



SPG9000
Installation and Safety Instructions

Copyrights and Trademark Notices

Copyright © 2023 Telestream, LLC and its Affiliates. All rights reserved. TELESTREAM is a registered trademark of Telestream, LLC. All other trade names referenced are the service marks, trademarks, or registered trademarks of their respective companies.

Telestream products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specifications and price change privileges reserved.

TELESTREAM is a registered trademark of Telestream, LLC.

Warranty

Telestream on behalf of itself and its Affiliates (“Telestream”) warrants that this product will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If any such product proves defective during this warranty period, Telestream, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product. Parts, modules and replacement products used by Telestream for warranty work may be new or reconditioned to like new performance. All replaced parts, modules and products become the property of Telestream.

In order to obtain service under this warranty, Customer must notify Telestream of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by Telestream, with shipping charges prepaid. Telestream shall pay for the return of the product to Customer if the shipment is to a location within the country in which the Telestream service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Telestream shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than Telestream representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of non- Telestream supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

THIS WARRANTY IS GIVEN BY TELESTREAM WITH RESPECT TO THE PRODUCT IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. TELESTREAM AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TELESTREAM’S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE SOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR BREACH OF THIS WARRANTY. TELESTREAM AND ITS VENDORS WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL

DAMAGES IRRESPECTIVE OF WHETHER TELESTREAM OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

[W2 – 15AUG04]

TELESTREAM SOFTWARE LICENSE AGREEMENT

THE PROGRAM, OR PROGRAMS, ENCODED OR INCORPORATED WITHIN EQUIPMENT OR ACCOMPANYING THIS AGREEMENT, IS FURNISHED SUBJECT TO THE TERMS AND CONDITIONS OF THIS AGREEMENT. RETENTION OF THE PROGRAM FOR MORE THAN THIRTY DAYS OR USE OF THE PROGRAM IN ANY MANNER WILL BE CONSIDERED ACCEPTANCE OF THE AGREEMENT TERMS. IF THESE TERMS ARE NOT ACCEPTABLE, THE UNUSED PROGRAM AND ANY ACCOMPANYING DOCUMENTATION SHOULD BE RETURNED PROMPTLY TO TELESTREAM FOR A FULL REFUND OF THE LICENSE FEE PAID. (FOR INFORMATION REGARDING THE RETURN OF PROGRAMS ENCODED OR INCORPORATED WITHIN EQUIPMENT, CONTACT THE NEAREST TELESTREAM SALES OFFICE.)

DEFINITIONS

"Telestream" means Telestream, LLC, a Delaware limited liability company, and its Affiliates, or the local Telestream legal entity that is supplying the equipment.

"Program" means the Telestream software product (executable program and/or data) enclosed with this Agreement or included within the equipment with which this Agreement is packed. "Customer" means the person or organization in whose name the Program was ordered.

LICENSE

Customer may:

1. Use the Program on a single machine at any one time; and
2. Copy the Program for archival or backup purposes, provided that no more than one (1) such copy is permitted to exist at any one time. Each copy of the Program made by Customer must include a reproduction of any copyright notice or restrictive rights legend appearing in or on the copy of the Program as received from Telestream.

Customer may not:

1. Use the Program on more than one machine at any one time;
2. Transfer the Program to any person or organization outside of Customer or the corporation of which Customer is a part without the prior written consent of Telestream, except in connection with the transfer of the equipment within which the programs are encoded or incorporated;
3. Export or re-export, directly or indirectly, the program, any associated documentation, or the direct product thereof, to any country to which such export or re-export is restricted by law or regulation of the United States or any foreign government having jurisdiction without the prior authorization, if required, of the Office of Export Administration, Department of Commerce, Washington, D.C. and the corresponding agency of such foreign government;

4. Modify the Program, create derivative works, or merge the Program with another program;
5. Reverse compile or disassemble the Program for any purpose, beyond the extent that such activity is expressly permitted by applicable open source licenses or applicable law notwithstanding this limitation; or
6. Copy the documentation accompanying the Program.

For Programs designed to reside on a single-machine and support one or more additional machines, either locally or remotely, without permitting the Program to be transferred to an additional machine for local execution, the additional machines shall be considered within the definition of "single machine." For programs permitting the Program to be transferred to an additional machine for local execution, a separate license shall be required for each such machine with which the Program may be used. Title to the Program and all copies thereof, but not the media on which the Program or copies may reside, shall be and remain with Telestream or others for whom Telestream has obtained a respective licensing right. Customer shall pay when due all property taxes that may now or hereafter be imposed, levied or assessed with respect to the possession or use of the Program or this license and shall file all reports required in connection with such taxes. If the Program or any related documentation is acquired by or for an agency of the U.S. Government, the Program and documentation shall be considered "commercial computer software" or "commercial computer software documentation" respectively, as those terms are used in 48 CFR §12.212, 48 CFR §227.7202, or 48 CFR §252.227-7014, and are licensed with only those rights as are granted to all other licensees as set forth in this Agreement.

THE PROGRAM MAY NOT BE USED, COPIED, MODIFIED, MERGED, OR TRANSFERRED TO ANOTHER EXCEPT AS EXPRESSLY PERMITTED BY THESE TERMS AND CONDITIONS. UPON TRANSFER OF ANY COPY, MODIFICATION, OR MERGED PORTION OF THE PROGRAM, THE LICENSE GRANTED HEREIN IS AUTOMATICALLY TERMINATED WITH RESPECT TO THE PARTY THAT TRANSFERS THE PROGRAM.

TERM

The license granted herein is effective upon acceptance by Customer, and shall remain in effect until terminated as provided herein. The license may be terminated by Customer at any time upon written notice to Telestream. The license may be terminated by Telestream or any third party from whom Telestream may have obtained a respective licensing right if Customer fails to comply with any term or condition and such failure is not remedied within thirty (30) days after notice hereof from Telestream or such third party. Upon termination by either party, Customer shall return to Telestream or destroy, the Program and all associated documentation, together with all copies in any form.

LIMITED WARRANTY

The Program is provided "as is" without warranty of any kind, either express or implied. Telestream does not warrant that the functions contained in the Program will meet Customer's requirements or that the operation of the Program will be uninterrupted or error-free.

TELESTREAM AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. LIMITATION OF LIABILITY, IN NO EVENT SHALL TELESTREAM OR OTHERS FROM WHOM TELESTREAM HAS OBTAINED A LICENSING RIGHT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR CONNECTED WITH CUSTOMER'S POSSESSION OR USE OF THE PROGRAM, EVEN IF TELESTREAM OR SUCH OTHERS HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

THIRD-PARTY DISCLAIMER

Except as expressly agreed otherwise, third parties from whom Telestream may have obtained a licensing right do not warrant the program, do not assume any liability with respect to its use, and do not undertake to furnish any support or information relating thereto.

GENERAL

This Agreement contains the entire agreement between the parties with respect to the use, reproduction, and transfer of the Program. Neither this Agreement nor the license granted herein is assignable or transferable by Customer without the prior written consent of Telestream. This Agreement and the license granted herein shall be governed by the laws of the state of California. All questions regarding this Agreement or the license granted herein should be directed to the nearest Telestream Sales Office.

Table of Contents

Important Compliance and Safety Information	7
Preface	19
Installation	21
Operating Requirements	21
Rack Installation	23
Power Connection	26
Physical Connections	28
Rear Panel Connectors	28
SFP Module Installation	30
Basic Operation	31
Front Panel Controls	31
Network Connection	35
Web User Interface	38

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 R7.19: 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-C22.2 NO. 61010-1-12 + G11 + G12 (R2017) + A1: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements.

Sécurité

CAN/CSA-C22.2 NO. 61010-1-12 + G11 + G12 (R2017) + A1: Exigences de sécurité pour l'électricité Matériel de mesure, de contrôle et d'utilisation en laboratoire - Partie 1: Généralités Exigences.

European Union, European Free Trade Association (EFTA), and United Kingdom 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, CROATIA, CZECHIA, DENMARK, ESTONIA, FINLAND, FRANCE, GERMANY, GREECE, HUNGARY, IRELAND, ITALY, LATVIA, LITHUANIA, LUXEMBOURG, MALTA, NETHERLANDS, POLAND, PORTUGAL, ROMANIA, SLOVAKIA, SLOVENIA, SPAIN, SWEDEN, ICELAND, LIECHTENSTEIN, NORWAY, UNITED KINGDOM, 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: 2010 + A1: Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements Low Voltage Directive 2014/35/EU

Emissions

EN 55032: 2015 + A11: 2020, CISPR 32: 2015, EN 61000-3-2: 2014, EN 61000-3-3: 2013

Immunity

EN 55035: 2017, EN 61000-4-2: 2009,
EN 61000-4-3: 2006 + A1: 2008 + A2: 2010, EN 61000-4-4: 2012,
EN 61000-4-5: 2014 + A1: 2017, EN 61000-4-6: 2014, EN 61000-4-8: 2010,
EN 61000-4-11: 2020

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 Gerat der Funkstorgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerates Rundfunkstörungen auftreten, in welchen Fallen 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 appartient 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 required to comply with the substance restrictions of the RoHS 3 Directives 2011/65/EU and EU 2015/863.

Korea Compliance Statement

사 용 자 안 내 문
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

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

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 power is present.

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 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 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: Personal injury or damage to the instrument can occur if the instrument is not properly secured in the equipment rack.

ADVERTENCIA: Se pueden producir lesiones personales o daños al instrumento si el instrumento no está debidamente asegurado en el bastidor del equipo.

WARNUNG: Personenschäden oder Schäden am Gerät können auftreten, wenn das Gerät nicht ordnungsgemäß im Gerätegestell befestigt ist.

AVERTISSEMENT: Des blessures corporelles ou des dommages à l'instrument peuvent survenir si l'instrument n'est pas correctement fixé dans le rack de l'équipement.

AVVERTIMENTO: Lesioni personali o danni allo strumento possono verificarsi se lo strumento non è adeguatamente fissato nel rack per apparecchiature.

AVISO: Podem ocorrer ferimentos pessoais ou danos ao instrumento se o instrumento não estiver devidamente fixado no rack do equipamento.



WARNING: To prevent injury during product installation, use care not to pinch hands or fingers in the rails and slides.

ADVERTENCIA: Para evitar lesiones durante la instalación del producto, tenga cuidado de no pillarse las manos o los dedos en los rieles y correderas.

WARNUNG: Um Verletzungen während der Produktinstallation zu vermeiden, achten Sie darauf, Hände oder Finger nicht in den Schienen und Schienen einzuklemmen.

AVERTISSEMENT: Pour éviter les blessures lors de l'installation du produit, veillez à ne pas vous pincer les mains ou les doigts dans les rails et les glissières.

AVVERTIMENTO: Per evitare lesioni durante l'installazione del prodotto, prestare attenzione a non schiacciarsi le mani o le dita nelle guide e nelle guide.

AVISO: Para evitar ferimentos durante a instalação do produto, tome cuidado para não prender as mãos ou os dedos nos trilhos e corrediças.



WARNING: To prevent injury when removing the product from the rack, do not forcefully and abruptly pull the product from the rack. Pull with the minimum force required to move the instrument with a consistent, even motion.

ADVERTENCIA: Para evitar lesiones al retirar el producto del bastidor, no lo tire bruscamente ni con fuerza. Tire con la fuerza mínima necesaria para mover el instrumento con un movimiento constante y uniforme.

WARNUNG: Um Verletzungen beim Entfernen des Produkts aus dem Rack zu vermeiden, ziehen Sie das Produkt nicht gewaltsam und abrupt aus dem Rack. Ziehen Sie mit der minimalen Kraft, die erforderlich ist, um das Instrument mit einer konsistenten, gleichmäßigen Bewegung zu bewegen.

AVERTISSEMENT: Pour éviter toute blessure lors du retrait du produit du rack, ne tirez pas brusquement et avec force sur le produit du rack. Tirez avec la force minimale requise pour déplacer l'instrument avec un mouvement constant et régulier.

AVVERTIMENTO: Per evitare lesioni durante la rimozione del prodotto dal rack, non tirare con forza e bruscamente il prodotto dal rack. Tirare con la forza minima richiesta per muovere lo strumento con un movimento uniforme e costante.

AVISO: Para evitar ferimentos ao remover o produto do rack, não puxe o produto com força e abruptamente do rack. Puxe com a força mínima necessária para mover o instrumento com um movimento consistente e uniforme.



WARNING: To reduce the risk of fire and shock, ensure that the mains supply voltage fluctuations do not exceed 10% of the operating voltage range.

ADVERTENCIA: Para evitar el riesgo de fuego y descargas, asegúrese de que las fluctuaciones de voltaje de la fuente de alimentación no exceden 10% del rango operativo de voltaje.

WARNUNG: Um die Brand- und Stromschlaggefahr zu verringern, stellen Sie sicher, dass die Schwankungen der Netzspannung 10% des Betriebsspannungsbereichs nicht überschreiten.

AVERTISSEMENT: Pour éviter tout risque de feu ou choc électrique, assurez vous que les variations de tension ne soient pas supérieure à 10% de la valeur nominale.

AVVERTIMENTO: Per ridurre il pericolo di incendi e folgorazioni, assicurarsi che le fluttuazioni della tensione di rete siano contenute entro il 10% del valore nominale.

AVISO: Para reduzir o risco de incêndio e choque, certifique-se de que as flutuações da voltagem da rede elétrica não excedam 10% da faixa de tensão de operação.



WARNING: To reduce risk of fire and shock, use the certified power cord provided with the product.

ADVERTENCIA: Para reducir el riesgo de incendio y golpes, utilice el cable de alimentación certificado suministrado con el producto.

WARNUNG: Um das Risiko von Bränden und Stößen zu verringern, verwenden Sie das zertifizierte Netzkabel, das mit dem Produkt geliefert wird.

AVERTISSEMENT: Pour réduire les risques d'incendie et de choc, utilisez le cordon d'alimentation certifié fourni avec le produit.

AVVERTIMENTO: Per ridurre il rischio di incendio e urti, utilizzare il cavo di alimentazione certificato fornito con il prodotto.

AVISO: Para reduzir o risco de incêndio e choque, utilize o cabo de alimentação certificado fornecido com o produto.



CAUTION: Damage to the instrument can occur if this instrument is powered on at temperatures outside the specified temperature range.

PRECAUCIÓN: Hay peligro de daños al equipo si se enciende a temperaturas que estén fuera del rango especificado.

VORSICHT: Das Gerät kann beschädigt werden, wenn es bei Temperaturen außerhalb des angegebenen Temperaturbereichs eingeschaltet wird.

ATTENTION: Des dommages peuvent être produits par la mise sous tension dans des plages de température en dehors des valeurs spécifiées.

ATTENZIONE: Non accendere lo strumento se la temperatura ambiente è al di fuori dell'intervallo specificato in quanto si possono provocare danni.

CUIDADO: Podem ocorrer danos ao instrumento se este for ligado em temperaturas fora da faixa de temperatura especificada.



CAUTION: To prevent damage to the instrument and rackmount, do not force the instrument into the rack if it does not slide smoothly. The rails assembly may need to be adjusted to resolve the problem.

PRECAUCIÓN: Para evitar daños al instrumento y al montaje en bastidor, no fuerce el instrumento para que entre en el bastidor si no se desliza suavemente. Es posible que sea necesario ajustar el conjunto de rieles para resolver el problema.

VORSICHT: Um Schäden am Instrument und am Gestell zu vermeiden, schieben Sie das Instrument nicht mit Gewalt in das Gestell, wenn es nicht reibungslos gleitet. Die Schienenbaugruppe muss möglicherweise angepasst werden, um das Problem zu beheben.

ATTENTION: Per evitare danni allo strumento e al montaggio su rack, non forzare lo strumento nel rack se non scorre agevolmente. Potrebbe essere necessario regolare il gruppo delle guide per risolvere il problema.

ATTENZIONE: per evitare danni allo strumento e al montaggio su rack, non forzare lo strumento nel rack se non scorre agevolmente. Potrebbe essere necessario regolare il gruppo delle guide per risolvere il problema.

CUIDADO: Para evitar danos ao instrumento e à montagem em rack, não force o instrumento no rack se ele não deslizar suavemente. O conjunto dos trilhos pode precisar ser ajustado para resolver o problema.



CAUTION: The instrument does not have a power switch. When you connect the power cable to the AC line connector, the instrument powers on. Do not install or remove a power supply module when a power cord is attached to that module.

PRECAUCIÓN: El instrumento no tiene interruptor de encendido. Cuando conecta el cable de alimentación al conector de línea de CA, el instrumento se enciende. No instale ni extraiga un módulo de fuente de alimentación cuando un cable de alimentación esté conectado a ese módulo.

VORSICHT: Das Gerät hat keinen Netzschalter. Wenn Sie das Netzkabel an den Netzanschluss anschließen, schaltet sich das Instrument ein. Installieren oder entfernen Sie kein Netzteilmodul, wenn ein Netzkabel an dieses Modul angeschlossen ist.

ATTENTION: L'instrument n'a pas d'interrupteur d'alimentation. Lorsque vous connectez le câble d'alimentation au connecteur de ligne CA, l'instrument s'allume. N'installez pas ou ne retirez pas un module d'alimentation lorsqu'un cordon d'alimentation est connecté à ce module.

ATTENZIONE: lo strumento non dispone di un interruttore di alimentazione. Quando si collega il cavo di alimentazione al connettore di linea CA, lo strumento si accende. Non

installare o rimuovere un modulo di alimentazione quando un cavo di alimentazione è collegato a quel modulo.

CUIDADO: O instrumento não possui um interruptor de alimentação. Quando você conecta o cabo de alimentação ao conector de linha CA, o instrumento liga. Não instale ou remova um módulo de fonte de alimentação quando um cabo de alimentação estiver conectado a esse módulo.

Preface

This manual describes how to install the SPG9000 and basic start up settings. Safety information related to installation is also provided.

Where to Find More Information

The full User Manual, Release Notes, and other information about your product are available for download at www.telestream.net/video/resources.htm. The Product Documentation table lists all the documentation for the SPG9000.

Product Documentation

Document	Manual type	Part number	Description
SPG9000 User Manual	User	D00013571x	Provides detailed operating information for all SPG9000 hardware, including information for the dual power supply (option SPG9000-DPW), the antenna (SPG9000-ACC-ANT), and breakout cable (option SPG9000-XLR).
SPG9000 Release Notes	Release Notes	P00013575x	Describes the new features, improvements, and limitations of the instrument firmware.
SPG9000 Installation and Safety Instructions	User	P00010606x	Describes how to install an SPG9000 instrument and provides basic safety and operating information (included with product shipment).
Manual, Rackmount Slides and Rails Kit	User	071370600x	Describes how to install the rackmount kit onto relevant products for mounting into a standard 19-inch equipment rack.

Telestream Contact Information

To obtain product information, technical support, or provide comments on this guide, contact us using our website, email, or phone number as listed below.

Resource	Contact Information
Telestream Video Support	Website: http://www.telestream.net/telestream-support Email: videosupport@telestream.net US and Canada Toll-free: 1-844-219-5329 Outside of US and Canada: 1-503-967-9833
Telestream	Website: www.telestream.net Sales and Marketing Email: info@telestream.net Telestream 848 Gold Flat Road, Suite 1 Nevada City, CA. USA 95959
International Distributor Support	Website: www.telestream.net See the Telestream website for your regional authorized Telestream distributor.
Telestream Technical Writers	Email: techwriter@telestream.net If you have comments or suggestions about improving this document or other Telestream documents—or if you've discovered an error or omission, please email us.

Installation

This section has the basic requirements of how to prepare the equipment for use. This includes operational limits for the equipment, how to install it in a rack, and how to connect power. For details on these topics, refer to the *SPG9000 User Manual*.

Operating Requirements

This section provides the environmental and power operating requirements for safe operation of the instrument.

Environmental Operating Requirements

The location of the instrument must be in a range of temperature and humidity, with adequate ventilation.

The instrument must be within the range of temperatures listed in the Environmental Requirements table for safe operation or storage.

Leave space for cooling by ensuring standard side clearance for rack mounting or 2 inches (5.1 cm) of side clearance for benchtop use. Also, ensure sufficient rear clearance (approximately 2 inches [5 cm]) so cables are not damaged by sharp bends.



CAUTION: Damage to the instrument can occur if this instrument is powered on at temperatures outside the specified temperature range.

Environmental Requirements

Parameter		Description
Temperature	Operating	0 °C to +50 °C
	Non-Operating	-20 °C to +60 °C
Humidity	Operating	20% to 80% (No condensation); Maximum wet-bulb temperature 29.4 °C
	Non-Operating	5% to 90% (No condensation); Maximum wet-bulb temperature 40.0 °C

Environmental Requirements


Parameter	Description	
Altitude	Operating	To 3,000 m (9,842 feet) Maximum operating temperature decreases 1 °C each 300 m above 1.5 km
	Non-Operating	To 15,000 m (49,000 feet)
Pollution Degree	Pollution Degree 2 (as defined in IEC 61010-1): Rated for indoor, dry location use only.	

Electrical Power Requirements

The instrument operates from an AC power input. Check that your location provides the proper electrical power requirements as listed in the AC Line Power Requirements table.

Use the proper power cord with the instrument. The AC Line Power Requirements table lists the power requirements for the instrument.

AC Line Power Requirements

Parameter	Description
Line voltage range	100 to 240 VAC +/- 10%
	 WARNING: To reduce the risk of fire and shock, ensure that the mains supply voltage fluctuations do not exceed 10% of the operating voltage range.
Line frequency	50/60 Hz

Rack Installation

This section explains how to secure the SPG9000 in a rack.



WARNING: Personal injury or damage to the instrument can occur if the instrument is not properly secured in the equipment rack.

When you order Option SPG9000-RACK, the instrument is configured at shipment for use in an equipment rack. Refer to the *Rackmount Slides and Rails Kit Instructions* that was supplied with the instrument for instructions on how to install the rack mounting hardware.

After you have installed the rack mounting hardware, follow the steps to install the instrument into an equipment rack:




WARNING: To prevent injury during product installation, use care not to pinch hands or fingers in the rails and slides.

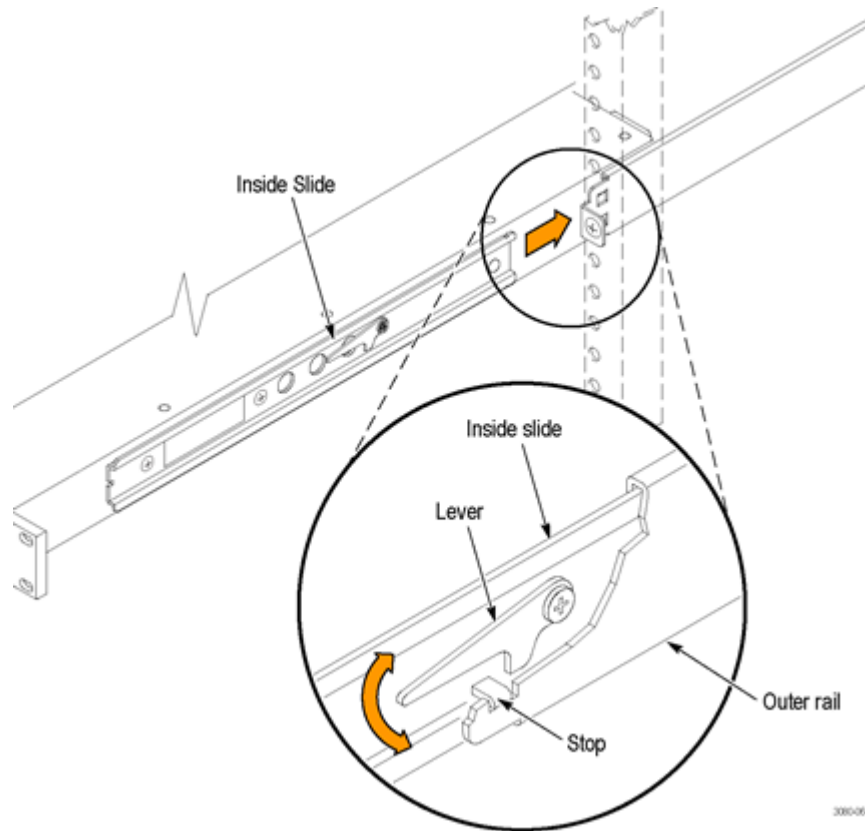
Install Instrument in Rack

1. Insert the instrument left and right slides into the ends of the rack rails while tilting the long handle part of each lever upward.

Note: Make sure to insert the instrument slides inside the inner rack rails. You may also need to tilt the rear of the instrument up or down at a slight angle to fit the slides into the rails.

2. Push the instrument into the rack until it stops.

 **CAUTION:** To prevent damage to the instrument and rackmount, do not force the instrument into the rack if it does not slide smoothly. The rails assembly may need to be adjusted to resolve the problem.



3. Retighten any loose screws and push the instrument all the way into the rack. If the tracks do not slide smoothly, readjust the rail assemblies.
4. When adjusting is completed, tighten all rail assembly 10-32 screws using 28 inch-lbs of torque.
5. Tighten the knob screws on the front corners of the instrument so it is secured in the rack.

Remove Instrument from Rack

 **WARNING:** To prevent injury when removing the product from the rack, do not forcefully and abruptly pull the product from the rack. Pull with the minimum force required to move the instrument with a consistent, even motion.

1. Loosen the knob screws that attach the front of the instrument to the rack.
2. Gently pull the instrument toward you until you can reach the levers at the rear of the instrument.

- 3.** Tilt both lever handles upward simultaneously to allow them to clear the stops.
- 4.** Pull the instrument past the stops and out of the rack.

Power Connection

The instrument operates from a single-phase power source with the neutral conductor at or near earth ground. The line conductor is fused for over-current protection. A protective ground connection through the grounding conductor in the locking power cord is essential for safe operation.

When ordered with Option SPG9000-SPW, a single power supply module is installed in the instrument. With Option SPG9000-DPW, a second hot-swappable redundant (backup) power supply module is also installed. When two power supply modules are installed in the instrument, one is configured to be the primary supply and the other is configured to be the backup supply. In the event that the primary supply fails, the backup supply will automatically provide power to maintain instrument operation. See the *SPG9000 User Manual* for detailed information about how to operate the instrument with two power supplies.



CAUTION: The instrument does not have a power switch. When you connect the power cable to the AC line connector, the instrument powers on. Do not install or remove a power supply module when a power cord is attached to that module.

Power Cord

Your instrument was shipped with one of these power cord options. Power cords for use in North America are UL listed and CSA certified. Cords for use outside North America are approved by at least one authority acceptable in the country to which the product is shipped.

PWR-CORD-NA-S15 – North America Power Cord, Straight 15A

PWR-CORD-EURO – Universal EUR power cord

PWR-CORD-CHN – China power cord

PWR-CORD-IND – India power cord

PWR-CORD-UK – United Kingdom power cord

PWR-CORD-BRZ – Brazil power cord

PWR-CORD-AUS – Australia power cord

PWR-CORD-CHE – Switzerland power cord

PWR-CORD-JPN – Japan power cord

PWR-CORD-NONE – No power cord or AC Adapter



WARNING: To reduce risk of fire and shock, use the certified power cord provided with the product.

Connect Main Power Supply

Connect the power cable to the instrument first and then connect it to the AC power source. Connecting the power cable causes the instrument to power on.

After the instrument boots up and initializes, make sure the front panel FAULT indicator is not illuminated and no faults are reported on the instrument display. If the FAULT indicator is illuminated, perform the appropriate action. See table States of the FAULT Indicator.

States of the FAULT Indicator

FAULT LED state	Examples	FAULT Indicator State
Blinking red	A fault condition exists that has the potential to damage the instrument hardware.	<ul style="list-style-type: none"> • The main fans have stopped. • The internal temperature is too high.
Solid red	A fault condition exists that renders the instrument unusable.	<ul style="list-style-type: none"> • A fan speed is out of range. • An internal voltage is out of range.
Solid amber	A fault condition exists, but the instrument is still usable.	<ul style="list-style-type: none"> • The phase-locked loops (PLLs) are unlocked. • There is a DDS phase error. • A power supply module has reached the temperature-weighted hour (TWH) limit.
Off	The instrument is operating properly.	

Backup Power Supply

Note: This capability is only available when Option SPG9000-DPW is installed.

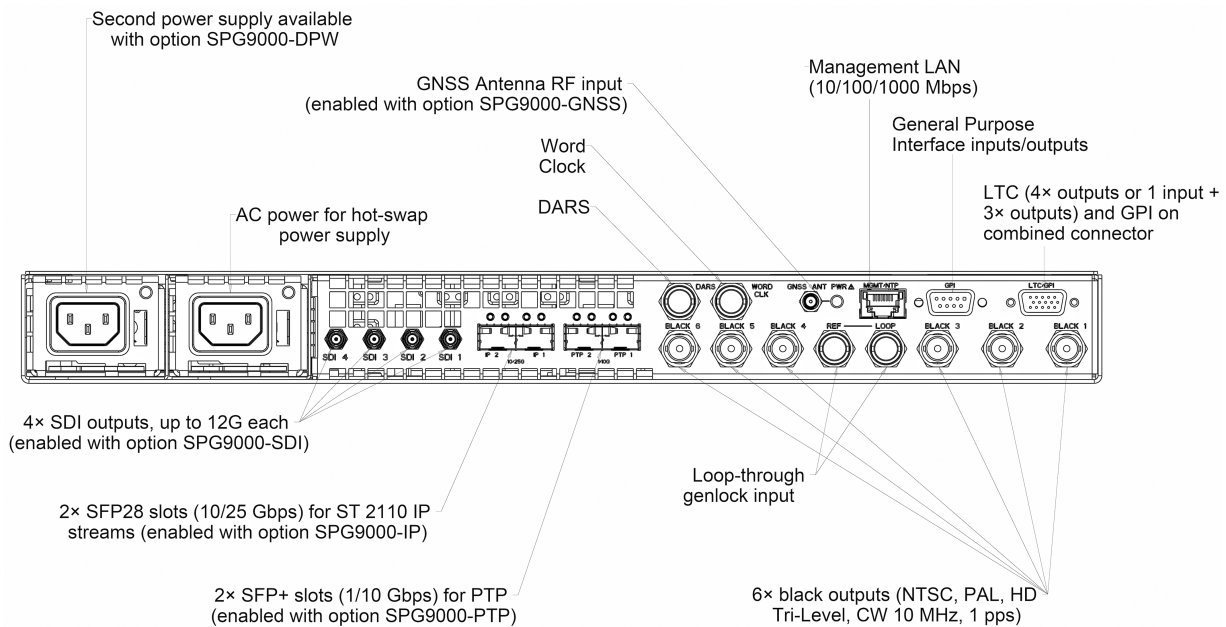
After the instrument powers on, configure the instrument for the preferred (active) supply. See the *SPG9000 User Manual* for detailed information about how to operate the instrument with two power supplies.

Physical Connections


This section explains the basics of the connections available on the equipment. For details of the connections and their use, refer to the *SPG9000 User Manual*.

Rear Panel Connectors

The illustration shows the external connections on the rear panel of the SPG9000 instrument. A description of each connector is provided.



Descriptions of Rear-Panel Connectors

Connector label, symbol, or end	Description
	IEC 60320 C14 inlets, for use with the appropriate power cable with C13 connector, are for the AC power source and any backup power source.
SDI 1-4	4 HD-BNC connectors are for generation of SD, HD, and UHD SDI test signals. Option SPG9000-SDI must be installed to enable these ports.

Descriptions of Rear-Panel Connectors

Connector label, symbol, or end	Description
IP 1-2	2 slots for SFP28 modules (10 or 25 Gbps) are for generation of ST 2110 IP streams of video, audio, and data test signals. Option SPG9000-IP must be installed to enable these ports.
PTP 1-2	2 slots for SFP+ modules (1 or 10 Gbps) are for Precision Time Protocol (PTP) networks. Option SPG9000-PTP must be installed to enable these ports.
DARS	BNC connector is for an AES11 Digital Audio Reference Signal (DARS) output signal.
WORD CLK	BNC connector is for a 48 kHz Word Clock output signal.
GNSS ANT	SMA connector is for a connection to an external GNSS antenna for use with the integrated receiver. Option SPG9000-GNSS must be installed for this function.
MGMT/NTP	RJ-45 socket is for a connection to a 10/100/1000 BASE-T network for management control of the instrument. This port is also for Network Time Protocol (NTP) messages.
GPI	D-sub connector (DE-9) is for General Purpose Interface (GPI) inputs and outputs.
LTC/GPI	D-sub connector (DE-15) is for Linear Time Code (LTC) input/ outputs and GPI on a single cable. The Option SPG9000-XLR breakout cable can be used to send the LTC 1-4 signals from this connector to XLR connectors.
BLACK 1-6	6 BNC connectors are for analog sync outputs, such as NTSC/PAL black burst, and HD tri-level.
REF LOOP	2 BNC connectors are for a loop-through reference (genlock) input.

SFP Module Installation

The SPG9000 has two pairs of sockets (4 sockets total) that can be used with SFP transceiver modules for optical network connections. When Option SPG9000-PTP is installed, the SFP+ sockets labeled PTP 1 and PTP 2 are enabled. They can use SFP modules for 1 Gbps or 10 Gbps line rates. When Option SPG9000-IP is installed, the SFP28 sockets labeled IP 1 and IP 2 are enabled. They can use SFP modules for 10 Gbps or 25 Gbps line rates. The same type of module must be used for both ports of each interface type.

Several SFP module options are available for use with the SPG9000:

SPG9000-SFP-1GESR: Gigabit Ethernet short reach 850 nm SFP transceiver module (PTP ports only)

SPG9000-SFP-10GESR: 10G Ethernet short reach 850 nm SFP+ transceiver module

SPG9000-SFP-10GELR: 10G Ethernet long reach 1310 nm SFP+ transceiver module

SPG9000-SFP-25GESR: 25G Ethernet short reach 850 nm SFP28 transceiver module (IP ports only)

SPG9000-SFP-25GELR: 25G Ethernet long reach 1310 nm SFP28 transceiver module (IP ports only)

Install SFP Module

1. Remove the plug from the SFP connector.
2. Insert the SFP module into the socket on the rear-panel of the instrument. The module will latch into place when fully inserted.

Remove SFP Module

Lift up on the latch and pull the module out of the socket.

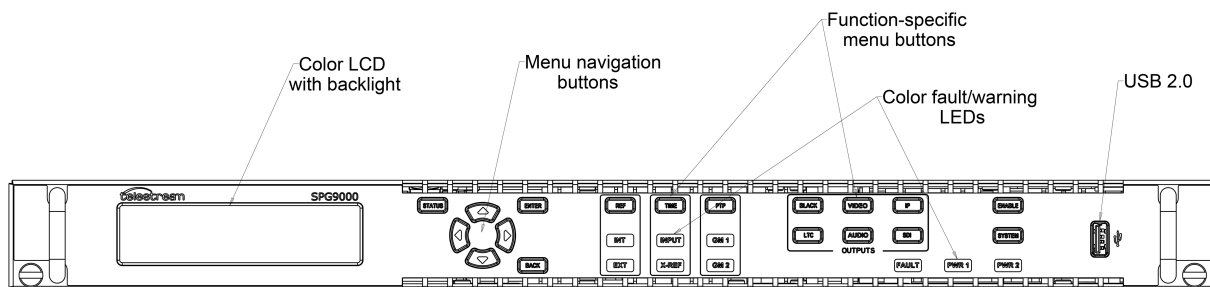
The SFP module should be removed from the generator while the instrument is being transported.

Note: To prevent damage to the SFP module from static discharge, while you are transporting the instrument, always transport the SFP module in a anti-static bag or container.

Basic Operation

This section describes the general requirements for network connection and how to use the equipment. For details of how to utilize the SPG9000, refer to the *SPG9000 User Manual*.

Front Panel Controls



Display

The display is used for status and configuration menus for front-panel operation. Most menus appear as two lines of text, with the menu name displayed on the top line and the current selection or value displayed on the second line.

The menu control buttons are used to navigate the hierarchy of the current menu and to make selections or change values. Most other buttons (STATUS, REF, SYSTEM, etc.) are used to select the current top-level menu.

Menu Control Buttons

Use these buttons to control the menu display:

Arrow Buttons (Δ , ∇ , \triangleleft , and \triangleright): Press to scroll through the available menu items.

ENTER Button: Press to enable the selected menu item or to enter a submenu.

BACK Button: Press to return to the previous menu item.

STATUS Button

Press to enter the top-level STATUS menu. If there are any fault or alert indicators that are red or yellow, additional information can be seen in the display. You can also see the current status of the reference input and other operational parameters.

The STATUS menu allows you to only view information about the current settings and state of the instrument. Because no changes to the instrument configuration can be made from this menu, it is always safe to view this menu while the instrument is in operation.

REF Button

Press to access the REFERENCE menu and configure the reference source settings and GNSS receiver configuration (Option SPG9000-GNSS required).

TIME Button

Press to access the TIME menu and configure settings such as the time of day, time zone offset, daylight-saving time schedule, daily jam schedule, alarm time, and delay.

PTP Button

Press to configure the PTP (Precision Time Protocol) parameters for the two PTP instances. Press the button repeatedly to cycle between the configuration menu for PTP 1 and PTP 2. Option SPG9000-PTP required.

OUTPUTS

Use these buttons to access menus for configuring the signal outputs.

BLACK Button

Press to configure the format, timing, and other parameters for the selected black output. Press the BLACK button repeatedly to cycle between the menus for each of the BLACK 1 to BLACK 6 outputs.

LTC Button

Press to configure the format, source, and other parameters for the selected LTC (linear time code) output. Press the LTC button repeatedly to cycle between the menus for each of the LTC 1 to LTC 4 outputs. LTC 1 can be configured as an input if needed.

VIDEO Button

Press to configure the format, test signal content, and image overlays for the selected video source. Press repeatedly to cycle between the menus for each of the video sources.

AUDIO Button

Press to configure the audio tones sources and the audio reference outputs (DARS and Word Clock).

IP Button

Press to configure the video, audio, and data streams for the IP 1 and IP 2 interfaces. Option SPG9000-IP required.

SDI Button

Press to configure the video parameters, embedded audio, and ancillary data for the selected SDI output. Press the SDI button repeatedly to cycle between the menus for each of the SDI 1 to SDI 4 outputs. Option SPG9000-SDI required.

SYSTEM Button

Press to access the SYSTEM menu to configure and view various system-wide settings. You can save and recall presets, configure the network settings, upgrade the instrument firmware, and make other configuration changes.

ENABLE Button

Press to enable or disable the front-panel buttons.

Disable Front-Panel Buttons

Press-and-hold for about one second while the front-panel buttons are enabled. All of the front-panel buttons no longer respond to touch, except for the ENABLE button. The display dims and the buttons are no longer lighted, except for the ENABLE button.

If you have selected a timeout period in the FRONT PANEL DISABLE submenu in the SYSTEM menu, and that period passes without a button push, all of the front-panel buttons are also disabled. The response for a timeout is the same as for pressing the ENABLE button: the display dims, the buttons no longer respond to touch nor are they lighted, except for the ENABLE button.

Enable Front-Panel Buttons

Press-and-hold for about five second to enable the front-panel buttons. The timeout counter is restarted (if the timeout period is already set), the display brightens, the buttons light, and the buttons respond to touch.

USB Port

Use the port to upgrade the instrument firmware.

Front Panel Indicators

There are multicolor indicators that are used to report the current status of key system functions. Each indicator can be green, for normal operating status; yellow, for warning; or red to indicate an error or fault.

Reference Source Indicators

The INT (internal) and EXT (external) indicators, below the REF button, report the status of the current reference source for the instrument. The states of the INT and EXT indicators depend on the source type (internal, genlock, GNSS, or PTP) and the current state of that source.

Time Source Indicators

The INPUT and X-REF indicators, below the TIME button, report the status of the current time-of-day source for the instrument.

PTP Grandmaster Indicators

The GM 1 and GM 2 indicators, below the PTP button, report the grandmaster status of the PTP 1 and PTP 2 ports respectively.

Power Supply Indicators

The PWR 1 and PWR 2 indicators, below the SYSTEM button, report the status of the power supply 1 and 2 modules respectively.

Note: When viewed from the front of the instrument, power supply 1 is the left power supply module and power supply 2 is the right power supply module. This matches the orientation of the PWR 1 and PWR 2 indicators on the front panel. In addition to the PWR 1 and PWR 2 indicators, the rear panel of each power supply module has a STATUS light that matches the status shown on the PWR 1 and PWR 2 indicators.

FAULT Indicator

The FAULT indicator lights when there is a problem with the instrument hardware.

Note: You can view descriptions of the active alerts and faults using the STATUS menu.

Network Connection

The instrument has a 10/100/1000 BASE-T Ethernet port on the rear panel that allows you to remotely control the instrument through the web page interface or through the application programming interface (API).

This section provides instructions for connecting the instrument to a network and for setting the network parameters on the Ethernet port.

Configure Network Parameters

The two procedures describe how to configure the network parameters on the instrument. You can use DHCP to configure the instrument with a dynamic IP address or you can configure a static IP address directly.

Note: These procedures must be done through the front-panel controls.

Configure Parameters for Network *with* DHCP Server

When the instrument is connected to the network and DHCP service is enabled, the instrument obtains the necessary network addresses automatically from an external DHCP server on the local network.

Note: Refer to your network administrator or to the user documentation supplied with your network server operating system (OS) for detailed information about DHCP server functions.

1. If necessary, press and hold the ENABLE button to allow commands through the front panel interface.
2. Press the SYSTEM button to open the SYSTEM menu list.
3. Press the down arrow button until the SYSTEM : NETWORK menu is highlighted and press the ENTER button.
4. Press the down arrow button until the SYSTEM : NETWORK : MGMT menu is highlighted and then press the ENTER button.
5. Press the down arrow button until the SYSTEM : NETWORK : MGMT : DHCP menu is highlighted.
6. Press the left or right arrow button to change the current item to "Enable" and press the ENTER button.
7. Press the down arrow button until the SYSTEM : NETWORK : MGMT : IP ADDRESS sub-menu is highlighted.

The address granted from the DHCP servers is displayed.

Configure Parameters for Network *without* DHCP Server



CAUTION: If you connected the instrument to the local Ethernet network, to prevent communication conflicts on your Ethernet network, ask your local-network administrator for the correct numbers to enter in the IP ADDRESS, SUBNET MASK, and GATEWAY submenus.

Note: DHCP, IP ADDRESS, SUBNET MASK, and GATEWAY are all in the SYSTEM : NETWORK : MGMT menu and can be accessed one after the other for the initial network setup.

Disable DHCP

1. If necessary, press and hold the ENABLE button to allow commands through the front panel interface.
2. Press the SYSTEM button to open the SYSTEM menu list.
3. Press the down arrow button until the SYSTEM : NETWORK menu is highlighted and press the ENTER button.
4. Press the down arrow button until the SYSTEM : NETWORK : MGMT menu is highlighted and then press the ENTER button.
5. Press the down arrow button until the SYSTEM : NETWORK : MGMT : DHCP menu is highlighted.
6. Press the left or right arrow button to change the current item to "Disable" and press the ENTER button.

Update IP ADDRESS

1. Press the SYSTEM button to open the SYSTEM menu list.
2. Press the down arrow button until the SYSTEM : NETWORK menu is highlighted and press the ENTER button.
3. Continue to highlight the menus and press the ENTER button until the SYSTEM : NETWORK : MGMT : IP ADDRESS sub-menu is highlighted and press the ENTER button.

The display enters edit mode. Only the ENTER and BACK buttons can exit edit mode.

4. Press the up or down arrow buttons to select the number.
5. Press the left or right arrow buttons to move between numbers.
The IP ADDRESS is made up of 4 groups of 3 numbers each, for example 192.168.1.42 must be entered as 192.168.001.042.
6. When the address is entered, exit edit mode:
 - To accept the entered address and exit edit mode, press the ENTER button.
 - To cancel the entered address (revert to the previous address) and exit edit mode, press the BACK button.

Update SUBNET MASK

1. Press the SYSTEM button to open the SYSTEM menu list.
2. Press the down arrow button until the SYSTEM : NETWORK menu is highlighted and press the ENTER button.
3. Continue to highlight the menus and press the ENTER button until the SYSTEM : NETWORK : MGMT : SUBNET MASK sub-menu is highlighted and press the ENTER button.

The display enters edit mode. Only the ENTER and BACK buttons can exit edit mode.

4. Press the up or down arrow buttons to select the number.
5. Press the left or right arrow buttons to move between numbers.

The SUBNET MASK is made up of 4 groups of 3 numbers each, for example 255.255.255.0 must be entered as 255.255.255.000.

6. When the address is entered, exit edit mode:
 - To accept the entered address and exit edit mode, press the ENTER button.
 - To cancel the entered address (revert to the previous address) and exit edit mode, press the BACK button.

Update GATEWAY

1. Press the SYSTEM button to open the SYSTEM menu list.
2. Press the down arrow button until the SYSTEM : NETWORK menu is highlighted and press the ENTER button.
3. Continue to highlight the menus and press the ENTER button until the SYSTEM : NETWORK : MGMT : GATEWAY sub-menu is highlighted and press the ENTER button.

The display enters edit mode. Only the ENTER and BACK buttons can exit edit mode.

4. Press the up or down arrow buttons to select the number.
5. Press the left or right arrow buttons to move between numbers.

The SUBNET MASK is made up of 4 groups of 3 numbers each, for example 192.168.1.1 must be entered as 192.168.001.001.

6. When the address is entered, exit edit mode:
 - To accept the entered address and exit edit mode, press the ENTER button.
 - To cancel the entered address (revert to the previous address) and exit edit mode, press the BACK button.

Web User Interface

When the web user interface is enabled in the SYSTEM menu, you can use a web browser to remotely access the instrument. When you enter the IP address of the instrument in a supported web browser, the web interface opens. Select the tabs to access the instrument settings and controls as you would using the front panel buttons.

The screenshot displays the telestream SPG9000 web user interface. At the top, the header includes the telestream logo, the model name 'SPG9000', and navigation links for 'Version 1.0', 'API Documentation', and 'Log Out'. A status bar contains several indicator lights: FAULT (grey), GM 1 (grey), GM 2 (green), PWR 1 (green), PWR 2 (grey), EXT (green), INT (grey), TIME (green), and X-REF (grey). Below the header is a tabbed menu with 'Status' selected, and other tabs for 'Reference', 'Time', 'PTP', 'Black', 'LTC', and 'System'. The main content area is divided into several panels:

- Reference:** Shows 'Primary Reference' as PTP Follower (PTP 1) with a 'Primary Status' of 'Locked 50 ns'. It also displays 'Genlock Input' as 'Signal Present' with a 'Signal Amplitude' of '1.694 V'. 'GNSS Status' is 'Locked Strong' with a 'Signal Quality' of '2033', 'Satellites' of '47 in-fix / 49 in-view', and 'Antenna' as 'Power Off'. A 'Show Details' button is present.
- Time:** Shows 'Primary Source' as 'PTP Follower' and 'Primary Time' as '2022-12-12 17:57:04 (local)'. It lists 'Time Zone Offset' as '+00:00' and 'DST Offset' as '+01:00'. 'VITC Status' is 'Detected', 'VITC Input' is '2022-12-12 04:57:04:17', and 'LTC Input' is 'Not available, LTC 1 set as output'. 'Program Time' is '17:57:22'. A 'Show Details' button is present.
- PTP 1:** Shows 'Mode' as 'Follow', 'State' as 'Tracking', 'Time (TAI)' as '2022-12-12 17:57:41', 'IPv4 Address' as '192.168.150.5', and 'Domain' as '121'. A 'Show Details' button is present.
- PTP 2:** Shows 'Mode' as 'Lead', 'State' as 'Active', 'Time (TAI)' as '2022-12-12 17:57:41', 'IPv4 Address' as '192.168.150.6', and 'Domain' as '120'. A 'Show Details' button is present.
- System:** Shows 'Hardware Status' as 'OK' and 'Power Supplies' as 'OK'. 'Active Power Supply' is 'PS1'. Two 'Show Details' buttons are present.

At the bottom center, the copyright notice reads 'Copyright © 2022 Telestream, LLC'.