Appendix K

Redundant VM/SI 3000 Manual Changeover

In a redundant VM/SI–3000 installation, changeover should occur automatically in the event of a fault. To make the changeover manually, check the front panel “Active” LED to see which unit is active and which is in standby. To make the changeover, press the “Activate” button on the *standby* unit.

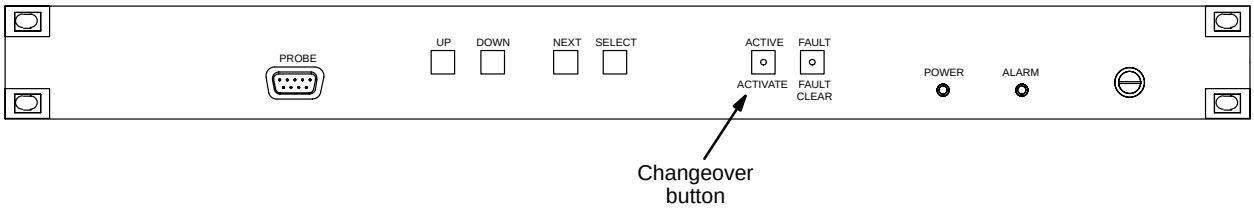

Figure K–1. *VM 3000 changeover button (SI 3000 is similar).*

Note 1: Only late–model VM 3000 Control Processors can be operated in redundant mode. Please contact Thomson for additional information.

Note 2: Automatic changeover is not available for the party line port or the VGA port.

Setting Up a System–Loaded VM/SI

(Redundant VM/SI installation was discussed on page 2–4.)

VM/SI 3000s can be installed as a redundant pair, so that failure of one unit will result in control being taken by the second. A third unit can be system–loaded and its address altered to provide redundancy in case one of the first two units fails. See Figure K–2.

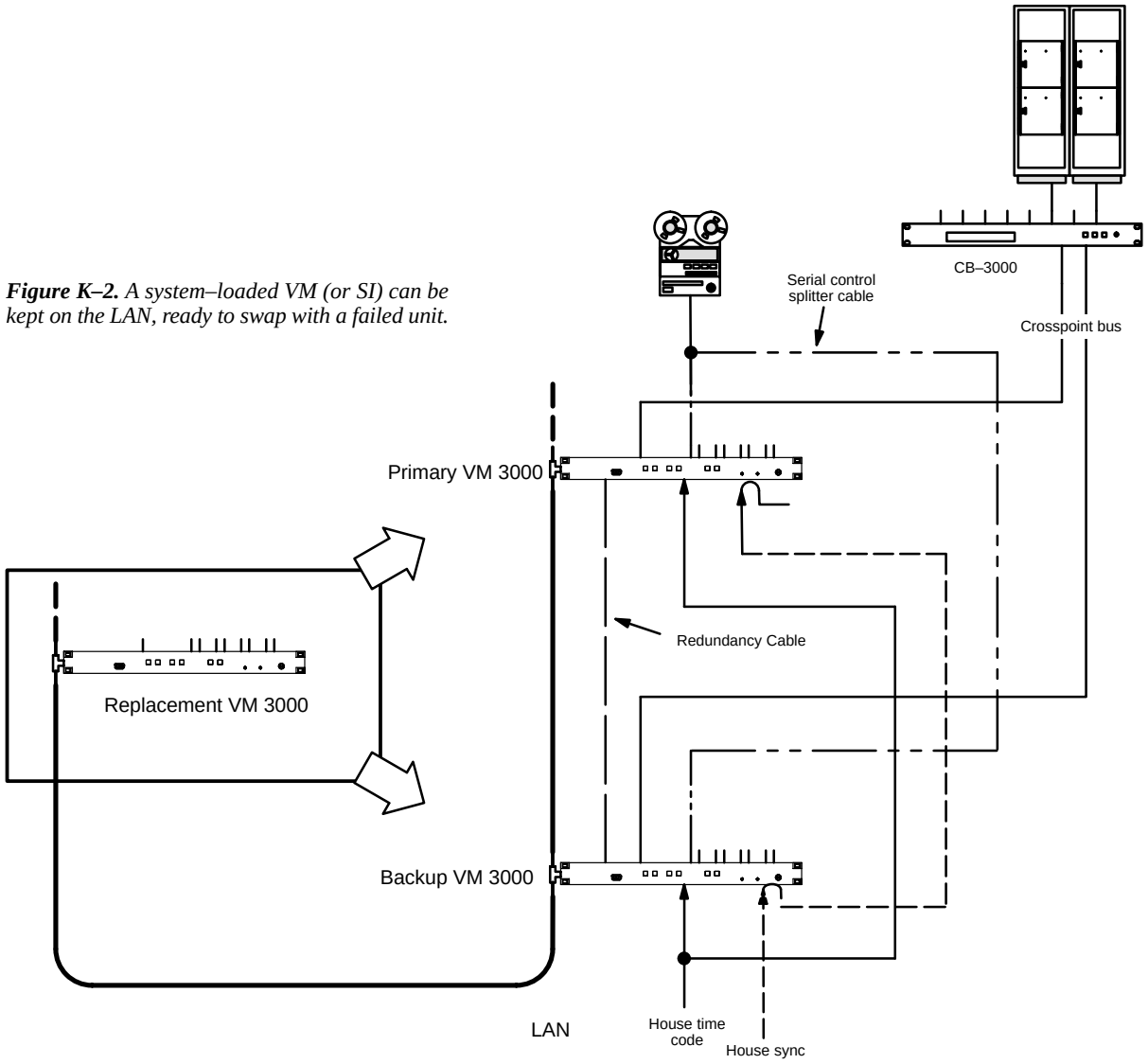

Figure K–2. *A system–loaded VM (or SI) can be kept on the LAN, ready to swap with a failed unit.*

Although a "blank" VM/SI 3000 controller could be used for this purpose, such a unit would require a ***complete system and configuration download*** after installation—during which time no switching or machine control commands could be issued. (It is **not** possible to download only to a new, unconfigured unit, because copies of address tables are kept in all controllers and these tables must remain identical.) To minimize potential disruption the following scheme is suggested:

1. Set the user–defined hardware addresses.

Each VM/SI has a unique PROM–stored hardware address that is normally entered on the Network Devices table. However, when rapid replacement of a failed unit is desired it is better to use user–defined addressing; this allows a replacement unit's address to be made identical to that of a failed unit and installed with a minimum of disruption to the system. User–defined addressing is accomplished using rotary DIP switches S2 and S3 (as discussed on page 2–46). For the "emergency replacement" application, Thomson suggests that these switches be set initially as follows:

	Switch S3	Switch S2	Resulting Address
Primary VM 3000	0	1	0080CEDEAD01
Backup VM 3000	0	2	0080CEDEAD02
Primary SI 3000	0	3	0080CEDEAD03
Backup SI 3000	0	4	0080CEDEAD04
Replacement VM 3000	1	1	0080CEDEAD11
Replacement SI 3000	1	2	0080CEDEAD12

Table K–3.

In the example system shown in Figure K–2, the primary VM would be set to "01," the backup VM to "02," and the replacement VM to "11." The "Resulting Address" shown in Table K–3 would be entered in the Network Description table. It's a good idea to clearly mark the addresses on the outside of the Primary and Backup units.

2. Pre–load the system software into the replacement VM/SI.

   "System–loading" means that the replacement unit always has a copy of the current system files. The easiest way to maintain this condition is to leave the unit on the LAN at all times. Whenever a new version of Jupiter software is downloaded to the Primary and Backup VM/SI units, the replacement unit will be updated automatically. This is the recommended procedure.

   It is also possible to connect the replacement unit to the LAN only long enough to receive new system software and then place it in storage (i.e., powered down and disconnected). The unit's flash memory is designed to retain the system software without external power for many years.

Replacing a Failed Unit

A fault condition should be indicated by a red fault light on the front panel, or, in the case of a failed power supply, no lamps illuminated. Control should have switched to the other VM/SI by this point. Check that it has by looking for the green Active lamp. Then proceed as follows:

1. De–power the faulty VM.

   De–powering a VM should automatically cause a switch to the other working unit within about 15 seconds.

2. Disconnect the faulty unit, noting cable positions.

   Note 1: When removing the LAN cable from the faulty unit, be sure to maintain LAN integrity and termination; i.e., check that the LAN cable is still connected to the working unit with a 50 Ohm terminator at each end.

Note 2: If only one crosspoint cable from the Venus exists, make sure it is connected to the good VM 3000. This will ensure that the switcher remains working. If you need to swap the crosspoint cable no switches will be processed whilst this is disconnected.

a. Determine if the faulty unit is the Primary or Backup VM/SI 3000.

If the chassis is not labelled, check the position of the rotary address switches, which are visible through the top cover (see page 2–46 and Table K–3).

3. Install the replacement VM/SI 3000.

a. Ensure that the replacement VM/SI 3000 now has an identical address to the faulty unit. Change the rotary DIP switches if necessary.

b. Re–connect the cables. Ensure that the LAN loop between units is connected and terminated. If only one crosspoint cable from the Venus is present, check that it is looped to both units.

c. Re–apply power to the replacement VM/SI 3000. Initially this unit will power up with the *Fault* and *Alarm* lamps illuminated. If the unit was system–loaded, it will immediately load the current configuration file (if not, it will first load the system file and then the configuration file). The other VM 3000 should remain active throughout this operation.

4. Confirm that the system is still operating normally by using a Jupiter control panel.

Ensure that the status of all crosspoints on the switcher is reported on the top line of the control panel.

5. **To verify that the replacement unit is ready for use:**

a. Swap control to the replacement VM/SI 3000 by pressing the Active button.

b. Confirm system operation.

c. Assuming all is well leave the Primary VM/SI in control of the system. The installation is now complete.

Should problems be experienced return control immediately to the existing VM/SI 3000. De–power the replacement VM/SI 3000 and check all cabling, especially the LAN cable and terminations. Should this fail to highlight the fault contact Thomson Technical Support.