



VISM Clocking

This appendix describes the options and procedures for correctly setting up the clocking on a VISM equipped MGX 8850 shelf.

VISM Clocking Options

VISM cards and MGX 8850 PXM cards each provide multiple clocking options. To avoid conflicts and to ensure proper operation, it is important that the settings for clocking options in both card types are considered together.

An overriding principle is that an MGX 8850 shelf consisting of PXM and VISM(s) cards should have ONE primary clocking source and ONLY ONE source.

A second principle is that at the VISM/MGX 8850 PXM interface there are two choices.

1. The MGX 8850 PXM card provides clock for all the VISM cards in the shelf.
2. One of the VISM cards on the shelf provides clock for the PXM (and hence the remainder of the entire shelf).

The user must choose either one or the other of these alternatives.

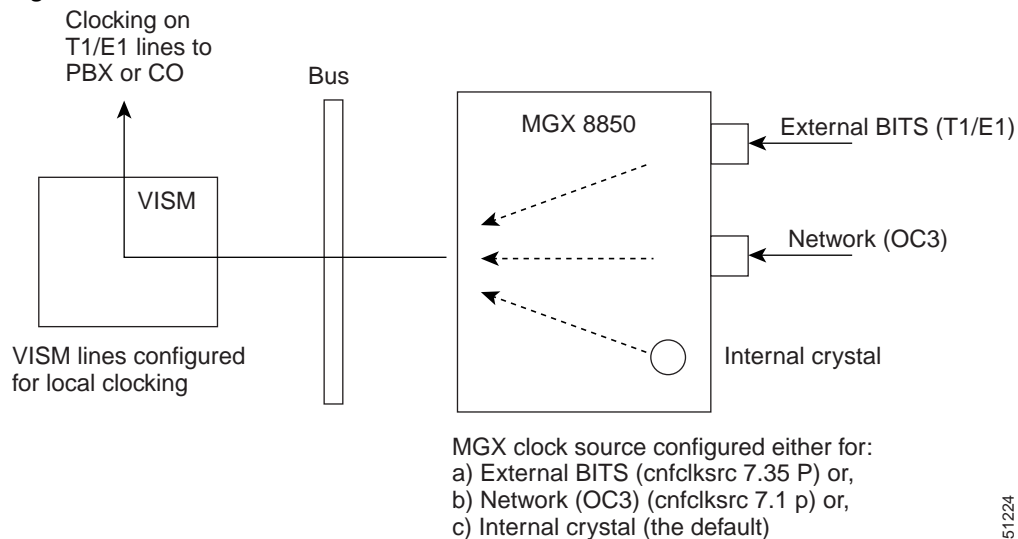
Figure 0-1

Figure 1. shows the first of these alternatives in which the clock source originates at the PXM side of the VISM/PXM interface. The source stems either from:

- An external BITS clock on the PXM's T1 or E1 backcard port, or
- An external OC3 signal on a PXM SONET backcard port, or
- The PXM's internal crystal.

The internal crystal is the default and is set as the primary clock source automatically at power on. If the user wants to use one of the other two clock sources, it can be done by executing the configure clock source (cnfclksrc) command.

Also, in this situation, the PXM becomes the clock source for the entire shelf and as such it uses its clock source to provide clocking for all the VISM card(s) in the shelf. The VISM card(s), in turn, use this clock to provide clocking for their T1 or E1 lines. For this situation to operate correctly, all the VISM lines must be configured for local clocking using the configure line (cnfln) command.

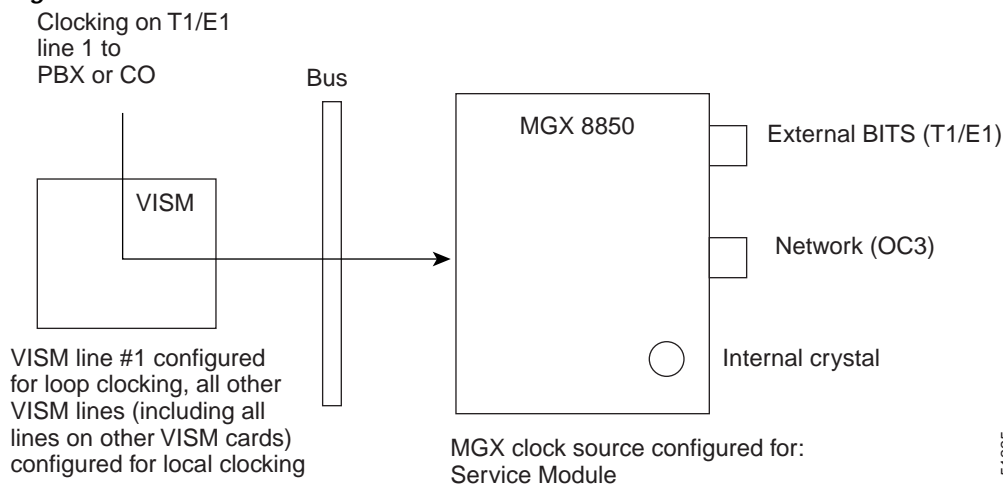
Figure 0-2

Figure 2. shows the second of these alternatives in which the clock source originates at the VISM side of the VISM/PXM interface. It stems from one of the T1 or E1 lines on one of the VISM cards (the line receiving the clock signal on the selected VISM card must be line number 1). The line number 1 that is

receiving the clock source must be configured for “loop” clocking using the configure line (cnfln) command. All the remaining T1 or E1 lines on all the VISM cards in the shelf must be configured for “local” clocking.

Also, in this situation, the VISM becomes the clock source for the PXM and hence the entire shelf including the remaining VISM cards. For this situation to operate correctly, the PXM must be configured for a “service module” as the clocking source with the selected VISM and its clock line specified in the cnfclksrc command.

Configuration Procedure

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- Step 1** Examine the entire configuration of the MGX 8850 shelf and determine the single clock source. The type of equipment connected to the VISM’s T1 or E1 lines may dictate this choice. If the selected clock source is from one the VISM’s T1 or E1 lines, that line must be connected to the physical port 1 on the VISM backcard.
- Step 2** Configure the clocking option on the PXM card using the configure clock source command. This command has the format:
- ```
cnfclksrc <slot,port><clktype>
```
- The slot.port parameter specifies the clock source and clktype parameter specified either “p” for primary, “s” for secondary, or “null” for no external clock source use the crystal.
- If the clock source is the external BITS clock (a T1 or E1 port on the PXM backcard), specify the configuration as:
 

```
cnfclksrc 7.35 p
```

Use slot 7 whether the PXM is in slot 7 or 8. The BITS port is always numbered port 35.
  - If the clock source is an external signal on one of the PXM OC3 ports, specify the configuration as:
 

```
cnfclksrc 7.n p
```

Use slot 7 whether the PXM is in slot 7 or 8. n is the OC3 port number in the range 1 - 4.
  - If the clock source is the PXM’s internal crystal and no other clock source has been specified, there is no need to configure the clock source as the crystal is the automatic default. If, however, another clock source is specified and you want to change to the crystal specify the configuration as:
 

```
cnfclksrc 7.X null
```

Use slot 7 whether the PXM is in slot 7 or 8. “X” is the either 35 or the OC3 port number depending upon which is the currently specified source. The “null” value cancels the previous configuration and returns the clocking source to the default crystal.
  - If the clock source is from the a line on a VISM card, specify the configuration as:
 

```
cnfclksrc Y.Z p
```

“Y” is the slot number of the VISM card and “Z” is the line number (which must be 1).
- Step 3** Configure the clocking option on the VISM card(s) using the configure line command. This command has the format:
- ```
cnfln <line_num> <line_code> <line_len> <clk_src> <line_type><loopback_detection>
```

All the parameters must be entered but for clocking purposes only the "line_num" and "clk_src" are relevant. The line number is the physical port number on the VISM backcard, the clock source can be specified as either loop clock or local. Loop clock is clocking from a T1 or E1 line, local clock is clocking from the PXM.

- a. If the clock source to VISM is from the PXM, all lines on all VISM cards must be configured as "local" using the cnfln command.
 - b. If the clock source is from the a line on a VISM card, specify that line (which must be line 1) as "loop clock" and configure all remaining lines on the VISM and all lines on all the other cards as "local".
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