System90 HARDWARE CONFIGURATION GUIDELINES

The ARIX System90 offers a great deal of configuration flexibility. With this flexibility comes a degree of complexity. This document details a set of rules and guidelines to assist in configuring System90. The rules and guidelines presented here apply to current production systems as of the time of publication.

The following sections provide information and configuration rules for the various portions of the System90. The information provided here applies primarily to the hardware portion of the system. There may be other configuration requirements or limitations dictated by certain versions of software (operating system, communications, networking, etc.) which are not addressed in this document. Keep in mind that several items must be considered when configuring a System90. They include:

- Performance considerations (number of processors, amount of main memory, etc.)
- Number of logic slots
- Number of I/O slots
- Number of cabinets
- Power requirements
- Number, type and location of each peripheral device
- Bus Configuration (logic board positions)

For each logic slot at the front of a card cage there is an I/O slot at the rear of the card cage. Some boards require only a logic slot (eg. memory) while some require only an I/O slot (eg. an ACE board).

There are restrictions to the total number of cabinets in a system; this is identified for each system type.

Power requirements are listed for each board and peripheral type. The total power consumption must be checked for each cabinet to ensure that the power supply limitations are not exceeded.

Peripherals have mounting location limitations. There are limitations on the number of devices that each controller can support and how devices may be cabled to a controller. It is a good idea to specify which controller each of the peripheral devices should be connected to.

To ensure proper operation and the highest level of performance, logic boards must be properly located in the card cage.

When ordering a system, and in many instances when ordering an expansion or upgrade, a Configuration Sheet is needed. This sheet depicts the desired system configuration and is used as a guideline in the assembly of the ordered system. It is the document used to perform a technical audit of the configuration prior to order acceptance by ARIX. The use of a Configuration Sheet is necessary even when the product ordered is based on a standard prepackaged system, as many of the features may be placed in several physical locations.

It is important that the following be steps be followed when preparing to purchase a system.

1. Determine the hardware and software features needed to satisfy performance requirements for the system. The selection of appropriate ARIX products to support the number of communication lines, main memory, mass storage, software languages, DBMS, etc. is driven by these feature requirements. Review the available ARIX products and ascertain those that provide the performance/capacity levels meeting the requirements of the application. The assessment of required products should not be confined to immediate system performance requirements since a need for future expansion is virtually assured and should be considered during this process. Many times it is advantageous to select a more fully configured product with future requirements in mind since there may be a significant economic and/or performance gain in doing so.

2. The information and guidelines presented in this section provide a set of rules to use in configuring the various products into a workable and balanced system. After the products have been selected review the configuration rules for the type of system being ordered. Enter the products into the Configuration Sheet(s). When complete, the Configuration Sheets clearly illustrate the desired configuration of the system, the position and number of controllers, memory, mass storage devices and relative positioning of cabinets. The Configuration Sheets must be submitted when ordering a system so that a thorough technical audit of the system can be performed at the factory.

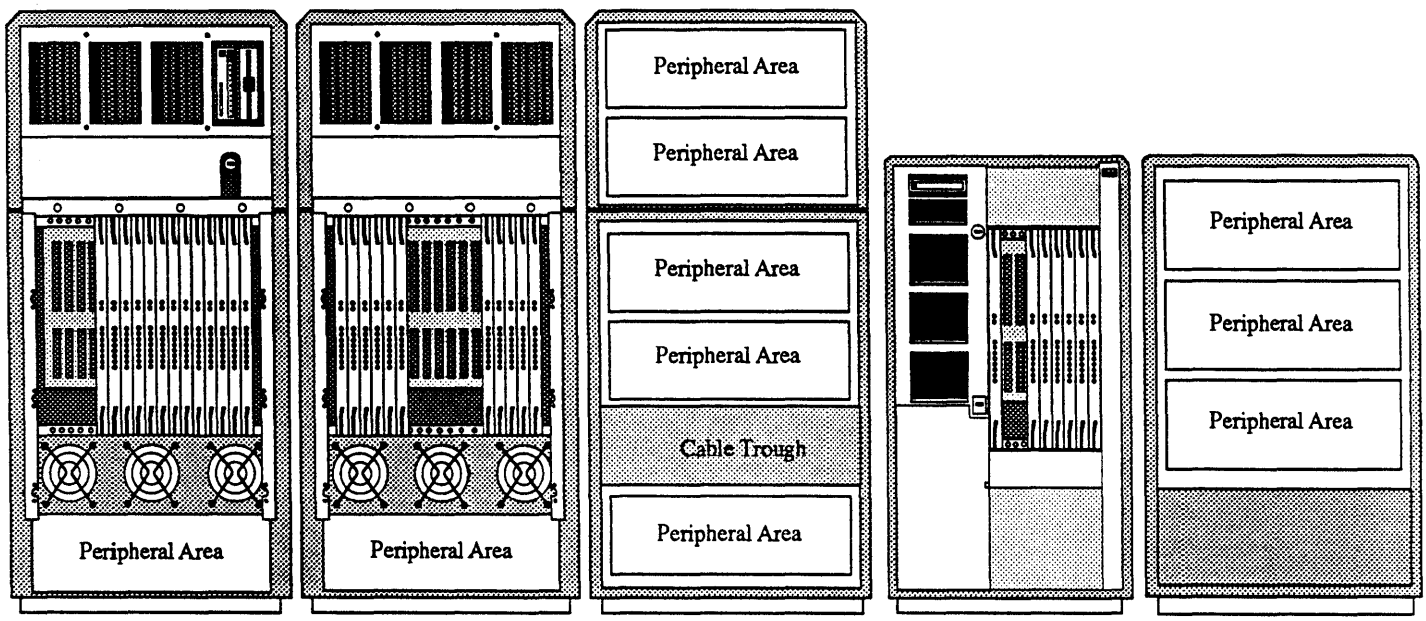
3. A Power Configuration sheet must also be filled out to ensure that the system's power capabilities are not exceeded.

4. Complete an ARIX Sales Order and include the completed Configuration Sheets.

The term 'logic board' is used to describe any of the CSS modules, eg. PM, MM, SPM, etc. A 'logic slot' is the mounting location for one of these boards and is located at the front of a card cage.

The term 'I/O slot' is used to describe the mounting location of I/O device boards, eg. ACDB, LWDB, DSDB, etc. An I/O slot is located at the rear of a card cage.

CABINET TYPES



System90/45, /85 Primary Cabinet

System90/85 I/O Expansion Cabinet

System90/45, /85 Peripheral Expansion Cabinet

System90/25 Primary Cabinet

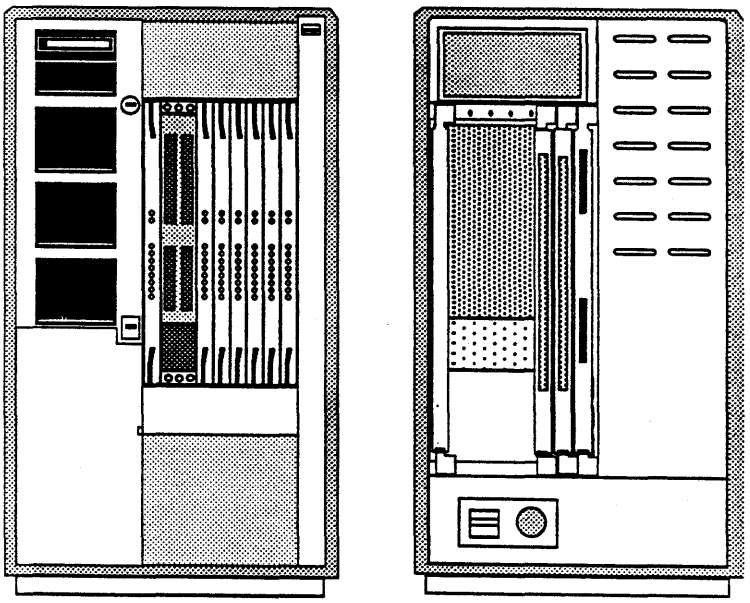
System90/25 Peripheral Expansion Cabinet

System90/25

A System90/25 consists of a main cabinet and up to one Peripheral Expansion Cabinet (PEC). The 90/25 is the smallest member of the System90 family and has the most limited expansion capabilities.

Front View

Rear View

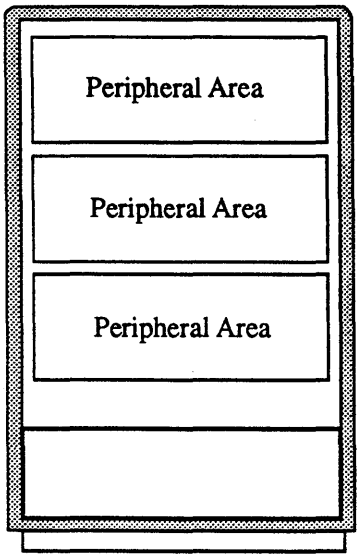


System90/25
Primary Cabinet

- Eight logic board slots
- The SPM/ACRW is always located in Slot 0
- ACE boards connected to the SPM/ACRW do not consume I/O slots, they occupy a dedicated area at the rear of the system
- The first IOPM/DSDB must be located in Slot 7
- Four built-in SCSI device mounting slots are located in the front of the system, three additional SCSI device slots are in the rear
- Each SCSI slot can accommodate one full-height or two half-height devices
- Devices in the front SCSI devices mounting slots are connected to one SCSI bus, devices in the rear slots are connected to a second bus; these two buses may not be interconnected
- Up to 6 devices may be connected to each of the internal SCSI busses
- The two internal SCSI busses may be connected to the same or different controllers

System90/25 PERIPHERAL EXPANSION CABINET (PEC)

Front View



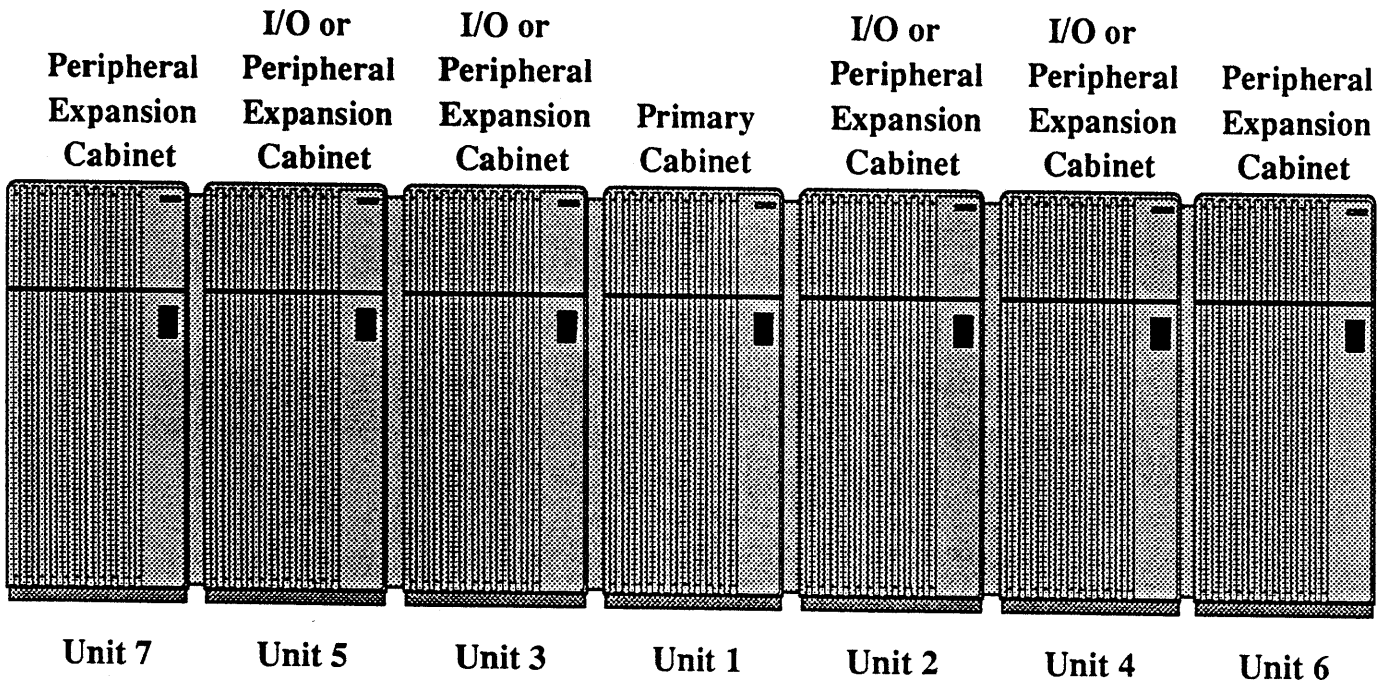
System90/25
Peripheral Expansion Cabinet

- The cabinet contains 3 peripheral device mounting areas
- The top peripheral mounting area must be filled first, the middle area second and the bottom area last
- 9 Track Tape Drives require one mounting area, only one may be installed in a PEC
- SCSI Device Trays require one mounting area
- The System90/25 can support only one PEC

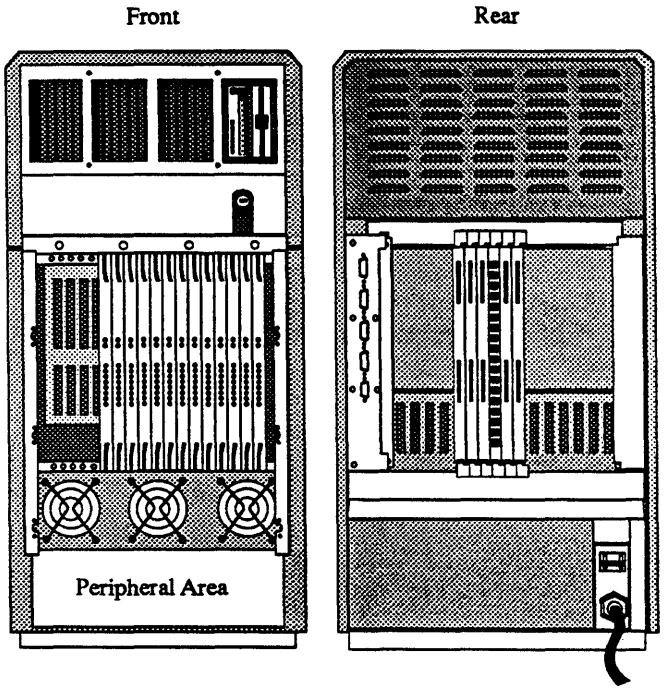
System90/45 and 90/85

A System90/45 consists of a single CSS primary cabinet. A System 90/85 consists, at minimum of two cabinets: a CSS Primary Cabinet and a CSS/XA I/O Expansion Cabinet. Peripheral Expansion Cabinets (PECs) may be added to any system if additional peripheral devices are to be added to the system. CSS/XA I/O Expansion cabinets may be added to either system for additional I/O capability.

- There may be only 1 CSS Primary Cabinet in a system
- There may be a maximum of 4 CSS/XA cabinets in a system
- There may be maximum of 6 Peripheral Expansion Cabinets in a system
- There may be a maximum of 7 cabinets of any type in a system



PRIMARY CABINET

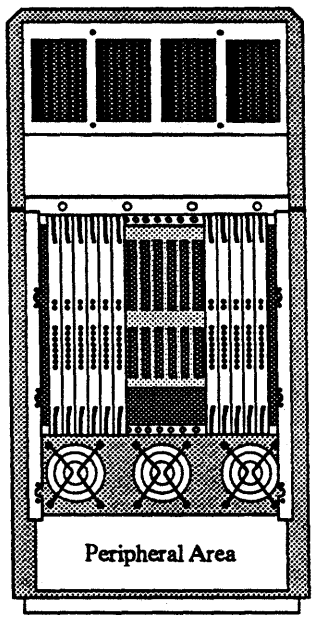


System90/45, System90/85
Primary Cabinet

- The SPM/RWI is always located in Slot 0
- The floppy disk is connected to the SPM and is used for diagnostics only
- Up to three full-height, six half-height or a combination of full- and half-height devices may be installed in the system using available built-in SCSI device mounting slots
- SCSI devices in built-in SCSI slots must be controlled by a SCSI Controller physically located in the system cabinet
- Each CSS/XA I/O Expansion Cabinet requires an IOM in the Primary Cabinet and an IOSBA in the Expansion Cabinet. Each of these boards requires one logic slot
- When adding PECs, cabling to the peripheral devices must be routed outward to the left or right from the system cabinet, never crossing the system cabinet
- ACE boards use only an I/O slot, a processor or memory may reside on the main logic side of the chassis opposite the ACE board
- The system boot device must be connected to an IOPM/DSDB located in the primary cabinet

CSS/XA I/O EXPANSION CABINET

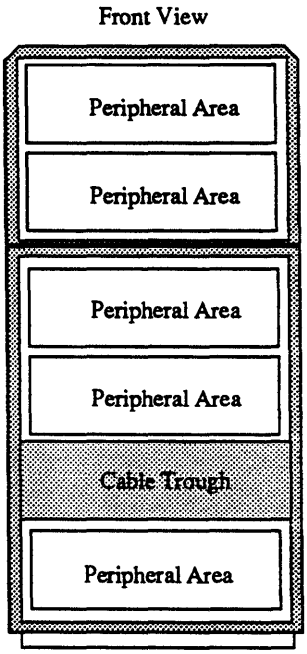
Front View



System90/85
CSS/XA I/O Expansion
Cabinet

- Up to four CSS/XA Expansion Cabinets may be installed in a System90/85 configuration. Cabinets must be adjacent to the CSS Primary Cabinet, with a maximum of two on either side.
- Adding a CSS/XA I/O Expansion Cabinet to a System90/45 converts it to a System90/85
- This cabinet used for input/output type modules only, no processors or memory are permitted
- Devices in built-in SCSI slots **must** be controlled by a SCSI Controller physically located in the CSS/XA Expansion Cabinet. Any full- or half-height 5-1/4 inch mounting SCSI device may be used (a maximum of four full-height, seven half-height, or any combination)
- SCSI devices in SCSI trays **may** be controlled by a SCSI Controller physically located in the CSS/XA I/O Expansion Cabinet or Primary cabinet
- The IOSBA board must be located in slot 15
- An IOM board must be installed in the Primary Cabinet for connection to each CSS/XA
- ACE boards use only an I/O slot

PERIPHERAL EXPANSION CABINET (PEC)



System90/45, /85
Peripheral Expansion
Cabinet

- Up to six PECs may be used in System90/45 and /85 configurations
- The cabinet contains 5 peripheral mounting areas
- SCSI Device Trays require one peripheral mounting area
- 9 Track Tape Drives require 2 adjacent peripheral mounting areas
- Up to two 9 Track Tape Drives per PEC

APPLICATION PROCESSORS AND MAIN MEMORY

- Processor Modules (all types) and Memory Modules must reside in the system chassis, they may not be located in an CSS/XA I/O Expansion cabinet.

- In a System90/25 the maximum number of 68020 Processor Modules (PM-020) is three
- In a System90/45 the maximum number of PM-020s is seven
- In a System90/85 the maximum number of PM-020s is eight

- In a System90/25 the maximum number of 68040 Dual Processor Modules (DPM-040) is one
- In a System90/45 the maximum number of DPM-040s is four
- In a System90/85 the maximum number of DPM-040s is four
- PM-020s and DPM-040s may not be intermixed in a system

- One Memory Module is mandatory for any system. However, a minimum of one Memory Module is recommended for every two PM-020 installed in the system. A minimum of two Memory Modules is recommended for each DPM-040 in a system.
- When configuring system with more than one Memory Module it is strongly recommended that all MMs be of the same capacity.

COMMUNICATIONS CONTROLLERS

Communications products consist of an I/O Processor Module (IOPM) plus a personality board. The IOPM portion of the product occupies a logic slot on the CSS or CSS/XA Bus. The personality board connects to the IOPM on the I/O side of the chassis.

The Asynchronous Communications Controller, usually referred to as IOPM/ACDB, is a 16 port asynchronous communications module that is expandable by using Asynchronous Communications Extenders (ACE). An IOPM/ACDB may be placed in a System90 System chassis or in a System90 CSS/XA I/O Expansion Cabinet chassis.

An ACE is used in two ways:

1. As a 16 asynchronous port extension for the System90/25 SPM/ACRW module. In this use, up to two ACE boards can be attached to the ACRW. This provides a maximum of 40 asynchronous lines without consuming any CSS logic slots or I/O board slots since the ACE modules are positioned in open space beside the logic slots. In many applications this eliminates the need for an Asynchronous Communications IOPM/ACDB module.

2. As a 16 asynchronous port extension for the Asynchronous Communications IOPM/ACDB. In this use, up to three ACE boards may be attached to the IOPM/ACDB. Each ACE connects to the ACDB or another ACE and requires one slot on the I/O side of the card cage. The logic board slot opposite an I/O slot filled with an ACE may be used for a processor or memory module.

The LAN/WAN Communications Controller, usually referred to as the IOPM/LWDB, provides a single IEEE 802.3 port and four synchronous WAN ports. There are several versions of the LAN/WAN Interface each with a different complement of WAN ports; 4 x RS-232 ports, 4 x RS-449 ports, 4 x V.35 ports or 3 x RS-232 ports and 1 x V.35 port.. An IOPM with any version of the LWDB installs in a System90 system chassis or CSS/XA I/O Expansion Cabinet chassis in the same manner as an Asynchronous Communications Controller (IOPM/ACDB) and requires one logic and one I/O slot. There are no extenders (such as an ACE) used with LAN/WAN Interfaces.

DISK/TAPE CONTROLLERS

Disk and tape devices used in the System90 systems are controlled by high performance IOPM-based SCSI Controllers (IOPM/DSDB). Although the SCSI Controller is capable of controlling seven devices on each of its two channels, there are device mounting capacity and other limitations involved in configuring each SCSI bus.

There are four different versions of the SCSI Controller. All are identical electrically and have the same functionality. There are three versions of the SCSI Controller for the System90/25 because of specific requirements involving cable connections and routing. The SCSI channels are been pre-configured to match the specific requirements of connectors and routing. Once selected, a SCSI Controller can be reconfigured at a later time to accommodate a system upgrade. A kit is offered to convert a channel for differential cabling outside the system enclosure.

The fourth version of the SCSI Controller is used with System90/45 and /85. With this version each of the two channels can be independently reconfigured. This controller does not come pre-cabled as all System90/45 and 90/85 SCSI connections are made within the system enclosure. The same conversion kit may be used with this controller for cabling outside of the system enclosure.

SCSI channels may be configured for either Single-Ended (SE) or Differential (DIFF) operation. Channels configured as SE are used for devices mounted in a 90/25 system cabinet or in the built-in SCSI device mounting slots in a 90/45 or 90/85. DIFF operation is required for SCSI Device Trays and 9-Track Tape drives.

SCSI channels are independent, therefore one channel may be connected to devices in one cabinet while the other is connected to devices in a different cabinet. NOTE: Cabling can not cross from an expansion cabinet on one side of a system cabinet to an expansion cabinet on the other side the system cabinet.

A SCSI channel configured for use within a cabinet cannot be daisy chained outside of the cabinet to take advantage of unused SCSI device IDs.

NOTE: In the System90/45 and /85 the system boot device, typically a fixed disk drive, must be connected to an IOPM/DSDB which is located on the CSS bus in the primary cabinet.

DISK and TAPE DEVICES

DISK

Devices mounted in a SCSI Tray or those in built-in SCSI mounting slots can be used for any media type, capacity or size mix (full- or half-height). The only exception to this rule is that the 2 rear mounted drives in a SCSI Tray must be full-height, fixed media disk drives.

Disks with removable media must be mounted in SCSI Tray front slots or built-in SCSI slots.

All 5-1/4 inch form factor SCSI devices require an appropriate mounting kit be separately specified on the order. The table below is a quick cross reference for device and related mounting kits.

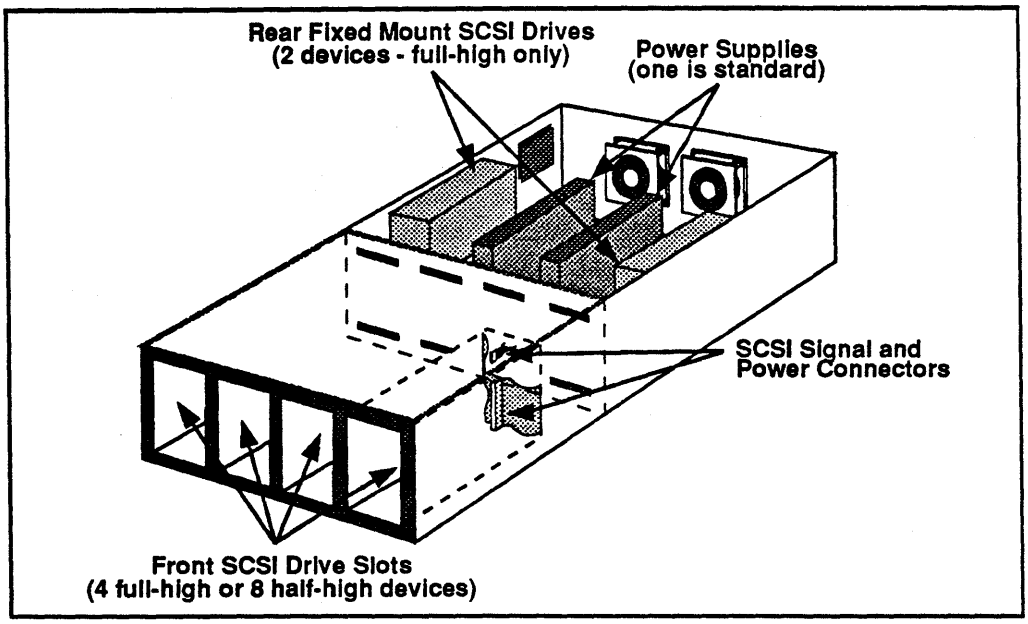
MAGNETIC TAPE

9-Track Magnetic Tape Drives are available for desk-top use and for mounting in a PEC. This means that a SCSI channel must be dedicated to the tape drive unless a SCSI Tray is also positioned in the same Peripheral Expansion Cabinet and the SCSI jumper cable is used to extend the SCSI channel to the tape drive.

150 MB Cartridge Magnetic Tape Drives and 8mm Helical Scan Drives may be added to either system cabinets or SCSI Device Trays. Each tape drive requires an appropriate mounting kit be separately specified on the order.

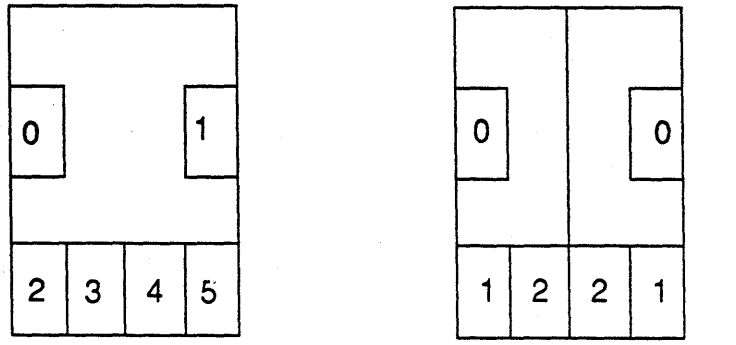
PRODUCT	DESCRIPTION	FORM	MEDIA	SYSTEM	SCSI SLOT	TRAY REAR	TRAY FRONT
DD-9380-70	380 MB Disk	FH	FIX	90/25 90/45, /85	DD-9000-70 DD-9000-59	DD-9000-52 DD-9000-52	DD-9000-53 DD-9000-53
DD-9760-70	760 MB Disk	FH	FIX	90/25 90/45, /85	DD-9000-70 DD-9000-59	DD-9000-52 DD-9000-52	DD-9000-53 DD-9000-53
OD-9652-70	Optical Disk - Erasable	FH	REM	90/25 90/45, /85	DD-9000-70 DD-9000-56	– –	DD-9000-53 DD-9000-53
OD-9786-70	WORM Drive/Controller	2 x HH	REM	90/25 90/45, /85	2x DD-9000-70 DD-9000-56	– –	DD-9000-55 DD-9000-55
CT-9150-70	150 MB Cartridge Tape	HH	REM	90/25 90/45, /85	DD-9000-70 DD-9000-56	– –	DD-9000-55 DD-9000-55
TD-9002-00	2 GB 8 mm Helical Scan Tape	FH	REM	90/25 90/45, /85	DD-9000-70 DD-9000-56	– –	DD-9000-53 DD-9000-53

SCSI DEVICE TRAY



A maximum of ten SCSI devices can be mounted in a SCSI Device Tray. Of these ten, the two rear-mounted devices will not be accessible and must be fixed media, full-height disk drives. Two rear mounted drives are **required** for each SCSI Tray.

The tray is normally configured so that all installed devices attach to one SCSI bus. The tray may be reconfigured for two bus operation so that half of the devices may be attached to one SCSI bus and half to another bus. This requires adding a DD-9000-95, SCSI Tray Second SCSI Bus Option. The figure below shows the default SCSI ID for each device location when installing full-height devices. If an arrangement other than those shown here is desired it must be shown in detail on the configuration sheets for the system.



SCSI Device Tray Default Device ID Locations

When ordering SCSI Trays that are for mounting in System90/45 Peripheral Expansion Cabinets or, cabinets other than the host for the SCSI Controller, be sure to list SCSI cable requirements separately on purchase orders. Each SCSI channel requires its own Cable Kit.

Each SCSI Tray contains a single power supply which is capable of powering a fully loaded tray. A SCSI Tray can be upgraded with an additional power supply for power redundancy purposes. This requires product DD-9000-91.

One SCSI Tray may be placed in the lower SCSI Tray peripheral mounting area of a System90/45 or /85 system cabinet.

There is no space to mount a SCSI Tray in a System90/25 system Cabinet.

The System90/45 and /85 Peripheral Expansion Cabinet will accommodate up to five SCSI Trays.

The System90/25 Peripheral Expansion Cabinet will accommodate up to three SCSI Trays.

A device mounting kit must be ordered for each device to be installed in a a tray.

System90/x5 BUS CONFIGURATION

After having chosen the features for a system it is necessary to physically locate them. The logic boards in a System90 reside on the CSS or CSS/XA bus. The following set of rules must be used to position boards on these busses to ensure proper system operation and performance.

System90 uses a CSS Bus Arbiter Board to provide arbitration for each CSS and CSS/XA bus. The arbiter allocates bus resources to requesters according to their priority. The priority of a requester is determined by the bus slot that it is installed in. Priorities are assigned to bus slots by the arbiter. The arbitration priorities assigned by the 8 and 16 slot arbiters are shown in the tables below.

When configuring a 90/25 (8 slots) slots 4 through 7 are considered HIGH priority slots and 0 through 3 are considered LOW priority slots.

Effective Priority	CSS Bus Slot(s)
Highest	7
	6
	5
	4
	3 and 0
Lowest	2 and 1

8-Slot Bus Arbiter Priority Assignments

When configuring a 90/45, 90/85 or CSS/XA Expansion (16 slots) Slots 8 through 15 are considered HIGH priority and 0 through 7 are LOW priority.

Effective Priority	CSS or CSS/XA Bus Slot(s)
Highest	15
	14
	13
	12
	11
	10
	9
	8
	7, 4, 3 and 0
Lowest	6, 5, 2 and 1

16-Slot Bus Arbiter Priority Assignments

Due to the priority schemes of the Arbiters and the nature of communications between the various boards there are some rules regarding the placement of boards onto the bus. Failure to follow these rules could, under certain conditions, cause serious system performance degradation or in the worst cases a system hang.

BASIC CONFIGURATION PRINCIPLES

The configuration rules for each system or cabinet type are based on the following principles:

1. Every system must have a Service Processor Module (SPM) paired with an ACRW (90/25) or RWI (90/45, /85), at least one Processor Module (PM), at least one Memory Module (MM) and at least one I/O Processor Module (IOPM) paired with a device board with at least one SCSI port.

2. 68020 Processor Modules (PM-020) and 68040 Dual Processor Modules (DPM-040) may not be intermixed in a system.

3. There should be one MM for every 2.0 to 2.5 PM-020s. A smaller ratio of MMs to PMs will result in measurable memory contention and reduced system performance.

4. There should be two MMs for every DPM-040. A smaller ratio of MMs to PMs will result in measurable memory contention and reduced system performance.

5. PMs, MMs and the SPM must be installed on the CSS bus. IOPMs may be installed on either the CSS or CSS/XA bus.

6. Modules are assigned to CSS or CSS/XA slots based on two criteria: maximizing performance and preventing module starvation. When these criteria conflict, the prevention of module starvation takes precedence.

7. As a general rule, module starvation is prevented by assigning modules that make the greatest demand on bus resources to the lowest priority slots and modules that make the least demand to the highest priority slots. Modules that make the same demand on bus resources should be assigned to slots with the same effective priority. Bus resources include the CSS or CSS/XA bus itself, the modules on the bus and the Interlocked (atomic) Sequence Lock.

8. The general rule is refined by also considering whether a module initiates demands on bus resources or whether it consumes bus resources only in response to commands from other modules. Responders are assigned to higher priority slots than initiators.

9. MMs must be assigned to HIGH priority CSS bus slots. They should be assigned the highest priority slots to minimize read response time and maximize read bandwidth.

10. I/O Modules (IOM) and IOPM based controllers, as a group, should be assigned to slots whose priority is less than that of slots occupied by MMs, but greater than that of slots occupied by PMs.

11. Command issuing modules (SPM, PM, IOPM) should be assigned to lower priority bus slots than MMs.

12. PMs can make the the greatest sustained demand on CSS bus resources and must be assigned to the lowest priority CSS bus slots.

13. All DPM-040s must have the same effective priority.

14. The SPM should be assigned to a slot with priority at least equal to that of the highest priority PM.

15. I/O Modules (IOM) must be assigned to HIGH priority slots.

16. IOPMs should be assigned to HIGH priority slots on a CSS bus.

17. The I/O Subsystem Bus Adapter (IOSBA) must have the highest priority on a CSS/XA bus.

18. The relative priority of the various IOPM based controllers is important on the CSS/XA bus as the effective bus bandwidth is limited by the I/O Link.

19. All rules for 16 slot CSS and CSS/XA busses assume the use of the 16/4 (16 slot, 4 pattern) bus arbiter. The older 16/2 arbiter is not considered here.

System90/25 CSS BUS CONFIGURATION RULES

1. The SPM/ACRW must be installed in slot 0 for cabling reasons.

2. A system may have a maximum of three PM-020s. These must be installed in slots 1,2 or 3. The first PM is installed in slot 1, the second in slot 2 and the third in slot 3.

3. A system may have a maximum of one DPM-040. It is installed in slot 1.

4. MMs must be installed in slots 4, 5 or 6.

5. IOPM/DSDB pairs that connect to internally mounted drives **must** be installed in slots 7 or 6 for cabling reasons. The first in slot 7, the second in slot 6.

6. IOPM/LWDB pairs must be installed in slots 4 or 5 and must be lower in priority than MMs.

7. IOPM/ACDB pairs must be installed in slots 3, 4, 5 or 6.

System90/45 CSS BUS CONFIGURATION RULES

1. The SPM/RWI must be installed in slot 0 for cabling reasons.

2. A system may have a maximum of 7 PM-020s. These must be installed in slots 1 though 7. The first and second are installed in slots 2 and 5, the third and fourth are installed in slots 1 and 6, the fifth and sixth in slots 3 and 4 and the seventh in slot seven.

3. The system may have a maximum of four DPM-040s. The first and second are installed in slots 2 and 5. The third and fourth are installed in slots 1 and 6.

4. MMs should be installed in the highest priority CSS Bus slots. The sole exception to this rule is that an IOPM/ACDB with one or more ACEs may be installed in a slot with higher priority than an MM. This allows the ACE(s) to use otherwise unused I/O slots behind the MMs.

5. IOPMs should be installed in slots 8 through 15.

6. IOPM/DSDB pairs should be installed in the highest priority slots below the MMs.

7. IOPM/LANWAN pairs should be installed at a priority below the IOPM/DSDB pairs.

8. IOPM/ACDB/ACE stacks should be installed a priority below the IOPM/LWDB pairs, with the exception noted in number 3, above.

9. The system boot-up device must be connected to an IOPM/DSDB located on the CSS bus.

System90/85 CSS BUS CONFIGURATION RULES

The rules for the 90/85 CSS bus are the same as those for the 90/45 with the following exceptions:

1. The MMs should be installed at the highest priority without exception.

2. A system may have up to eight PM-020s and those must installed in slots 1 through 8. PMs one through seven are installed in the same slots as in the 90/45, the eighth PM is installed in slot 8.

3. IOMs should be installed in slots with priorities between the MMs and any IOPM/DSDBs installed on the CSS bus.

4. All IOPM/ACDB pairs should be installed on a CSS/XA bus.

System90/85 CSS/XA BUS CONFIGURATION RULES

1. The I/O Subsystem Bus Adapter (IOSBA) must be installed in slot 15.

2. IOPM/ACDB pairs should be installed at higher priority than IOPM/LWDB pairs or IOPM/DSDB pairs.

3. IOPM/LWDB pairs should be installed at higher priority than IOPM/DSDB pairs.

SUMMARY

In general, the priority of boards on the CSS and CSS/XA busses can be summarized as follows:

Priority	CSS Bus Board
Highest	MM
	IOM
	IOPM/DSDB
	IOPM/LWDB
	IOPM/ACDB*
	SPM (slot 0)
Lowest	PM

* May be placed to take advantage of empty I/O slots by ACE boards for increased connectivity

Priority	CSS/XA Bus Board
Highest	IOSBA
	IOPM/ACDB
	IOPM/LWDB
Lowest	IOPM/DSDB

System90/25 POWER CONFIGURATION CHART

Feature	*Power Required*	*X*	*Number Installed*	=	*Feature Power*
Basic System	31.6	X	1	=	31.6
Boards:					
PM-20	13.5	X		=	
DPM-040	20.0	X		=	
MM	7.5	X		=	
IOPM/ACDB	13.5	X		=	
ACE	0.6	X		=	
IOPM/DSDB	18.5	X		=	
IOPM/LWDB RS-232	17.2	X		=	
IOPM/LWDB V.35	17.5	X		=	
IOPM/LWDB RS-449	18.1	X		=	
IOPM/LWDB Combo	17.4	X		=	
Storage Devices:					
5.25" Fixed Disk	2.5	X		=	
R/W Optical	2.0	X		=	
Helical Scan Tape	1.5	X		=	
Cartridge Tape	1.0	X		=	
TOTAL POWER					

Instructions:

1. Enter the total number of boards and other features installed in the cabinet in the Number Installed column.
2. Multiply the Number Installed by the Power Required and enter the result in the Feature Power column.
3. Add up the Feature Power column to obtain the Total Power. This number **must not** exceed 180.

Notes:

- The Basic System includes the system chassis, the SPM, the ACRW, the CSS Arbiter and one Cartridge Tape Drive.
- Boards and Storage Devices to be configured are only those which are powered by the main system power supply. SCSI Device Trays and 9-Track Tape drives contain their own power supplies and should not be considered in this configuration check.

System90/45, /85 CSS CABINET POWER CONFIGURATION CHART

Feature	*Power Required*	*X*	*Number Installed*	=	*Feature Power*
Basic System	34.4	X	1	=	34.4
Boards:					
PM-20	13.5	X		=	
DPM-040	20.0	X		=	
MM	7.5	X		=	
IOPM/ACDB	13.5	X		=	
ACE	0.6	X		=	
IOPM/DSDB	18.5	X		=	
IOPM/LWDB RS-232	17.2	X		=	
IOPM/LWDB V.35	17.5	X		=	
IOPM/LWDB RS-449	18.1	X		=	
IOPM/LWDB Combo	17.4	X		=	
IOM	16.0	X		=	
Storage Devices:					
5.25" Fixed Disk	2.5	X		=	
R/W Optical	2.0	X		=	
Helical Scan Tape	1.5	X		=	
Cartridge Tape	1.0	X		=	
TOTAL POWER					

Instructions:

1. Enter the total number of boards and other features installed in the cabinet in the Number Installed column.

2. Multiply the Number Installed by the Power Required and enter the result in the Feature Power column.

3. Add up the Feature Power column to obtain the Total Power. This number **must not** exceed 300.

Notes:

- The Basic System includes the system chassis, the SPM, the RWI, the CSS Arbiter and the Floppy Disk/Cartridge Tape Drive assembly.

- Boards and Storage Devices to be configured are only those which are powered by the main system power supply. SCSI Device Trays and 9-Track Tape drives contain their own power supplies and should not be considered in this configuration check.

- A separate Power Configuration Chart must be filled out for each cabinet in the system.

SYSTEM90 CSS/XA CABINET POWER CONFIGURATION CHART

Feature	*Power Required*	*X*	*Number Installed*	*=*	*Feature Power*
Basic System	13.5	X	1	=	13.5
Boards:					
IOSBA	11.0	X	1	=	11.0
IOPM/ACDB	13.5	X		=	
ACE	0.6	X		=	
IOPM/DSDB	18.5	X		=	
IOPM/LWDB RS-232	17.2	X		=	
IOPM/LWDB V.35	17.5	X		=	
IOPM/LWDB RS-449	18.1	X		=	
IOPM/LWDB Combo	17.4	X		=	
Storage Devices:					
5.25" Fixed Disk	2.5	X		=	
R/W Optical	2.0	X		=	
Helical Scan Tape	1.5	X		=	
Cartridge Tape	1.0	X		=	
TOTAL POWER					

Instructions:

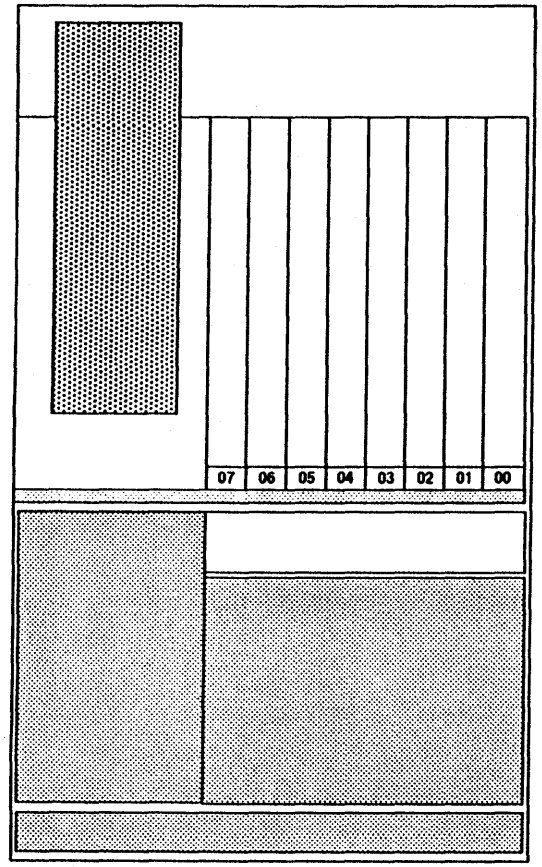
1. Enter the total number of boards and other features installed in the cabinet in the Number Installed column.
2. Multiply the Number Installed by the Power Required and enter the result in the Feature Power column.
3. Add up the Feature Power column to obtain the Total Power. This number **must not** exceed 300.

Notes:

- The Basic System includes the system chassis and the CSS Arbiter.
- Boards and Storage Devices to be configured are only those which are powered by the main system power supply. SCSI Device Trays and 9-Track Tape drives contain their own power supplies and should not be considered in this configuration check.
- A separate Power Configuration Chart must be filled out for each cabinet in the system.

ARIX SYSTEM90/25 SYSTEM CABINET/COMPONENT CONFIGURATION SHEET

CABINET DESIGNATION:



SYSTEM90/25 CABINET CONFIGURATION

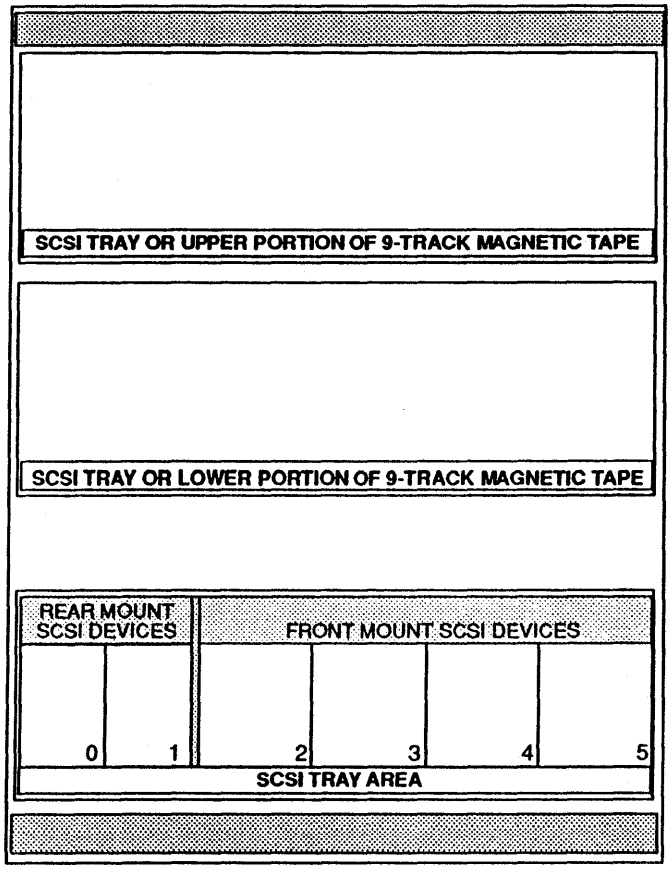
SYSTEM CABINET SCSI SLOTS

FRONT SCSI SLOTS	REAR SCSI SLOTS
■ 1/4 inch Ctg Tape Drive	

PRIMARY INPUT POWER REQUIREMENT

- ☐ 110 VAC U.S.
- ☐ 220 VAC (EUROPE)
- ☐ 220 VAC (UK)
- ☐ _____ VAC
- ☐ 60 Hz
- ☐ 50 Hz
- ☐ _____ Hz

CABINET DESIGNATION:



PERIPHERAL EXPANSION CABINET CONFIGURATION

CONFIGURATION NOTES:

CUSTOMER:	CUSTOMER P.O. NO.:	DATE PREP:	CONFIG REV:
FIELD CHECK BY:	FAC TECH SPT CHECK BY:	ARIX S.O. NO.:	SHEET OF SHEETS

ARIX SYSTEM90/45 AND /85 SYSTEM CABINET/COMPONENT CONFIGURATION SHEET

CABINET DESIGNATION:

4 | 3 | 2 | ■ 1/4 inch Ctg Tape Drive 1

BUILT-IN SCSI SLOTS

15 14 13 12 11 10 09 08 07 06 05 04 03 02 01 | Service Processor Module 00

REAR MOUNT SCSI DEVICES: 0 1

FRONT MOUNT SCSI DEVICES: 2 3 4 5

SCSI TRAY AREA

SYSTEM90/45 AND /85 CABINET CONFIGURATION

PRIMARY INPUT POWER REQUIREMENT

- ☐ 220 VAC U.S. — ☐ 60 Hz
- ☐ 220 VAC (EUROPE) — ☐ 50 Hz
- ☐ 220 VAC (UK) — ☐ _____ Hz
- ☐ _____ VAC

CABINET DESIGNATION:

4 | 3 | 2 | 1

BUILT-IN SCSI SLOTS

IOSBA (Link Adapter Board) 15 14 13 12 11 10 09 08 07 06 05 04 03 02 01 00

REAR MOUNT SCSI DEVICES: 0 1

FRONT MOUNT SCSI DEVICES: 2 3 4 5

SCSI TRAY AREA

CSS/XA EXPANSION CABINET CONFIGURATION

CONFIGURATION NOTES:

CUSTOMER: | CUSTOMER P.O. NO.: | DATE PREP: | CONFIG REV:

FIELD CHECK BY: | FAC TECH SPT CHECK BY: | ARIX S.O. NO.: | SHEET OF SHEETS

ARIX SYSTEM90/45 AND /85 PERIPHERAL EQUIPMENT CABINET CONFIGURATION SHEET

CABINET DESIGNATION:

SCSI TRAY OR UPPER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY OR LOWER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY OR UPPER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY OR LOWER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY AREA

PRIMARY INPUT POWER REQUIREMENT

- ☐ 220 VAC U.S.
- ☐ 220 VAC (EUROPE)
- ☐ 220 VAC (UK)
- ☐ _____ VAC
- ☐ 60 Hz
- ☐ 50 Hz
- ☐ _____ Hz

CABINET DESIGNATION:

SCSI TRAY OR UPPER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY OR LOWER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY OR UPPER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY OR LOWER PORTION OF 9-TRACK MAGNETIC TAPE

SCSI TRAY AREA

CONFIGURATION NOTES:

CUSTOMER:	CUSTOMER P.O. NO.:	DATE PREP:	CONFIG REV:
FIELD CHECK BY:	FAC TECH SPT CHECK BY:	ARIX S.O. NO.:	SHEET OF SHEETS