on the PC to boot the PC system; i.e., Depress the RESET button on the computer (for warm boot).
- STEP 5.** After the system boots successfully, change active drive from the floppy drive, a:, to the hard disk, c:.
 - (a) at the DOS prompt, type c:.
 - (b) press <ENTER>.
- STEP 6.** Rename the hard disk volume label to “RIT_DOS”.
 - (a) at the DOS prompt type label c:RIT_DOS.
 - (b) press <ENTER>. The volume label "RIT_DOS" will now be affixed to the hard drive.
- STEP 7.** Create a subdirectory “backit4” for the backup software.
 - (a) at the DOS prompt type mkdir backit4.

(b) press <ENTER>.

STEP 8. Change the active subdirectory to backit4.

(a) at the DOS prompt type cd backit4.

(b) press <ENTER>.

STEP 9. Copy the Backit 4 application files from the floppy diskette to the hard drive subdirectory, c:\backit4.

(a) at the DOS prompt type copy a:\backit4*.*.

(b) press <ENTER>, the files will transfer.

STEP 10. Type bk4 and then press <ENTER>.

STEP 11. Select the RESTORE function and then press <ENTER>.

STEP 12. Select DIRECT RESTORE FROM BACKUP SET and then press <ENTER>.

STEP 13. Select RIT and then press <ENTER>.

STEP 14. Type y and then press <ENTER> to sequence number one on tape.

STEP 15. Press the F2 function key; i.e., RESTORE, to move the tape contents on to the hard drive.

STEP 16. After restore is complete, type quit (or q) to exit the backit program.

STEP 17. The RIT System 1.00 reload procedure is now complete!

Restoring the RIT Software Configuration

All RIT Systems have been delivered with a RIT Master Tape and a RIT Boot Floppy diskette containing the preinstalled RIT configuration.

RIT Master Tape

The RIT Master Tape contains all of the commercial and RIT Analysis Function software (preinstalled and configured) for the

RIT System. This tape should be used for situations that require restoring the entire RIT Software Configuration or a subset. Keep it in a safe place.

RIT Boot Floppy

The RIT Boot Floppy is used to bootup the RIT System when the entire RIT Software Configuration is required to be restored from the RIT Master Tape. Keep it in a safe place.

Restore Procedures

Warning ! Before executing this procedure, insure that the replacement hard drive is formatted as a DOS boot drive.

- STEP 1.** Power down the PC system (for a cold boot).
- STEP 2.** Place the floppy disk labeled “RIT/AST 486/33 Boot disk level 1.00”, in the a: drive.
- STEP 3.** Place the 150 MB master tape in the tape drive unit.
- STEP 4.** Power on the PC to boot the PC system; i.e., Depress the RESET button on the computer (for warm boot).
- STEP 5.** After the system boots successfully, change active drive from the floppy drive, a:, to the hard disk, c:.
 - (a) at the DOS prompt, type c:.
 - (b) press <ENTER>.
- STEP 6.** Rename the hard disk volume label to “RIT_DOS”.
 - (a) at the DOS prompt type label c:RIT_DOS.
 - (b) press <ENTER>. The volume label "RIT_DOS" will now be affixed to the hard drive.
- STEP 7.** Create a subdirectory “backit4” for the backup software.
 - (a) at the DOS prompt type mkdir backit4.

(b) press <ENTER>.

STEP 8. Change the active subdirectory to backit4.

(a) at the DOS prompt type cd backit4.

(b) press <ENTER>.

STEP 9. Copy the Backit 4 application files from the floppy diskette to the hard drive subdirectory, c:\backit4.

(a) at the DOS prompt type copy a:\backit4*.*.

(b) press <ENTER>, the files will transfer.

STEP 10. Type bk4 and then press <ENTER>.

STEP 11. Select the RESTORE function and then press <ENTER>.

STEP 12. Select DIRECT RESTORE FROM BACKUP SET and then press <ENTER>.

STEP 13. Select RIT and then press <ENTER>.

STEP 14. Type y and then press <ENTER> to sequence number one on tape.

STEP 15. Press the F2 function key; i.e., RESTORE, to move the tape contents on to the hard drive.

STEP 16. After restore is complete, type quit (or q) to exit the backit program.

STEP 17. The RIT System 1.00 reload procedure is now complete!