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1. PRODUCTS AFFECTED

5601MSC+GP

2. OVERVIEW

This is to advise our customers of a required firmware upgrade for model 5601MSC series Master SPG/Master Clock System. This firmware upgrade addresses a condition where there may be a rare and intermittent timing adjustment in the sync outputs. As this can lead to an on-air event, Evertz **STRONGLY** requests that an upgrade is scheduled in a safe maintenance window as soon as one can be arranged.

Systems potentially affected will be referenced to Acutime GG GPS heads. This version of GPS head has been shipped since October 2013 and has a marking of “92626-00” on the product label.



The upgrade will take approximately 35-50 minutes per unit if the upgrade is performed serially. If FTP upgrade is used the upgrade will take 1 to 5 minutes.

3. REASON FOR UPGRADE

This firmware will resolve a potential issue that may arise when using a GPS signal as the timing reference. There may be a rare and intermittent timing adjustment in the sync outputs. Since there is potential to experience an on-air event, Evertz **STRONGLY** recommends that an upgrade is scheduled in a suitable maintenance window.

There is potential for a sudden phase shift on video outputs configured for fractional rates when locking to GPS. This could also affect LTC set to 23.98, 29.97 or 29.97 Fps rates in addition to DARS and AES outputs. When Time lock mode is set to “Always”, System time, LTC, VITC, burn in time PTP and NTP time could experience a sudden shift of 4 minutes; when Lock time is not set to “Always”, the unit may show a TIME JAM warning for 12 minutes & 30 seconds before it is corrected.

This reference issue has **not** been found to affect systems utilizing timing references other than GPS. However, units using other reference sources should also be upgraded to benefit from the enhancements available in this firmware release.

3.1. FEATURE ENHANCEMENTS AVAILABLE IN RELEASE 2.6 BUILD 6

The following enhancements have been added in this firmware release:

- SMPTE 12-2 available on all 4 TG outputs when in HD, 3G, or Dual Link modes.
- Corrected VistaLINK alarms
- Improved SNMP reliability
- Updated PTP to support BMC
- Improved logging

4. EVERTZ SERVICE CONTACT INFORMATION

If you have any questions or concerns, please contact Evertz Customer Service at:

Normal business hours: 905-335-7570

Emergency After-hours support: 905-407-7570

Email: service@evertz.com

5. FIRMWARE UPGRADE



- If you have not upgraded firmware for this model before, it is suggested that you contact Evertz Customer Service before proceeding with this upgrade. See Chapter 4 for contact information.
- The upgrade will take approximately 35-50 minutes per unit. This may be reduced to about 5 minutes if FTP is used. Please plan for an appropriate maintenance window.

5.1. OBTAINING THE FIRMWARE

Version 2.6 build 6 can be downloaded from:

<ftp://ftp.evertz.com/private/service/5601permanent>

5.2. UPGRADING THE FIRMWARE

5.2.1. Upgrade Overview

5.2.1.1. Upgrade overview with a non-redundant system:

If only one 5601MSC is in use, please refer to sections 5.2.2- 5.2.4 for the serial upgrade procedure.

5.2.1.2. Upgrade overview with a redundant system:

With a redundant system, please follow this procedure:

1. open the front door on the 5601ACO2 for access to the module-edge toggle switches

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2. set the 5601ACO2 CTL SEL switch to FP (front panel)
 3. set the 5601ACO2 CHG SEL to the current 5601MSC that is on-air(A-B for Primary or Secondary)
 4. switch the 5601ACO2 CHG OVER switch to MANUAL
 5. upgrade the off-line(Secondary) 5601MSC, please refer to section 5.2.2- 5.2.4
 6. once the Secondary 5601MSC comes up and is confirmed running OK(ref OK, Status->Lock Status menu indicates 'Locked'), manually switch the 5601ACO2 over to this Secondary unit. **
The ACO2 will switch all signals from Pri to Sec 5601MSC **
 7. upgrade the Primary 5601MSC
 8. once the Primary 5601MSC comes up, either manually switch the ACO2 to the Primary 5601MSC, or stay on the Secondary 5601MSC
 9. change the 5601ACO2 back to AUTO mode via CHG OVER switch

5.2.2. Starting the upgrade

There are two methods of doing upgrades. The serial transfer method ([Setting up for serial transfer](#)) or FTP ([FTP upgrade of application and test signals](#)).

5.2.3. Setting up for serial transfer

The firmware in the 5601MSC is contained on a FLASH EEPROM.

The following equipment is required in order to update the firmware:

- PC with available communications port. The communication speed is 115200 baud, therefore a PC with a COM port built into the motherboard is recommended.
- “Straight-thru” serial extension cable (DB9 female to DB9 male) or (DB25 female to DB9 male).
- Terminal program that is capable of XModem file transfer protocol such as HyperTerminal.
- New firmware supplied by Evertz.

Perform the following steps to establish communications with the 5601MSC:

1. Connect the serial cable to the COM DB9 connector on the rear of the 5601MSC.
2. Connect the other end of the serial cable to the RS-232 COM port on the PC.
3. Start the terminal program.
4. Configure the port settings of the terminal program as follows:

Baud	115200
Parity	no
Data bits	8
Stop bits	2
Flow Control	None

5. In the terminal program window, press the **ENTER** key several times and you should see a “>” prompt appear with each key press. This verifies that the PC is communicating properly with the 5601MSC.

5.2.4. Putting the 5601MSC into Upgrade Mode

1. Press the **GENERAL** button on the front panel to access the GENERAL menu. Press the **ESC** button until the root menu level is reached.
2. Scroll down to the *Firmware* menu item.
3. Press the **SELECT** button to enter the menu. Press **SELECT** again on *Upgrade*. You will have to press the **SELECT** button twice more to put the unit into upgrade mode.
4. Alternatively, at the “>” prompt, type “UPGRADE” and press enter.



CAUTION: While the 5601MSC is in upgrade mode, all time outputs will stop running (VITC, LTC) and the Ethernet ports will not function (SNMP, NTP). When the unit reboots after new firmware has been sent, all outputs will experience a shutdown for about 10 seconds. Be very sure that this will have no effect on your system before continuing with the upgrade procedure.

5.2.5. Uploading the Firmware

1. Once the unit has been placed into upgrade mode, the 5601MSC will print out an initialization message and ask for the firmware file to be uploaded. Below is an example:

```
EVERTZ MCF5474 MONITOR 1.0 BUILD 25 (266 MHZ)
COPYRIGHT 1997 - 2009 EVERTZ MICROSYSTEMS LTD.
28F256P30B FLASH DETECTED
BRD=5601MSC
MODEL=BA5601MSC-REVB
PROD=5601MSC
FRAME=5601FR

UPLOAD FILE NOW, CONTROL-X TO CANCEL
```

2. Send the 5601MSC_2v6b6.bin file using the XModem protocol (checksum mode). The file transfer will take about **35-50 minutes** depending on the speed of the PC.
3. When the transfer has completed, you should see a message stating "UPLOAD OK". If for some reason the transfer aborted or was cancelled accidentally you may see messages stating "UPLOAD FAILED" or "NO PROGRAM". In this case, enter the command "upgrade" and press enter. Press "Y" to upload flash and resend the firmware .bin file using XModem.
4. On a successful upload, the unit should reboot automatically. If it does not, either power-cycle the unit or enter the "boot" command. The unit will become operational after about 30 seconds and the front panel becomes active again.

5.2.6. FTP upgrade of application and test signals.

If the 5601MSC is currently running version 2.5 build 3 or greater, FTP may be used to upgrade the 5601MSC. If the firmware version is older than this, a stand alone loader may be used to load the application firmware (FTP upgrade of application using stand alone loader).

To use this feature from a DOS command or Unix console, enter *ftp IP*, where IP is the IP address of the 5601MSC. For example "ftp 192.168.192.175". When prompted to enter the user and password take the following steps: for *User*, press enter, and for *Password*, use the password of the 5601MSC. (Note: the default is "5601").

To send the application, the ftp must be enabled. To do this, enter *GENERAL -> Firmware -> Enable FTP*. This will enable sending files to the 5601MSC for 15 minutes.

The following are commands to work with the FTP feature: dir, send, get, delete.

To send a test signal enter *send filename filename*, for example *send ts1920smscHDq1.evt ts1920smscHDq1.evt*.

To send the application, enter *send filename*, where filename is the name of the file in the computer, for example "*send 5601MSC_2v6b6.bin*" (this is case sensitive). It is recommended to use the hash command if in DOS command, to show activity. It will take about 6 seconds to send the application. After it has been sent, enter *bye* to exit ftp.

At this time, the 5601MSC will store the downloaded file into its flash memory, and reboot. It will take about 3 minutes to store the application. During this time, **DO NOT TURN OFF THE POWER TO THE 5601MSC**. If power is interrupted, the code will have to be reloaded via the com port. Progress can be seen on the front panel.

Note that the 5601MSC will continue to operate normally with the exception that the front panel is not usable until the process is complete. When the process is complete, the unit will reboot.

5.2.7. FTP upgrade of application using stand alone loader.

Alternatively, there is a stand alone FTP loader. This is a short program that is loaded into the 5601MSC and then allows FTP to be used to load the firmware.

Load the ftp loader program using the serial port into the 5601MSC. This application, 5601ftp_1_0b2.bin, should be transferred using XModem file transfer protocol with a serial emulator such as HyperTerminal, or TerraTerm. See section Setting up for serial transfer. It will take only about 1 minute for this operation.

The 5601ftp_1_0b2.bin program does not operate as a Master Sync and Clock. It only does FTP upgrades.

The IP address of the 5601MSC can be set using the serial port. Enter ? to see the list of commands. Enter IP ? for help on setting the IP address. If the 5601MSC was previously set with static IP addresses, these addresses will be the default for this process.

To use this feature from a DOS command or Unix console, enter *ftp IP*, where IP is the IP address of the 5601MSC. For example "ftp 192.168.192.175". When prompted to enter the user and password, press enter.

The following are commands to work with the FTP feature: dir, send, get, delete.

To send the full firmware application file, enter *send filename*, where filename is the name of the file in the computer, for example "*send 5601MSC_2v6b6.bin*" (this is case sensitive). It is recommended to use the hash command if in DOS command, to show activity. It will take about 6 seconds to send the application. After it has been sent, enter *bye* to exit ftp.

This program cannot be used to send the test signal files. If that is required, after the unit reboots, then FTP will be available for sending test signal files using the method in FTP upgrade of application and test signals.

At this time, the 5601MSC will store the downloaded file into its flash memory, and reboot. It will take about 3 minutes to store the application. During this time, **DO NOT TURN OFF THE POWER TO THE 5601MSC**. If power is interrupted, the code will have to be reloaded via the com port. Progress can be seen on the terminal program running on the PC.