



**PRISM MPI2-10 and MPX2-10
Media Analysis Platform
Field Upgrade Instructions**

www.telestream.net

075-1136-00A

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Important compliance and safety information

United States of America Compliance Notices

Class A Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Safety

UL 61010-1: 2012 R4.16: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements.

Environmental

Perchlorate Materials: this product contains one or more type CR lithium batteries. According to the state of California, CR lithium batteries are classified as perchlorate materials and require special handling.

See www.dtsc.ca.gov/hazardouswaste/perchlorate for additional information.

Canada Compliance Notices

Department of Communications Radio Interference Regulations

This digital apparatus does not exceed the Class A limits for radio-noise emissions from a digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications. This Class A digital apparatus complies with Canadian ICES-003.

Reglement sur le brouillage radioelectrique du Quadstere des Communications

Cet appareil numerique respecte les limites de bruits radioelectriques visant les appareils numeriques de classe A prescrites dans le Reglement sur le brouillage radioelectrique du Quadstere des Communications du Canada. Cet appareil numerique de la Classe A est conforme a la norme NMB-003 du Canada.

Safety

CAN/CSA-22.2 NO. 61010-1-12 + Gil + G12:: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements.

Sécurité

CAN / CSA-22.2 NO. 61010-1-12 + Gil + G12 :: Exigences de sécurité pour l'électricité
Matériel de mesure, de contrôle et d'utilisation en laboratoire - Partie 1: Généralités
Exigences.

European Union and European Free Trade Association (EFTA) Compliance Notices

This equipment may be operated in the countries that comprise the member countries of the European Union and the European Free Trade Association. These countries, listed in the following paragraph, are referred to as The European Community throughout this document:

AUSTRIA, BELGIUM, BULGARIA, CYPRUS, CZECH REPUBLIC, DENMARK, ESTONIA, FINLAND, FRANCE, GERMANY, GREECE, HUNGARY, IRELAND, ITALY, LATVIA, LITHUANIA, LUXEMBOURG, MALTA, NETHERLANDS, POLAND, PORTUGAL, ROMANIA, SLOVAKIA, SLOVENIA, SPAIN, SWEDEN, UNITED KINGDOM, ICELAND, LICHTENSTEIN, NORWAY, SWITZERLAND

Declaration of Conformity

Marking by the “CE” symbol indicates compliance with the Essential Requirements of the EMC Directive of the European Union 2014/30/EU
This equipment meets the following conformance standards:

Safety

EN 61010-1: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
Low Voltage Directive 2014/35/EU

Emissions

EN 55032: 2012 + AC: 2013, CISPR 32: 2015, EN 61000-3-2: 2014,
EN 61000-3-3: 2013

Immunity

EN 55103-2: 2009, EN 61000-4-2: 2009,
EN 61000-4-3: 2006 + A1: 2008 + A2: 2010, EN 61000-4-4: 2004 + A1: 2010,
EN 61000-4-5: 2006, EN 61000-4-6: 2009, EN 61000-4-11: 2004
Environments: E2

Warnings



Warning! This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take appropriate

measures.



Achtung! Dieses ist ein Gerät der Funkstorgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.



Attention! Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

Notes:

1. For Compliance with the EMC standards listed here, high quality shielded interface cables should be used.
2. Emissions which exceed the levels required by this standard may occur when this equipment is connected to a test object.

Environmental Compliance

This section provides information about the environmental impact of the product.

Product end-of-life handling

Observe the following guidelines when recycling an instrument or component:

Equipment recycling

Production of this equipment required the extraction and use of natural resources. The equipment may contain substances that could be harmful to the environment or human health if improperly handled at the product's end of life. To avoid release of such substances into the environment and to reduce the use of natural resources, we encourage you to recycle this product in an appropriate system that will ensure that most of the materials are reused or recycled appropriately.



This symbol on the product or its packaging indicates that this product complies with the applicable European Union requirements according to Directives 2012/19/EU and 2006/66/EC on waste electrical and electronic - equipment (WEEE) and batteries.



It also indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste for recycling, please contact your local authority, or where you purchased your product.

Battery Recycling

This product may contain a rechargeable battery, which must be recycled or disposed of properly. Please properly dispose of or recycle the battery according to local government regulations.

Transporting Batteries or products with Batteries in them

The capacity of the lithium ion secondary battery shipped with this product is under 100 Wh. The lithium content of the installed primary battery is under 1 g. Each battery meets the applicable requirements of UN Manual of Tests and Criteria Part III Section 38.3. Battery quantity is under the limit for shipment according to Section II of the relevant

Packing Instructions from the IATA Dangerous Goods Regulations. Consult your air carrier for applicability and determination of any special lithium battery transportation requirements.

Restriction of Hazardous Substances

This product is classified as an industrial monitoring and control instrument, and is not required to comply with the substance restrictions of the RoHS 3 Directives 2011 /65/EU and EU 2015/863 until July 22, 2021. This product does, however, comply with the RoHS 2 Directive 2011/65/EU.

Korea Compliance Statement

| | |
|---|---|
| <p>A급 기기 (업무용 방송통신기자재)</p> <p>Class A (Broadcasting Communication Equipment for Office Use)</p> | <p>이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.</p> <p>As an electromagnetic wave equipment for office use (Class A), this equipment is intended to use in other than home area. Sellers or users need to take note of this.</p> |
|---|---|

Taiwan Compliance Statement

警告使用者：
 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

This is a Class A product based on the standard of the Bureau of Standards, Metrology and Inspection (BSMI) CNS 13438, Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Japan Compliance Statement

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

This is a Class A product based on the standard of the VCCI Council (VCCI 32: 2016). If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Important Safety Information

This manual contains information and warnings that must be followed by the user for safe operation and to keep the product in a safe condition.

To safely perform service on this product, see the Service safety summary that follows the General safety summary.

General Safety Summary

Use the product only as specified. Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. Carefully read all instructions. Retain these instructions for future reference.

Comply with local and national safety codes.

For correct and safe operation of the product, it is essential that you follow generally accepted safety procedures in addition to the safety precautions specified in this manual.

The product is designed to be used by trained personnel only.

Only qualified personnel who are aware of the hazards involved should remove the cover for repair, maintenance, or adjustment.

Before use, always check the product with a known source to be sure it is operating correctly.

While using this product, you may need to access other parts of a larger system. Read the safety sections of the other component manuals for warnings and cautions related to operating the system.

When incorporating this equipment into a system, the safety of that system is the responsibility of the assembler of the system.

To Avoid Fire or Personal Injury

Use proper power cord: Use only the power cord specified for this product and certified for the country of use. Do not use the provided power cord for other products.

Ground the product: This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded. Do not disable the power cord grounding connection.

Power disconnect: The power cord disconnects the product from the power source. See instructions for the location. Do not position the equipment so that it is difficult to operate the power cord; it must remain accessible to the user at all times to allow for quick disconnection if needed.

Observe all terminal ratings: To avoid fire or shock hazard, observe all rating and markings on the product. Consult the product manual for further ratings information before making connections to the product. Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

Do not operate without covers: Do not operate this product with covers or panels removed, or with the case open. Hazardous voltage exposure is possible.

Avoid exposed circuitry: Do not touch exposed connections and components when powered.

Do not operate with suspected failures: If you suspect that there is damage to this product, have it inspected by qualified service personnel.

Disable the product if it is damaged. Do not use the product if it is damaged or operates incorrectly. If in doubt about safety of the product, turn it off and disconnect the power cord. Clearly mark the product to prevent its further operation.

Before use, inspect voltage probes, test leads, and accessories for mechanical damage and replace when damaged. Do not use probes or test leads if they are damaged, if there is exposed metal, or if a wear indicator shows.

Examine the exterior of the product before you use it. Look for cracks or missing pieces.

Use only specified replacement parts.

Do not operate in wet/damp conditions: Be aware that condensation may occur if a unit is moved from a cold to a warm environment.

Do not operate in an explosive atmosphere.

Keep product surfaces clean and dry: Remove the input signals before you clean the product.

Provide proper ventilation: Refer to the manual's installation instructions for details on installing the product so it has proper ventilation.

Slots and openings are provided for ventilation and should never be covered or otherwise obstructed. Do not push objects into any of the openings.

Provide a safe working environment: Always place the product in a location convenient for viewing the display and indicators.

Be sure your work area meets applicable ergonomic standards. Consult with an ergonomics professional to avoid stress injuries.

Use only the Telestream rackmount hardware specified for this product.

Service Safety Summary

The Service safety summary section contains additional information required to safely perform service on the product. Only qualified personnel should perform service procedures. Read this Service safety summary and the General safety summary before performing any service procedures.

To avoid electric shock: Do not touch exposed connections.

Do not service alone: Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect power: To avoid electric shock, switch off the product power and disconnect the power cord from the mains power before removing any covers or panels, or opening the case for servicing.

Use care when servicing with power on: Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

Verify safety after repair: Always recheck ground continuity and mains dielectric strength after performing a repair.

Terms in the Manual

These terms may appear in this manual:



WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.



CAUTION. Caution statements identify conditions or practices that could result in damage to this product or other property.

Terms on the Product

These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

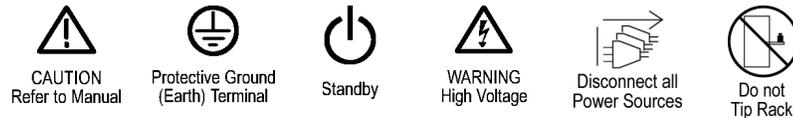
CAUTION indicates a hazard to property including the product.

Symbols on the Product



When this symbol is marked on the product, be sure to consult the manual to find out the nature of the potential hazards and any actions which have to be taken to avoid them. (This symbol may also be used to refer the user to ratings in the manual.)

The following symbol(s) may appear on the product:



General Safety Product Specific Statements

Use the product only as specified. Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. Carefully read all instructions. Retain these instructions for future reference.

Comply with local and national safety codes.

For correct and safe operation of the product, it is essential that you follow generally accepted safety procedures in addition to the safety precautions specified in this manual. The product is designed to be used by trained personnel only.

Only qualified personnel who are aware of the hazards involved should remove the cover for repair, maintenance, or adjustment.

Before use, always check the product with a known source to be sure it is operating correctly.

This product is not intended for detection of hazardous voltages.

Use personal protective equipment to prevent shock and arc blast injury where hazardous live conductors are exposed.

When incorporating this equipment into a system, the safety of that system is the responsibility of the assembler of the system.



WARNING. Dangerous voltages may be present. To prevent electrical shock, disconnect the power cord from the unit before starting the upgrade procedure. Failure to do so could cause serious injury or death.



CAUTION. Removing the power from the instrument during the upgrade process will corrupt the flash memory. If the flash memory is corrupted, the instrument will have to be sent to a Telestream factory service center to have the system firmware restored. **DO NOT** remove power from the instrument during the upgrade process.



CAUTION. Bending the Eye mezzanine board can damage the board or instrument. Avoid fully inserting the connectors until they are properly aligned; this prevents the bending of the board.



CAUTION. Many components within the instrument are susceptible to static discharge damage. To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.

Kit description

This document provides instructions for installing the Eye mezzanine board, upgrading the firmware, and updating software licenses. The kit applies to these instruments:

- PRISM MPI2-10 Media Analysis Platform
- PRISM MPX2-10 Media Analysis Platform

Supported upgrades

These hardware upgrades are supported by this document:

- **MPI2-10-UP PHY.** Add SDI Physical Layer Measurement Package to the MPI2-10 product; includes automated measurement of 12G/3G/HD/SD-SDI Eye pattern parameters, jitter parameters and jitter waveform display.
(Option MP2-FMT-4K required for 12G support)
- **MPX2-10-UP PHY.** Add SDI Physical Layer Measurement Package to the MPX2-10 product; includes automated measurement of 12G/3G/HD/SD-SDI Eye pattern parameters and jitter parameters and jitter waveform display.
(Option MP2-FMT-4K required for 12G support)

Kit parts list

Table 1 lists the parts that are supplied with the upgrade kit.

Table 1: Kit parts

| Quantity | Part Number | Description |
|----------|--------------------------|---|
| 1 | 878-1285-XX | ASSEMBLY, CIRCUIT BOARD, 12G EYE MEZZ, 3895134XX |
| 2 | 211-1117-XX | SCREW, MACHINE; 4-40 X 0.187, PAN HEAD, STEEL, ZINC FINISH, T-10, TORX DR |
| 1 | 129-1889-XX ¹ | SPACER POST .188 HEX X .325L BNC, MEZZ BOARD MOUNTING |
| 1 | 075-1136-00x | PRISM MPI2-10 AND MPX2-10 FIELD UPGRADE INSTRUCTIONS |

¹ The spacer post provided in the kit will not be needed for the MPI2-10 12G Eye board upgrade. The MPI2-10 Mixed Media board comes with a second spacer post installed

MPI2-10 hardware upgrades

These instructions are for the qualified, trained personnel or personnel familiar with servicing the product. Contact your nearest Telestream service center or factory service for installation assistance.



WARNING. *Dangerous voltages may be present. To prevent electrical shock, disconnect the power cord from the unit before starting the upgrade procedure. Failure to do so could cause serious injury or death.*



CAUTION. *Many components within the instrument are susceptible to static discharge damage. To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.*

Recommended tool list

Table 2: Recommended tool list

| Name | Description |
|-----------------------------|--|
| 9/16 inch socket nut driver | Used to removed BNC nuts. |
| Screwdriver handle | Accepts Torx-driver bits |
| T-10 TORX tip | Used for removing instrument screws. TORX-driver bit for T-10 size screw heads. |
| T-15 TORX tip | Used for removing instrument screws. TORX-driver bit for T-15 size screw heads. |
| Torque driver | Used to apply precisely a specific torque to a fastener. |

Upgrade the PRISM MPI2-10 Eye mezzanine board

Complete the following steps to remove the currently installed mezzanine board from the instrument and install the Eye mezzanine board:

1. Set the instrument so the bottom is down on a static-free work surface.
2. Remove the top cover as follows:
 - a. Use a TORX-driver with a T-10 TORX tip to remove the thirteen screws securing the cover to the instrument.
 - b. Slide the cover back and then lift it from the back to remove it from the instrument; set the cover aside.



1106-001

Figure 1: Remove the cover

- 3. Use the 9/16 inch socket nut driver to remove the two BNC nuts and lock washers (SDI IN 1 and 2).



Figure 2: Remove the BNC hardware

- 4. Using a TORX-driver with a T-10 TORX tip to remove the screw securing the BNC mezzanine board.

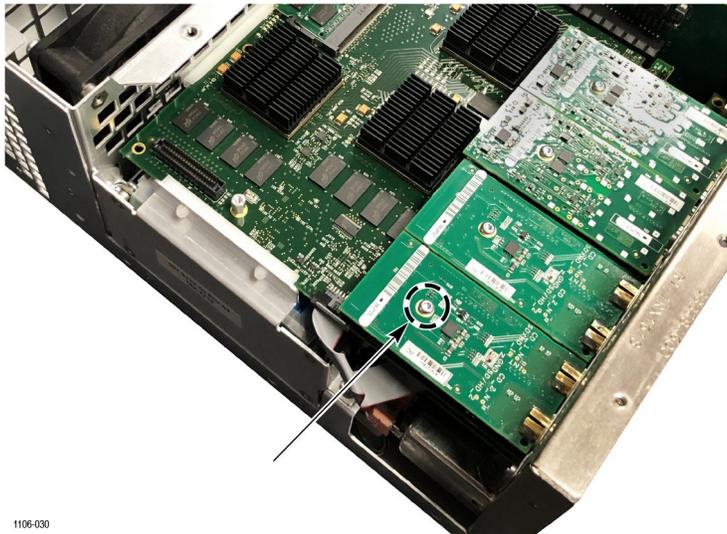


Figure 3: Remove the screw from the mezzanine board

5. Gently lift the back of the BNC mezzanine board from its connector and remove it from the Mixed Media board.



Figure 4: Remove mezzanine board from Mixed Media board

6. Locate the new Eye mezzanine board from the kit (part number 878-1285-XX).



Figure 5: Eye mezzanine board

7. Guide the BNC connectors through the bracket and line up the two board connectors with the connectors on the Mixed Media board.



CAUTION. *Bending the Eye mezzanine board can damage the board or instrument. Avoid fully inserting the back connector until the front connector is properly aligned; this prevents the bending of the board.*

8. Begin by engaging the connector near the BNCs. Do not fully insert.
9. Line up the connectors furthest away from the BNCs. Finish inserting the first connector.
10. Gently press the last connector into the Mixed Media board.

NOTE. *The MPI2-10 Mixed Media board comes with a second spacer post installed. The spacer post in the kit will not be needed during the upgrade process.*

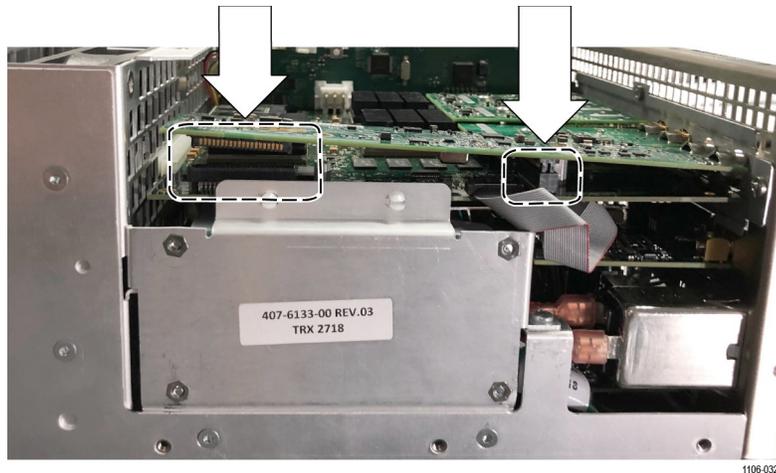


Figure 6: Connect the Eye mezzanine board

11. Use a TORX-driver with a T-10 TORX tip to install the two screws in the Eye mezzanine board. Tighten these screws to 0.6 N·m (5.31 in-lb).

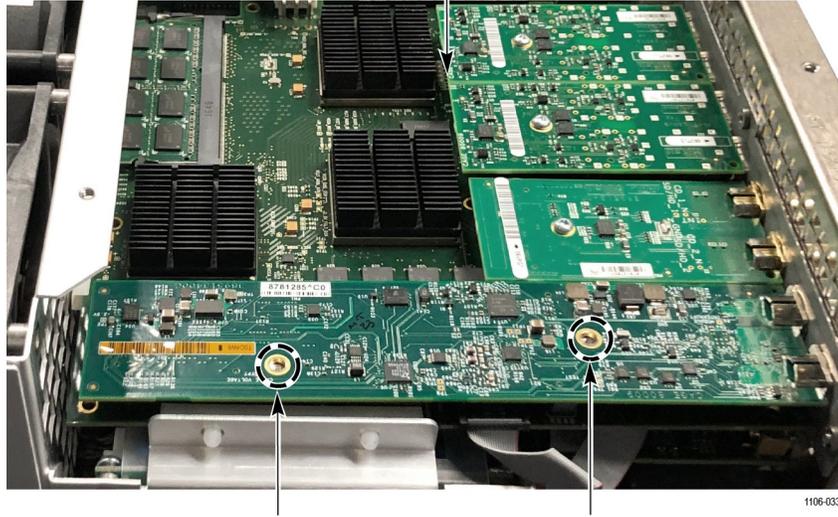


Figure 7: Secure the Eye mezzanine board

12. Replace the two BNC nuts and lock washers. Tighten the BNC nuts to 1.0 N·m (8.85 in-lb).
13. Place the top cover over the instrument and use the TORX-driver with a T-10 TORX tip to reinstall the screws. Tighten these screws to 0.9 N·m (7.97 in-lb).

14. Apply the MPI2-10-UP serial number label to the side panel (right side as viewed from the front of the instrument). Place the new serial number label below the labels that contain the regulatory marks.

NOTE. The MPI2-10-UP serial number label is included in the upgrade kit. The label lets Telestream service know that the instrument contains the upgrade kit.



Figure 8: Installing the MPI2-10-UP serial number label

15. Upgrade the instrument firmware. (See *Upgrade the instrument firmware.*)
16. Upgrade the software license. (See *Upgrade the software license.*)
17. Verify the upgrade. (See *Verify the hardware upgrade.*)

MPX2-10 hardware upgrades

These instructions are for personnel who are familiar with servicing the product. Contact your nearest Telestream service center or factory service for installation assistance.



WARNING. *Dangerous voltages may be present. To prevent electrical shock, disconnect the power cord from the unit before starting the upgrade procedure. Failure to do so could cause serious injury or death. This product does not provide the AC Mains power switch.*



CAUTION. *Many components within the instrument are susceptible to static discharge damage. To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.*

Recommended tool list

Table 3: Recommended tool list

| Name | Description |
|------------------------------|--|
| 3/16 inch socket nut driver | Used to remove jack screws. |
| 11/32 inch socket nut driver | Used to remove lock nuts. |
| BNC nut driver | Used to remove BNC nuts. |
| Screwdriver handle | Accepts Torx-driver bits |
| T-10 Torx tip | Used for removing instrument screws. Torx-driver bit for T-10 size screw heads. |
| Torque driver | Used to apply a precisely specific torque to a fastener. |

Upgrade the PRISM MPX2-10 Eye mezzanine board

Complete the following steps to remove the currently installed mezzanine board from the instrument and install the Eye mezzanine board:

1. Set the instrument so that the bottom is down on a static-free surface.
2. Remove the top cover as follows:
 - a. Use a TORX-driver with a T-10 TORX tip to remove the eighteen screws securing the cover to the instrument.
 - b. Lift the cover up to remove it from the instrument and set it aside.



Figure 9: Remove the top cover

3. Use the BNC nut driver to remove all five BNC nuts and lock washers.



Figure 10: Remove the rear panel plate hardware

4. Use a TORX-driver with a T-10 TORX tip to remove the four screws securing the rear panel plate to the instrument.



Figure 11: Remove the four rear panel plate screws

5. Pull the rear panel plate straight off the back panel.

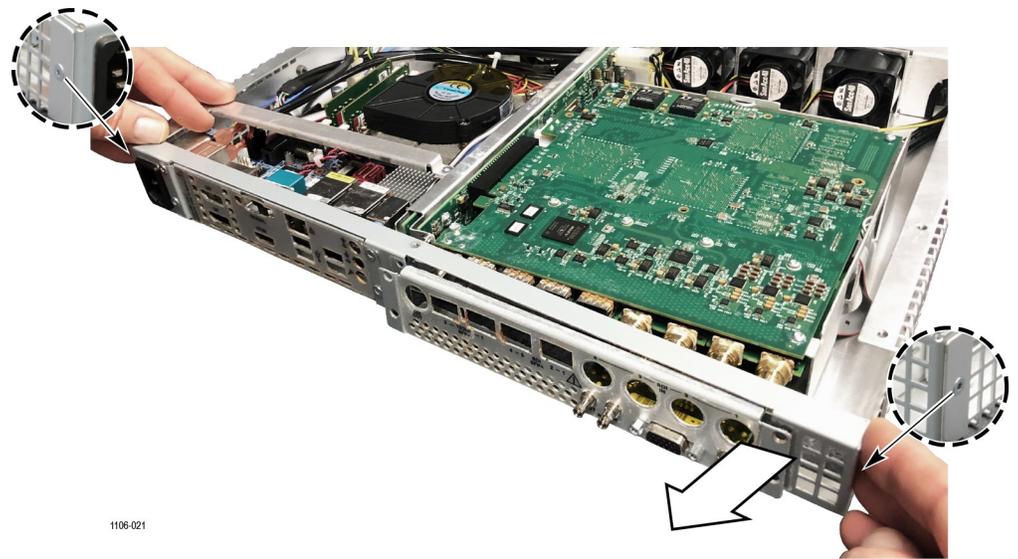
NOTE. *The GPIO board will keep the rear plate connected to the instrument.*



1106-020

Figure 12: Remove the rear panel plate

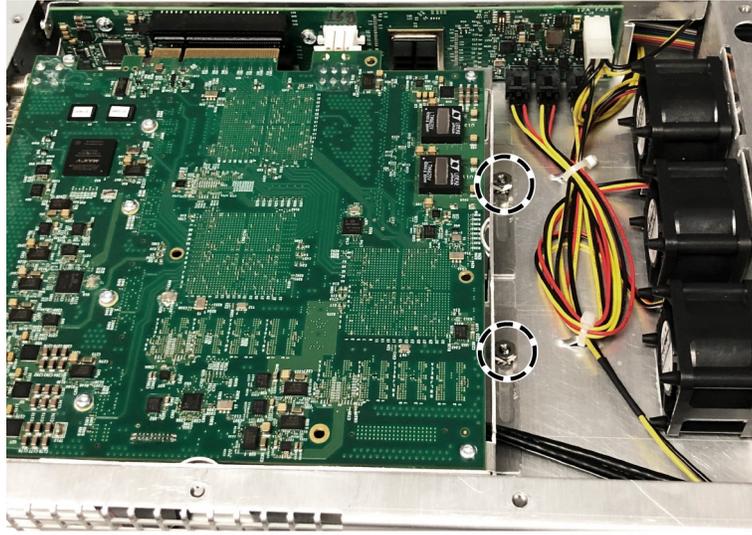
6. Use a TORX-driver with a T-10 TORX tip to remove the two screws on either end of the back panel.
7. Pull the right side of the back panel away from the instrument.



1106-021

Figure 13: Remove the back panel

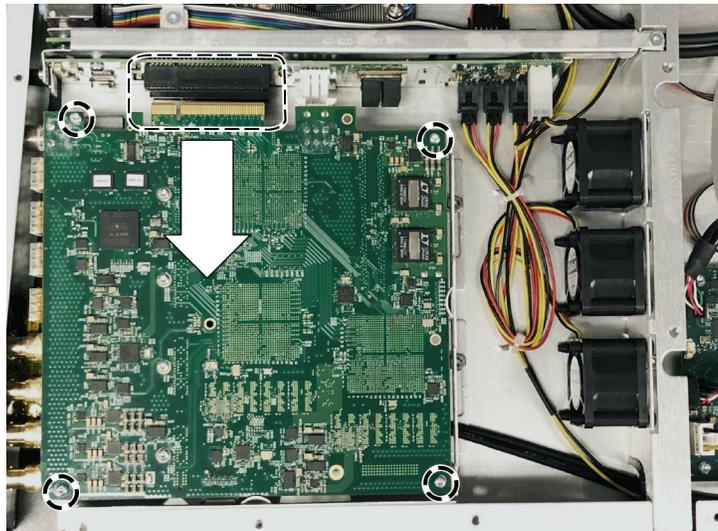
8. Use the 11/32 inch socket nut driver to loosen the two lock nuts on the side of the Mixed Media board module.



1106-022

Figure 14: Loosen the lock nuts securing the Mixed Media board module to the instrument

9. Slide the Mixed Media board and carrier frame away from the PCIe and power connector on the Slot Host board.
10. Use a TORX-driver with a T-10 TORX tip to remove the four screws on the corners of the Mixed Media board.



1106-023

Figure 15: Remove the Mixed Media board screws

11. Slide the Mixed Media board out from between the grinchies as shown in Figure 16.

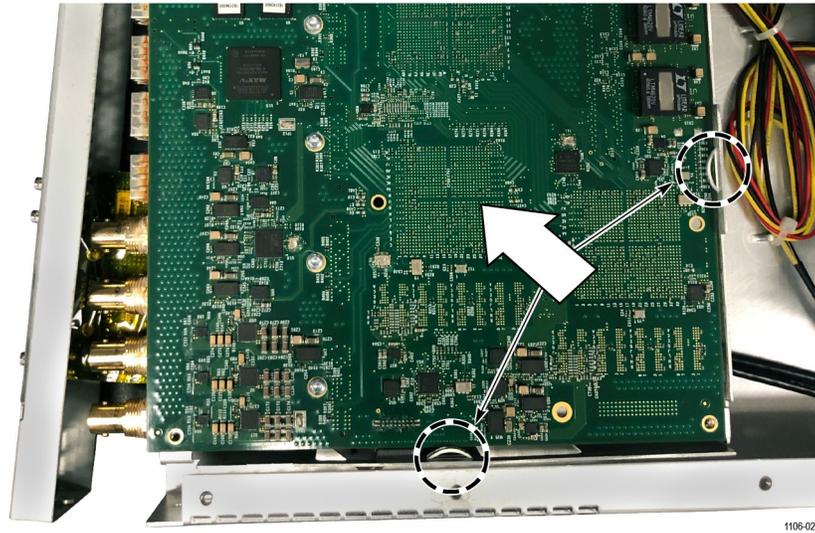


Figure 16: Remove the Mixed Media board from the grinchies

12. Turn the board over and disconnect the GPIO ribbon cable.



CAUTION. Make sure the back panel is pulled out enough to clear the BNC connectors on the Mixed Media module. Excessive pressure on the BNCs will cause damage to the connectors on the Mixed Media and mezzanine boards.

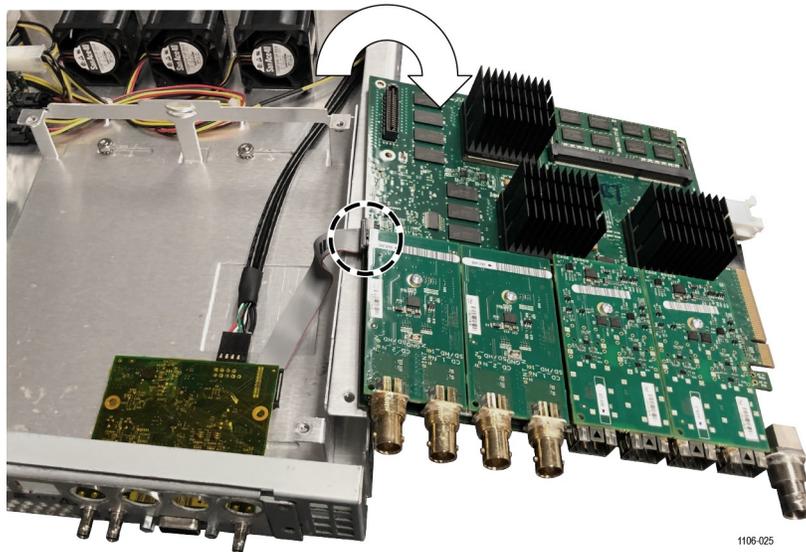


Figure 17: Remove Mixed Media board

13. Use a TORX-driver with a T-10 TORX tip to remove the screw from the mezzanine board shown below.
14. Remove the mezzanine board from the connector and set it aside.

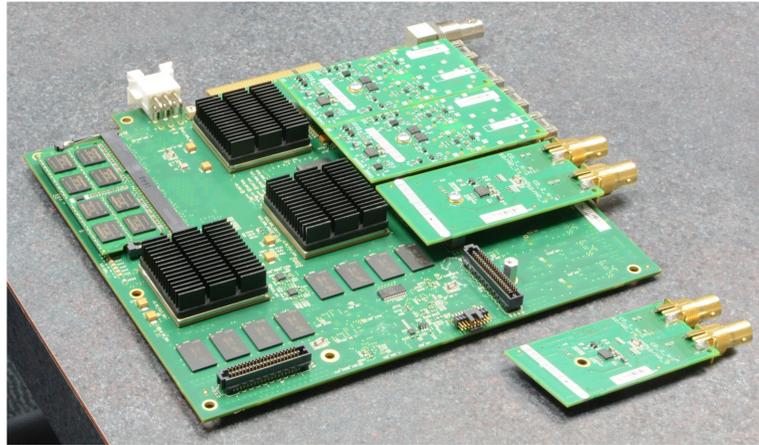


Figure 18: Remove the mezzanine board

15. Refer to Figure 19 and install the screw from the kit (part number 211-1117-XX) and the spacer post (part number 129-1889-XX) into the hole closest to second connector using the following method:
 - a. Insert the screw from the bottom of the board and use a finger to hold it in place.
 - b. Install the spacer post over the screw on the board, while keeping a finger on head of the screw; tighten the spacer post until tight.

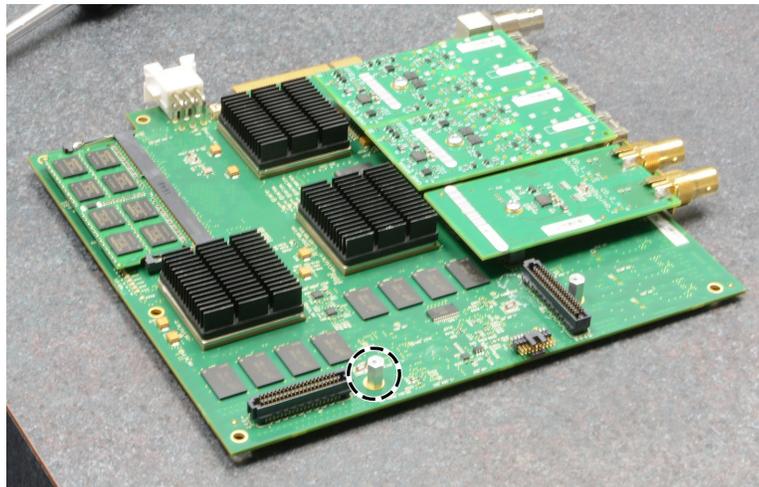
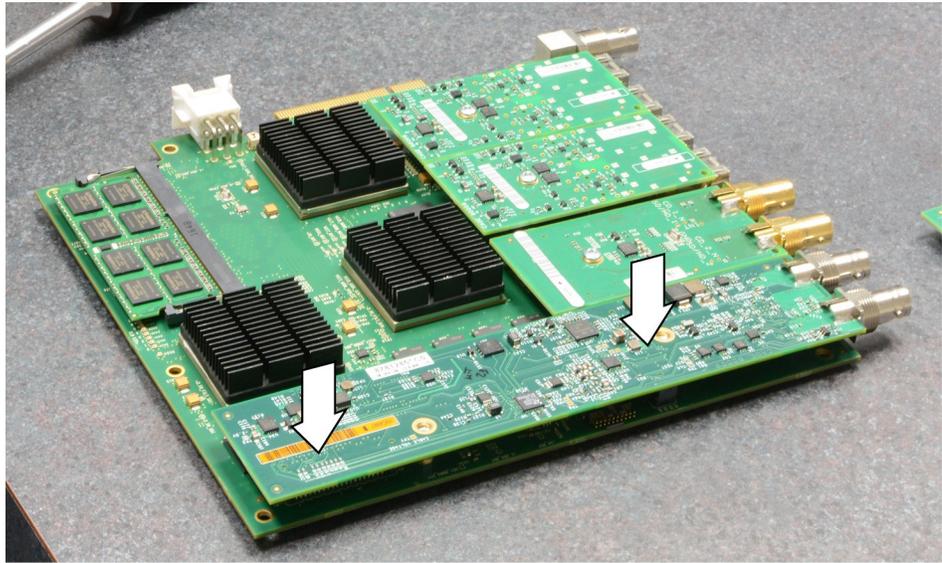


Figure 19: Install the spacer on the board

16. Locate the new Eye mezzanine board from the kit (part number 878-1285-XX).
17. Line up the Eye mezzanine board with both of the connectors and press down until it is fully engaged as show in Figure 20.



CAUTION. *Bending the Eye mezzanine board can damage the board or instrument. Avoid fully inserting the connectors until they are properly aligned; this prevents the bending of the board.*



1095-022

Figure 20: Install the Eye mezzanine board on the main board

18. Use the TORX-driver with a T-10 TORX tip to secure the Eye mezzanine board to the main board using the two screws provided in the kit. Tighten these screws to 0.6 N·m (5.31 in-lb).

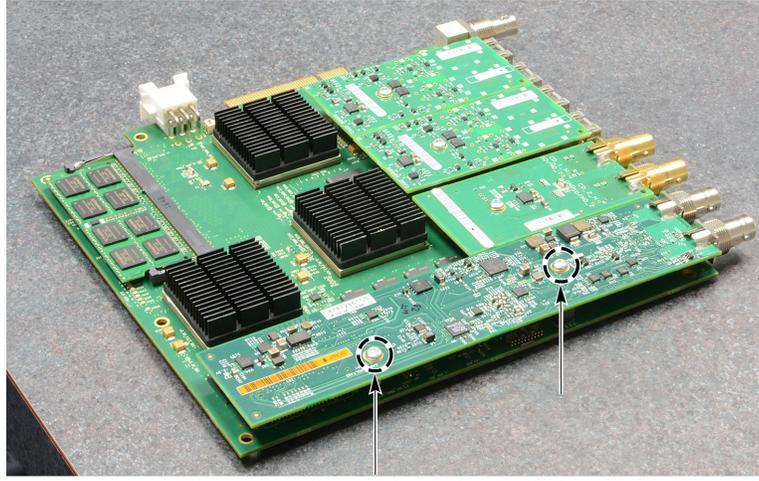


Figure 21: Attach the Eye mezzanine board

19. Perform steps 8 to 12 in reverse order to reinstall the Mixed Media board back into instrument. Tighten the four Mixed Media board bracket screws to 0.6 N·m (5.31 in-lb).
20. Secure the back panel to the instrument. Tighten two side screws to 0.9 N·m (7.97 in-lb).
21. Tighten the two lock nuts on the opposite side of the Mixed Media board to 0.9 N·m (7.97 in-lb).
22. Secure the rear panel plate. Tighten the four rear panel plate screws to 0.9 N·m (7.97 in-lb).
23. Reinstall the rear panel hardware. Tighten the five BNC nuts to 0.9 N·m (7.97 in-lb).
24. Place the cover over the instrument and replace the top cover screws. Tighten the cover screws to 0.9 N·m (7.97 in-lb).

25. Apply the MPX2-10-UP serial number label below the existing MPX serial number label on the bottom of the instrument.

NOTE. *The MPX2-10-UP serial number label is included in the upgrade kit. The label lets Telestream service know that the instrument contains the upgrade kit.*



Figure 22: Installing the MPX2-10-UP serial number label



CAUTION. *The MPX2-10-UP label is not inset and is at risk of damage. To avoid damaging the label, use caution when inserting or removing the instrument.*

26. Upgrade the instrument firmware. (See *Upgrade the instrument firmware.*)
27. Upgrade the software license. (See *Upgrade the software license.*)
28. Verify the upgrade. (See *Verify the hardware upgrade.*)

Upgrade the instrument firmware

Before you begin Telestream releases updates to product firmware to add new features or to fix reported problems. Check the Telestream website regularly for new firmware releases.

You do not need to perform a firmware upgrade if your instrument has the latest version of firmware already installed. To determine if the firmware on your instrument must be upgraded:

1. Power on the instrument.
2. Verify the current software version installed on the instrument:
 - a. Touch the **Settings** icon to open the Settings menu.
 - b. Touch **Utilities** icon to open the Utilities submenu.
 - c. Touch **Version** to open the Version display.
 - d. In the Software section, make a note of the version number installed on the instrument.

| | |
|------------------------------------|--|
| Instrument Firmware version number | |
|------------------------------------|--|

3. Verify the version of firmware at the Telestream website:
 - a. On a PC go to the Telestream website software page: www.telestream.net/video/resources.htm#Software
 - b. Click on the product and model title that best matches your instrument (such as PRISM) and in the list, find the software-upgrade package for your instrument.
 - c. Note the latest version number of the software-upgrade package(s).

| | |
|---------------------------------|--|
| Website Firmware version number | |
|---------------------------------|--|

4. If the firmware version at the website is newer than the version on your instrument, you should upgrade the firmware.
5. Click the Firmware Release version for your instrument to download the update.
6. Go to the [Firmware upgrade procedure](#).

NOTE. *The time required to complete the upgrade is about 15 minutes.*

If you want the details of what has changed in the release, download the Release Notes for the version.



CAUTION. *Removing the power from the instrument during the upgrade process will corrupt the flash memory. If the flash memory is corrupted, the instrument will have to be sent to a Telestream factory service center to have the system firmware restored. DO NOT remove power from the instrument during the upgrade process.*

NOTE. If power to the instrument is lost before it begins erasing the internal flash memory, restart the firmware upgrade after the instrument reboots.

Upgrade the Firmware

1. Copy the upgrade file with a .bin file extension from the upgrade package onto a USB memory device. You need approximately 1 GB of available space on the USB device.

NOTE. If the upgrade package included a readme.txt file, read the file before performing the upgrade. The file contains important information about the firmware release.

2. Insert the USB memory device into a USB port on the PRISM monitor.
3. On the PRISM monitor, select the **Settings** icon (⚙️) to open the Settings menu.
4. Select **Utilities** to open the Utilities submenu.
5. Select **Firmware Upgrade**. After the USB device has been scanned, the display lists all of the files on the USB device with a .bin file extension.
6. Select the file in the list, and then select **Install** to start the upgrade. (See **Error! Reference source not found..**)

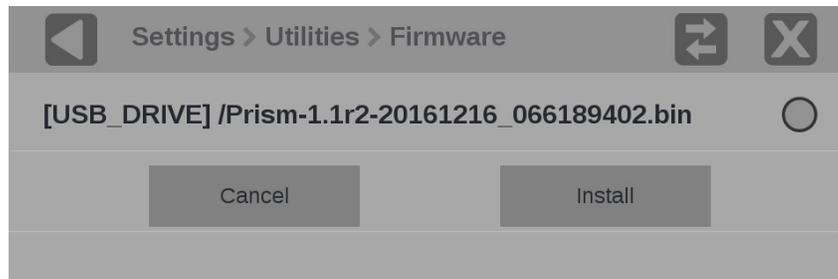


Figure 23: Selecting the firmware upgrade file

7. While the upgrade is in process, the message box shown in Figure 23 appears stating that the firmware installation is in progress.



CAUTION. Removing the USB device or powering off the instrument before the upgrade is complete can cause upgrade failure. To prevent upgrade failure, wait until the **Installation Complete** message box is displayed before performing these actions. The upgrade may take up to five minutes.

NOTE. The upgrade may take up to five minutes.

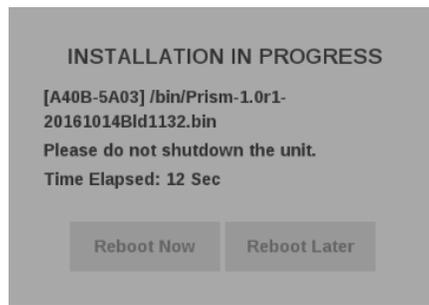


Figure 24: Upgrade Installation In-Progress message box

8. Remove the USB device from the PRISM monitor.

Verify the firmware upgrade

1. Select the **Settings** icon () to open the Settings menu.
2. Select **Utilities** to open the Utilities submenu.
3. Select **Version** to open the Version display.
4. Verify the displayed firmware version number matches the version of the firmware upgrade package you installed.

Upgrade the software license

A software license upgrade allows you to add optional software features to your instrument. Go to www.telestream.net for the latest list of features that can be licensed.

Install the software license upgrade

To activate your licenses your instrument must be accessible by another computer on your local network. Your instrument does not need to access the internet.

To activate your licenses:

1. Connect your PRISM instrument to a local network and turn on power.
2. After the instrument has booted, find the IP address: select **Settings**, then **Network**, and finally select the **STATUS** tab.
3. Copy the IP address of the instrument under the CONTROL IP PORT heading.
4. Open a web browser and enter in the address bar the instrument *IP address/licensePortal.html*, for example, *10.233.24.160/licensePortal.html*.
5. Use the instructions in the Telestream License Activation section at the top of the web page. It's only possible to activate one license at a time.

For further assistance, contact our technical support team:
www.telestream.net/telestream-support/video/support.htm

Verify the software license upgrade

1. Select the Settings icon () to open the Settings menu.
 2. Select **Utilities** to open the Utilities submenu.
 3. Select **Options** to open the Options display.
 4. Verify that the displayed option(s) match the option(s) you installed.
1. .

Verify the hardware upgrade

Table 4: Required equipment

| Test equipment | Requirements | Example |
|---|--|---------------------------------|
| Video test signal generator | HD 1080 59.94i ■ 100% color bars | TG8000 with SDI7 module |
| 75 Ω coaxial cables | RG-6 type coaxial cable with male 75 Ω BNC connectors, 1 to 2 m long, suitable for use to 6000 MHz. | 1694A. Part number 012-0159-01. |
| Computer monitor and cable (for use with MPX) | Any standard 1080-capable monitor with Display Port connector and cable. | |
| Mouse with USB interface (for use with MPX) | Any standard USB computer mouse | |

1. Apply power to the instrument.
2. MPX only: Connect the external display.
3. Connect the TG8000 SDI7 module output to the SDI 1 IN input on the PRISM monitor.
4. Set the SDI7 module to HD 1080 59.94i format using the following steps:
 - a. On the TG8000, push the front-panel **MODULE** button until the SDI7 module main menu appears.
 - b. Push the down (\blacktriangledown) arrow button to access the output mode menu.
 - c. Use the left (\blacktriangleleft) or right (\blacktriangleright) arrow button to scroll through the available output modes.
 - d. Select the HD output and push the **ENTER** button.

NOTE. *The dot will appear in front of the output mode on the display, to indicate that it is now the selected output mode.*

- e. To select the signal format, push the **FORMAT** button.
- f. Use the left (\blacktriangleleft) or right (\blacktriangleright) arrow button, or push the **FORMAT** button repeatedly, to select the 1080 59.94i signal format.

- g. Push the **ENTER** button to confirm the selection.

***NOTE.** The dot will appear at the left of the second line to indicate that the format was selected.*

- h. Push the **BACK** button to exit **FORMAT** mode.
5. Select the 100% Color Bars signal using the following steps:
- a. On the TG8000, push the front-panel **BARS** test signal button.
 - b. Use the left (◀) or right (▶) arrow button, or push the **BARS** test signal button repeatedly to select 100% Color Bars.

***NOTE.** 100% Color Bars is the factory default signal.*

6. Configure the SDI input using these steps:
- a. Touch the **Settings** icon (⚙️) to open the Settings menu.
 - b. Select **Inputs** to open the Inputs submenu.

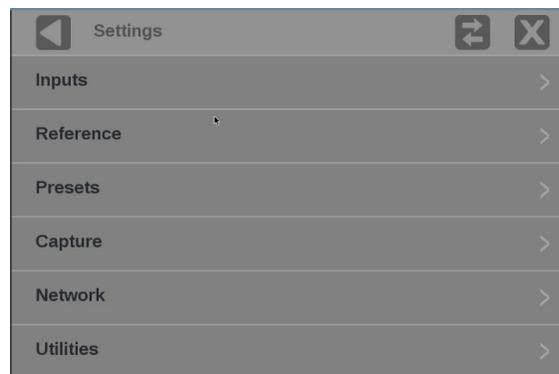


Figure 25: Settings menu

- c. Select an SDI input.

NOTE. In Figure 26 there are six virtual inputs to choose from. Inputs can be given any meaningful name.



Figure 26: Settings inputs submenu

- d. Select one of the four physical SDI inputs to monitor. The TG8000 SDI7 module output is connected to the SDI 1 input.



Figure 27: SDI signal configuration

- e. Select **Save** and close the menu.
7. Double-tap any tile to display it full screen.
 8. Press and hold anywhere on screen to display the application banner. Select Eye Pattern Display from the drop-down list.

9. Press and hold anywhere on screen to display the application banner. Touch the Tool icon and select Align from the Jitter HP Filter drop-down list.
10. Check for a stable eye diagram. Eye Amplitude and the actual wave shape depend on the generator signal. Eye Amplitude is typically 720 mV to 880 mV. Eye Risettime and Eye Falltime are typically 500 ps to 1500 ps.

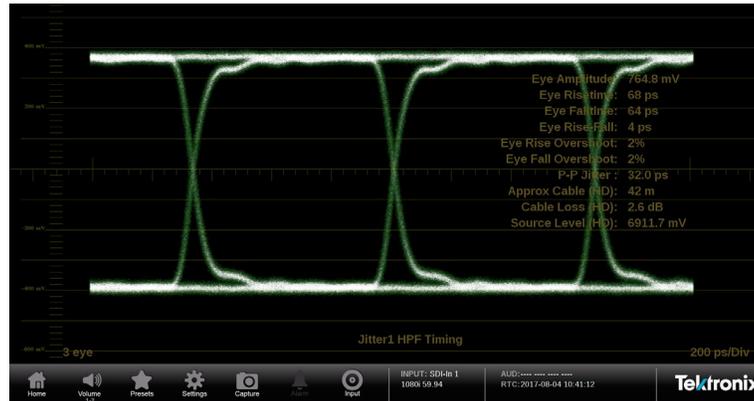


Figure 28: Eye diagram example