2005 – 2008 United Medical Maintenance Services

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Engineering Publications

IPG Stage file GE 5X and LX MRi

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IPG_Stage file GE 5X and LX MRi

The IPG_Stage file, located in the directory /w/config, is used for troubleshooting and diagnostic purposes. This configuration allows you to disable hardware monitoring of peripherals that are monitored by the system cabinet TPS assembly. Below are descriptions of the variables that can be set in order to disable hardware monitoring

Disabling malfunctioning hardware can result in permanent damage. Exercise extreme care when disabling any hardware.

<u>How to access the file:</u>

Open a UNIX shell for LX systems; L1-B key for 5X and Horizon system

login: root
password: operator (For LX systems)

login:root
password:#bigguy (For 5X and Horizon systems)

cd /w/config <CR>
cp ipg_stage ipg_stage.old<CR> (Make a backup copy of the file)
vi ipg_stage <CR> (Edit the file using the VI editor)

Refer to the 5X/Horizon or LX IPG_Stage descriptions referenced below. Also refer to the VI editor publication for the VI Editor commands.

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GE Signa 5X IPG_Stage file:

In this example the system has been disable of monitoring the SCB and PAC system

aAB

A -> emulate PAC. This command causes the SPU to generate canned cardiac and respiratory waveforms and to generate cardiac triggers. This should be used when no PAC is present, or if no cardiac simulator is available.

B -> emulate SCB. This command disables monitoring of SCB switches. Commands are still sent to the SCB, so the alignment lights, fan, and bore lights will still work if the SCB is connected. However, the state of the PDU (PDU in overtemperature, stop, etc.), rf door, and cryogen monitor will not be checked.

C -> emulate GCP. This disables the SPI-GCP interface. If this is done the start scan, stop scan, pause scan, adv to scan, stop table buttons on the console will not work. Also, the scan time will not be displayed on the console, and the waveform displays will not work. This should be used to allow scanning to continue if the SPI-GCP link is not functioning correctly and cannot be immediately fixed.

D -> emulate T/R driver. When this is emulated, the SPI will not send commands to the T/R driver and dynamic disable board, and will not monitor its state. Therefore, scanning will be allowed no matter what the state of the board. This should never be done if RF is going through this board unless hardware jumpers have been used to set the board to the desired mode.

G -> emulate gradient amps. When this is emulated, the SPI will not send commands to the gradient amplifier, and will not monitor its state. Therefore, the gradient amps will stay in standby, and no gradient waveforms will be put out.

H -> emulate RF amp(s). When this is emulated, the SPI will not send commands to the rf amplifiers (ERBTEC narrow band and spectroscopy's ENI broad band), and SPI will not monitor their state. Therefore, the ERBTEC rf amp will stay in standby, and no rf will be put out. The ENI amp has no standby state, and therefore will put out rf, but the correct filter will not be set.

I -> emulate power monitor. This is meant to be used only on test systems where no power monitor is present. It disables SPI from sending out the proper power monitor settings selected by the PSD. If this is emulated

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when a power monitor is present, it will cause the power monitor to trip as soon as the scan/prescan begins. This will not fix rf amp 85 faults, but will instead cause them.

M -> emulate entire MDS. This disables communication to all devices on the MDS link. It is equivalent to emulating all of the following: gradient amps, rf amp, T/R driver, power monitor, and SCB, except that in this case the alignment lights, fan, and bore light will not work.

O -> disable reporting of gradient overloads. Normally, overloads of the gradient amplifier are reported to the error log. If this flag is set then overloads will not be reported. This has no effect on scan operation.

P -> emulate SPI - emulates the entire SPI and all devices connected to it (GCP, SRI, MDS link). This is only used for IPG software testing.

Q -> emulate the peripheral pulse signal from the PAC. This command causes the SPU to generate a canned plethysmograph waveform and to generate PP triggers. This should be used when no PAC is present, and only with the VX option.

R -> emulate SRI. This disables SPI communication to the SRI. It disables magnet shroud annunciators, the scan time display, and landmarking. The alignment lights, fan, and bore light will not work. However, if the SRI has had code downloaded at least once, then table positioning will still work.

S -> emulate bore wall temperature sensor. This is meant only for test systems which do not have a temperature sensor.

T -> emulate table. This emulates SRI cradle control. Therefore, the table positioning will not work. This eliminates the need to establish a landmark.

U -> emulate SPU. This was meant for IPG software testing only. If used, gating functions will not work.

W -> disable watchdogging. During normal operation, both the HPC and SPI are watchdogged, so that if they hang, or go crazy, that any scan in progress will be stopped, and the IPG will be reset.

X -> disable SRI errors. This allows SPI to send commands to the SRI, but any errors experienced by the SRI will be ignored, and scanning will be allowed to continue.

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Y -> disable gradient errors. This allows SPI to send commands to the gradient amplifier (standby, ready, etc.). However, the state of the gradient amps is not monitored. Any gradient error that occurs will not be reported or recovered.

Z -> enable watchdog debug mode. When watchdogging is enabled, this will cause IPG and SPI not to be reset if a watchdog occurs. This is meant to be used by software engineering to track down the source of the watchdog.

a -> dummy place holder

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GE Signa LX IPG_Stage file:

In this example, the TYME and IWS_PC have been disabled from monitoring.

aBC

A -> emulate PAC. This command causes the SPU to generate canned cardiac and respiratory waveforms and to generate cardiac triggers. This should be used when no PAC is present, or if no cardiac simulator is available.

B -> emulate TYME II. This command disables monitoring of TYME II switches. Commands are still sent to the TYME II, so the alignment lights, fan, and bore lights will still work if the TYME II is connected. However, the state of the PDU (PDU in overtemperature, stop, etc.), RF door, and cryogen monitor will not be checked.

C -> emulate IWS-PC. This disables the SPI to IWS-PC interface. If this is done the start scan, stop scan, pause scan, adv to scan, stop table buttons on the IWS keyboard will not work. Also, the scan time will not be displayed on the IWS-PC LCD, and the waveform displays will not work. This should be used to allow scanning to continue if the SPI to IWS-PC link is not functioning correctly.

D -> emulate T/R driver. When this is emulated, the SPI will not send commands to the T/R driver and dynamic disable board, and will not monitor its state. Therefore, scanning will be allowed no matter what the state of the board. This should never be done if pulsing with RF unless hardware jumpers have been used to set the board to the desired mode.

E -> emulate WHOLE-BODY gradient of TRM. The system will be restricted to direct connection to ZOOM gradient without the gradient switch.
Note: After removing this flag,
Restore Info in Guided Install must be performed.

F -> emulate ZOOM gradient of TRM. The system will be restricted to direct connection to WHOLE-BODY gradient without the gradient switch.
Note: After removing this flag,
Restore Info in Guided Install must be performed.

G -> emulate gradient amps. When this is emulated, the SPI will not send commands to the gradient amplifier, and will not monitor its state. Therefore, the gradient amps will stay in standby, and no gradient waveforms will be put out. On the 8645, 8651, and 8915 systems, The gradient configuration will still be downloaded. Real time monitoring will not be performed if enabled in the MRconfig.cfg file.
If the system has GRAM's, then digital tuning values will still be

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downloaded if digital tuning boards are selected in the MRconfig.cfg fil
e.
For 8651 and 8915 gradients digital tuning values will always be downloaded.

H -> emulate RF amp(s). When this is emulated, the SPI will not send commands to the RF amplifiers (ERBTEC narrow band and spectroscopy's ENI broad band), and SPI will not monitor their state. Therefore, the ERBTEC RF amp will stay in standby, and no RF will be put out. The ENI amp has no standby state, and therefore will put out RF, but the correct filter will not be set.

I -> emulate power monitor. This is meant to be used only on test systems where no power monitor is present. It disables SPI from sending out the proper power monitor settings selected by the PSD. If this is emulated when a power monitor is present, it will cause the power monitor to trip as soon as the scan/prescan begins. This will not fix RF amp 85 faults, but will instead cause them.

M -> emulate entire MDS. This disables communication to all devices on the MDS link. It is equivalent to emulating all of the following: gradient amps, RF amp, T/R driver, power monitor, and TYMEII , except that in this case the alignment lights, fan, and bore light will not work.

O -> disable reporting of gradient overloads. Normally, overloads of the Gradient Driver Subsystem are reported to the error log. If this flag is set then overloads will not be reported. This has no effect on scan operation.

Q -> emulate the peripheral pulse signal from the PAC. This command causes the SPU to generate a canned plethysmograph waveform and to generate PP triggers. This should be used when no PAC is present, and only with the VX option.

R -> emulate SRI. This disables SPI communication to the SRI. It disables magnet shroud annunciators, the scan time display, and landmarking. The alignment lights, fan, and bore light will not work. However, if the SRI has had code downloaded at least once, then table positioning will still work.

S -> emulate bore wall temperature sensor. This is meant only for test systems which do not have a temperature sensor.

T -> emulate table. This emulates SRI cradle control. Therefore, the table positioning will not work. This eliminates the need to establish a landmark.

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W -> disable watchdogging. During normal operation, both the HPC and SPI are watchdogged, so that if they hang, or go crazy, that any scan in progress will be stopped, and the IPG will be reset.

X -> disable SRI errors. This allows SPI to send commands to the SRI, but any errors experienced by the SRI will be ignored, and scanning will be allowed to continue.

Y -> disable gradient errors. This allows SPI to send commands to the gradient amplifier (standby, ready, etc.). However, the state of the gradient amps is not monitored. Any gradient error that occurs will not be reported or recovered. This feature is only valid with 8607 gradient amplifiers.

Z -> enable watchdog debug mode. When watchdogging is enabled, this will cause IPG and SPI not to be reset if a watchdog occurs. This is meant to be used by software engineering to track down the source of the watchdog.

a -> dummy place holder

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