

System Specifications

48 Isolated serial channels configurable as RS232, RS422/485, or V23 modem
Up to 128 digital inputs (32 bits per module)
Up to 64 digital outputs (16 bits per module)
Dual redundancy
Inter processor link
Standalone or rack mounted
Dual processors
Utilises low-power, 3.3V components
Live insertion/extraction of modules

Key Customer Advantages

Compact unit
Ease of maintenance
All input/output statuses indicated
Auxiliary functions:
 Custom designed special interfaces
 Rugby radio clock module
 Axle counter restoration count module
 Secure memory module
 Equipment fault alarm

Optional Modules

Rugby radio clock
32-bit digital input module
16-bit digital output module
Axle counter restoration-count module
Secure memory module
Equipment fault alarm module

Specifications

Electrical

Dual 90 to 230 VAC power supplies
Maximum 200 W total

Operating Temperature

Minimum: -20°C
Maximum: +60°C

Dimensions

Height: 356 mm (8U)
Width: 483 mm
Depth: 335 mm

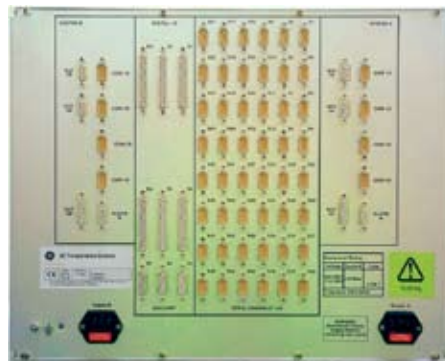
Weight

15 kg (fully fitted)

EMC

Compliant to EN50121-4

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Sapphire T48 Rear View



GE imagination at work

Modular Control System

System Configuration

The SapphireT48 holds the current dynamic state of the railway at all times by reading in data via inputs from the interlocking equipment and sending the changes of state to the workstations. Other control equipment and peripheral devices can connect to the SapphireT48.

System Operation

The workstations hold the static databases for all maps and devices and respond to a map call by the operator from data within the PC. Control commands, whether from the operator

or automatically generated, are sent to the control equipment and, after validation, on to the interlocking.

The MCS functions are carried out by proven software and with data preparation, in accordance with RT/E/S/10067. The SapphireT48 performs train-route setting, stepping, and train movement transmission according to a standard format.

Logging, archive and analysis, automatic route setting, and automatic code insertion functionality can be

connected to the SapphireT48.

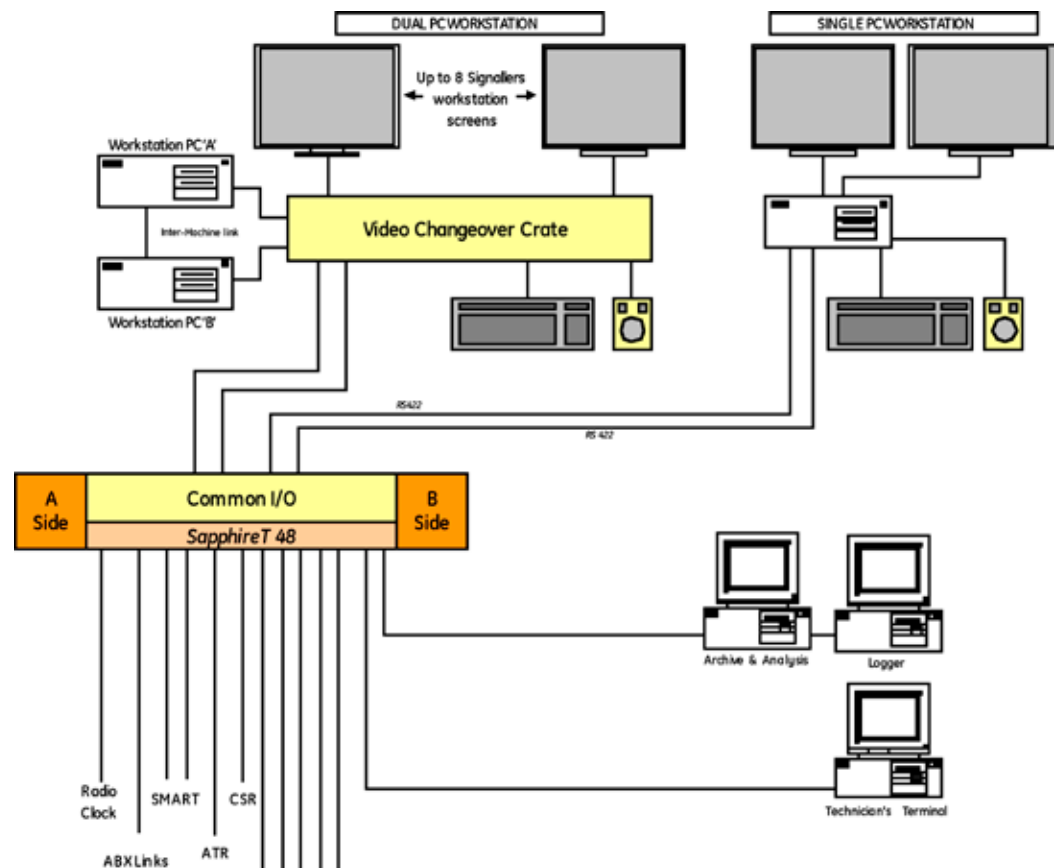
The flexible MCS enables additional control equipment and workstations to be added as required at a later date. Serial interfaces can be provided to external systems such as customer information, train reporting, and train radio systems.

Product Acceptance

The SapphireT48 MSC has Network Rail generic product acceptance, PA05/02232.



Modular Control System



Train Describer Systems

System Configuration

The Train Describer (TD) is connected to the railway signalling system. By monitoring the changes to the signalling system as trains move, the TD keeps track of the train and presents the information to signallers, control centres, station staff, train announcers and other personnel who need access to the information.

System Operation

The SapphireT48 TD provides details of the exact location of trains by showing which signal the train is approaching. When coupled with current time, a complete log of the progress of trains can be maintained. The Train Describer connects to other NR information systems like CIS and TOPS. It also provides important train movement

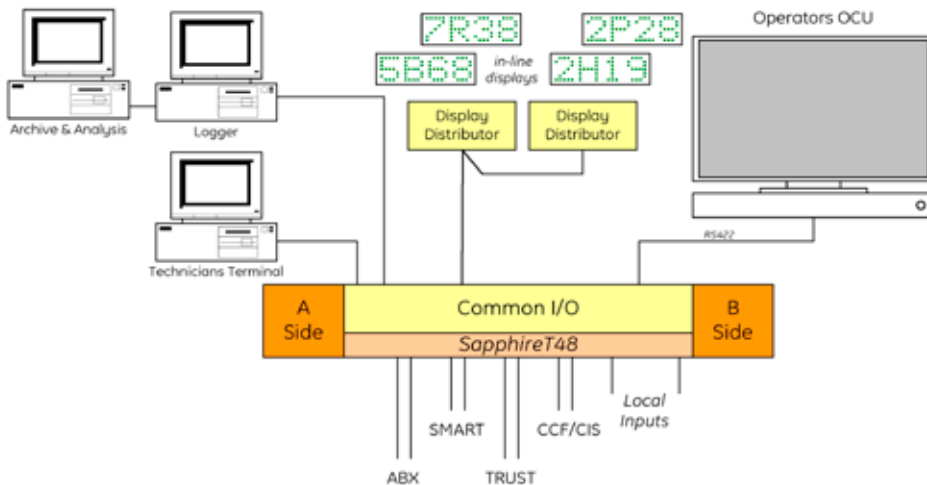
information for NR delay management.

- Operator Control Units (OCU) are provided as the operator interface.
- Display Distributors (DD) are provided to drive windows in the panel displaying train descriptions.
- TD has standard approved software with site-specific database.

Product Acceptance

The SapphireT48 TD has Network Rail generic product acceptance, PA05/02202.

Train Describer System



SpadAlert

System Configuration

SpadAlert detection and alert system is fully compliant with Network Rail Standard RT/E/S/11130 covering presentation to signallers of signal passed at danger (SPAD) events.

System Operation

When interfaced to an MCS, SapphireT48 SpadAlert receives state of railway information from the MCS and reports SPADS on the MCS Workstation. When interfaced to a TD, it receives state of railway information from the TD and reports SPAD to either a dedicated panel unit or signaller's operator control unit (OCU).

With the SapphireT48 SpadAlert, there is no extra stress on the MCS/TD. As significant extra data are required, this is kept separate. SpadAlert can be added to existing panel and VDU-based control centres.

Product Acceptance

The SapphireT48 SpadAlert has Network Rail generic product acceptance, PA05/01877.

SpadAlert System

