

Supply, Delivery and Installation of

new MACH 4002 Time Server

Routers and Computer Migration

Servers, HP Z400

Area of Applicability: **Camden Power Station**

Functional Area: **C&I Maintenance**

Supply, Delivery and Installation of new MACH 4002

Time Server Routers and Computer Migration

Servers, HP Z400

Unique Identifier: **229-T2780**

Revision: **1**

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1 Introduction

Camden Power Station requires the supplying, delivering, installing, testing, and configuring of the MACH 4002 Time Server Router capable of synchronizing time with all the servers on the T3000 System and the Migration Servers. This is to secure the highest-level skill, expertise, and experience to configure a critical system which is also sensitive since majority of the system is obsolete. The main objective of this service is therefore to outline the necessary supply and installation of existing plant/infrastructure required to ensure compliance to regulatory requirements, without changing the process or overall design of the plant.

2 Supporting Clauses

2.1 Scope

The technical duties and responsibilities which will be assumed by the successful

Contractor/Supplier regarding the Supply, Delivery and Installation of new MACH 4002 Time Server

Routers and Computer Migration Servers, HP Z400.

2.1.1 Objectives And Purpose

Purpose of this document is to define the roles, duties and responsibilities which must be assumed

and executed by the successful contractor when supplying, delivering, and installing the new MACH

4002 Time Server Routers and Computer Migration Servers, HP Z400 at Camden Power Station.

Sufficient detail is given concerning the duties and responsibilities and the processes which must be

followed when performing work under the contract. The routine, non-routine activities, and possible

emergency interventions which the Contractor may need to perform are given.

2.3 Definitions

Definition Description

Controlled disclosure Controlled disclosure to external parties (either enforced by law, or discretionary). System An integrated set of constituent pieces that are combined in an operational or support environment to accomplish a defined objective. These pieces include people, hardware, software, firmware, information, procedures, facilities, services, and other support facets.

2.5 Roles and Responsibilities

2.5.1 C&I Maintenance

Are the Custodians of the document, ensuring the accuracy, validity, and completeness of the document for the purpose of establishing the supply and delivery of items required. Provide input into the document's content and ensure that it meets practicability and maintainability requirements. Ensure that the appointed Contractor/Supplier performs work according to the technical, safety, health and environmental requirements described and implied in this document.

- Check whether the package includes all items mentioned in the material description.

- Check the individual parts for transport damage.

2.5.2 Safety Department

Amongst other duties, ensure that safety, health, environment, and quality considerations are present, clear, and conspicuous in the works information, i.e., scope.

2.6 Related/Supporting Documents

Not applicable.

3 Supply, Delivery and Installation of new MACH 4002 Time Server Routers and Computer Migration Servers, HP Z400 Scope of Work

The technical and administrative requirements for the Supply, Delivery and Installation of new MACH 4002 Time Server Routers and Computer Migration Servers, HP Z400 are detailed in this section.

3.1 MACH 4002 Time Server Routers

The modular, industry-compatible MACH 4002 Gigabit ETHERNET system is used as an industrial backbone system, and in applications with high data volumes, such as Video over IP (VOIP). The MACH 4002 is a modular, Camden Power Station compatible Gigabit ETHERNET system in a 19" chassis that is also suitable for use as Camden Power Station's backbone system.

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The MACH 4002 device is designed for the special requirements of Camden Power Station automation. These devices meet the relevant Business Unit standards, provide very high operational reliability, even under extreme conditions, and long-term reliability and flexibility. The power is supplied by a DC power unit at the back of the device. The switches and the power unit chassis are mounted in the 19" rack.

The HIPER-Ring redundancy concept enables you to quickly carry out a reconfiguration, and a simple configuration with only one additional connection. The diagnosis LEDs for displaying the operating parameters provides a quick overview. The MACH 4002 is composed of a Switch with media modules that are plugged into it. It allows you to construct switched ETHERNET networks that use copper wires in a ring topology. In Camden Power Station TP terminal devices are connected to the 10/100/1000 Mbit/s

ports of the media modules. The twisted pair ports support auto crossing, auto negotiation and autopolarity.

3.1.1 Assembly of MACH 4002 Time Server Routers.

The device has been developed for practical application in a harsh industrial environment.

Accordingly, the installation process has been kept simple. After the Tenderer has provided

assurance that the routers and servers comply with specifications given, done/performed by the end-user, it is required that on delivery, the device is ready for operation.

3.1.1.1 Unpack and Assemble the Media Modules

The end-user is to check whether the package was delivered complete. Check the individual parts for transport damage.

The device has four inputs for connecting media modules. If the full four media modules with 8 ports each are connected, then in addition to the ports of the Basic Board, you get a further 32 ports for connecting power unit segments. The modular design of the device allows you to easily expand the network yourself by installing the desired media modules. Media modules are assembled and disassembled during running operation (hot-swappable).

- Close the whole of the front surface beside the media modules with panels. This guarantees optimum shielding and convection. The slots for the media modules function identically.
- Remove the covering panel to insert the media module.
- Note the positions of the blue insertion catches.
- Insert the media module almost as far as it will go into the desired slot.
- Make sure that there is a good connection between the multiple plugs of the media modules and the female multipoint of the system bus.
- Insert the media module as far as it will go into the desired slot by closing the blue insertion catches.
- Screw the two knurled screws in the front panel of the media module flush with the frame of the chassis.

3.1.2 Install the device and ground the Router

a) You must assemble the device in a 19" standard switch cabinet, where the following

requirements will be met:

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- The assembly location is accessible for maintenance and repair work.
- The LED display elements are clearly visible.

Twisted pair cables are at a sufficient distance from potential sources of electrical interference, such as power supply cables.

b) The device should be grounded via the power supply connections, before mounting the provided power supply unit on the back of the MACH4002 device.

c) Make sure that there is a good connection between the multiple plugs of the plug-in power unit and the female multipoint of the system bus.

d) Install the M4-Air plug-in fan unit: Make sure that there is a good connection between the multiple plugs of the plug-in fan unit and the female multipoint of the system bus.

e) Install Media modules: Make sure that there is a good connection between the multiple plugs of the media module and the female multipoint of the system bus.

f) Connect end devices and other segments to the device ports using twisted pair cables.

3.2 HP Z400 Workstation

The HP Z400 is Camden Power Station's baseline single-socket workstation in the Z series. The

Z400 uses Intel® Xeon® W3503 @ 2.40GHz 2.39GHz processors running on a motherboard equipped with Intel's X58 Express chipset. In Camden Power Station the Z400 is sized to fit into 19” racks, and there are rack mounting accessories available.

3.2.1 Setting up/Installing the workstation

- a) Ensure Proper Ventilation: proper ventilation for the system is important for workstation operation.
- b) Reduce the risk of electric shock or damage to the equipment, by not disabling the power cord grounding plug.
- c) Convert the workstation to a desktop configuration.
- d) Camden Power Station workstations have simultaneous display monitors, add the monitors with all graphic cards provided and connect the monitors.
- e) Identify all monitor connection requirements in Camden Power Station.
- f) Configure the monitors using Microsoft 64-bit operating system.

3.3 Bill of Material

Table 1: BOM

Description	Material/Additional Information	Part Number	Total
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Installed			
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(8 Units)			
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Required			
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HP Z400			
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Workstation			
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COMPUTER SERVER: 6DU1138-0BA00-			
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0JB1			
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58 10			
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UNIT TYPE: MIGRATION.

PROCESSOR CHIP TYPE: INTEL X58. MEMORY: 2 GB. HARD DRIVE: 500 GB. NETWORK CARD: ETHERNET. DRIVE: DVD-ROM. POWER SUPPLY: 220 VAC. PROCESSOR CLOCK SPEED: 2.4 GHZ. REFERENCE NO: HP Z400 WORKSTATION SERVER

MATERIAL NR:0614435

MACH4002

Router

MODULE

TYPE:SWITCH POWER SOURCE: 60V 1A APPLICATION: DCS; DIMENSIONS: 480 X 88 X 435 MM. MACH 4002-48GL3P 2 5