

Integrated HD/SD Broadcast Graphics System



Inscriber[®] ***G7***[™]

Inscriber® G7™

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Designed to meet the “big picture” graphics requirements of today’s broadcasters, Harris® Inscriber® G7™ optimizes workflow while achieving new levels of graphics quality. The G7 system uniquely integrates the functionality of multiple broadcast graphics products to provide a robust, high-performance, HD/SD live-to-air solution.

Dramatic 3D Graphics

Inscriber® G7™ delivers uncompromised 2D and 3D real-time graphics flawlessly in SD or HD, scalable for playout simultaneously over two channels. Featuring the Harris® Altitude Express graphics board, the system supports the new G-3D™ design module, which gives operators everything they need to create dramatic, true 3D graphics that demand attention. The G7™ is powered by G-Scribe™ advanced graphics software for real-time 2D and 3D animation, manipulation and playback, Overlay™ persistent objects, Strata Compositing™, multiple format software clips and stills with metadata, embedded and discrete AES audio, Unicode, enhanced GPIO support and much more.

Streamlining Workflow Within All Broadcasting Environments

Whether used for driving coverage of live news, sports and special events, delivering automation-driven content for elections and school closings, or developing customized applications for game shows and sporting venues, the G7 system is a progressive solution for demanding broadcast environments.

The G7 system works within a larger workflow model that includes interfacing with automation and newsroom systems, as well as other graphics systems. The G7™ interfaces seamlessly in an automated live news/sports environment using the standard Intelligent Interface® protocol, the MOS protocol, and/or Inscriber® Direct Control™. The G7 workflow is further optimized using Connectus™, a centralized graphics management system for sharing, editing, and distributing graphics resources throughout a single facility and between multiple facilities. It also

uniquely integrates Inscriber® RTX™ application programming interface (API) capabilities for customized, purpose-driven applications without having to use a separate device. The G7™ allows systems to perform in sync and create an intelligent workflow.

As part of the Harris ONE interoperability initiative, the G7 system also provides seamless integration within the Harris end-to-end interoperability chain, enabling facilities to maximize efficiency, control costs and ensure a consistent level of quality.



Inscriber® G7™ Features

Innovative Hardware

The system's base configuration is a single-channel solution, which provides two video inputs, two video outputs (one key + fill pair), two 2D DVE channels, and up to 32 channels of discrete audio. Add a second channel for two more video inputs and a second key-plus-fill output channel.

2D DVE

The 2D DVE feature provides two independent DVEs, allowing two incoming video feeds to be displayed in real time in a region of the graphics layout. You no longer need to rely on the production switcher to build the DVEs — the switcher, at that point, is taking everything from one CG channel.

Strata Compositing™

See diagram on page 5.

Overlay™

Overlay™ allows you to build and control three additional layers of graphics on top of your current output without having to use additional channels. Objects output with Overlay™ remain on the top-most layer and operate without disruption. They're completely independent of other layouts, making them easy to control. You can easily insert and hide clocks, timers, still or animated logos, channel IDs, lower thirds, scoreboards, over-the-shoulder graphics, text crawls and temperature read-outs.

Automation Interface™

Automation Interface™ allows you to connect a G7 system to newsroom computer systems using the industry-standard Intelligent Interface® protocol.



It also enables tag filling and display control using a standard serial port protocol available from most news system vendors, including Harris, AP, Autocue, Avid, Compromter, EZ News, Floral, Parkervision and Sundance.

Media Store

Store, manage, retrieve and play out media files including stills, templates, clips and animations. Media Store allows the user to search based on various metadata including user-definable keywords. Metadata is copied with each image, allowing files to retain all related information when moved from one system to another. Media Store integrates directly with the playlist and the output display so graphics resources can be found and used either in CG layouts or directly out to air.

Real-Time 2D Animation

Take your graphics to the next level with the easy-to-use 2D animation editor. The editor allows any graphic and text element, including media objects (with Clips Option), to be keyframed on the x, y and z axes.

Quickly apply effects such as transparency, scale and rotation to create dynamic, reusable animations, or use pre-built templates included on the system. No previous animation experience is necessary.

Real-Time 3D Playback

Import and play true 3D scenes directly from third-party applications such as Autodesk's 3Ds Max® and Maya®. Integrate these scenes directly into your playlist for real-time playback. Add the G-3D option for even greater control of your 3D scene, allowing scene editing and template creation

ODBC

The ODBC (Open Database Connectivity) standard allows multiple programs to share information held within a database. The Inscriber ODBC feature links the information in your database tables to your graphic layouts and templates. When you update the database entries, the information automatically updates in your layouts. This is ideal for sporting events, elections, school closings and more.

Inscriber® G7™

Inscriber® G7™ Options

G-Scribe +™

G-Scribe+™ offers a package of software options to help you get the most out of your G7 system. The bundle includes G-3D™ (listed below), 3D Charts, and Video Capture. Video Capture and 3D charts are available exclusively with G-Scribe+™.

- **Video Capture** enables you to record streaming audio and video at full HD resolution. Set in and out points and play back as a full-frame clip.

- **3D Charts** allow users to integrate dynamic 3D charts directly into their 3D scenes. Each chart can be connected to a separate data source, and will update on air as edits are made to the data source (e.g., Excel, Access). Chart types available include 3D Bar, Pie and Line.

G-Scribe™ Offline

With G-Scribe™ Offline, a standalone software package, operators can compose layouts on any computer running Windows® XP, and transfer their designs to an online graphics system for playout to air.

MOS Option

No graphics experience required — Inscriber® MOS enables newsroom staff to create and schedule template-based text and graphics from their desktops for playout across the entire on-air Inscriber graphics product line. Inscriber MOS consists of a MOS-compliant ActiveX client control interface connected to Inscriber graphics systems. It enables remote asset browsing, editing and playout capabilities within MOS-enabled Newsroom Computer Systems (NRCS) such as AP's ENPS® and Avid's iNews®. Real-time previews are generated for the journalists as they create their graphics to ensure the accuracy of each item being added to a story. Centralized control playout allows all changes to the NRCS playlist generated from the Inscriber graphics systems to be automatically updated across multiple channels.

RTXports™

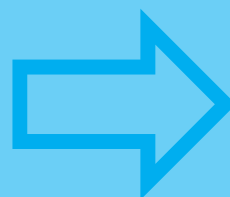
RTXports™ provide a simple and convenient interface to dynamic data streams using the fully supported Inscriber RTX API. This option makes it easy to integrate regularly updated information like sports scores, election returns, stock tickers and weather bulletins in layouts created with G-Scribe software.

Clip Playback

The clips option for the G7 system enables integrated playout of clips as backgrounds, media objects and textures within your graphics layout. Play media content of any resolution up to full HD. Software codecs enable playout of most Windows® formats, including VIA, AVI, WMV, MPEG-2 and QuickTime*. The clips option also includes a large-capacity media array, consisting of eight 146 GB, front-mounted SAS hard drives in RAID-5 configuration. This ensures optimal bandwidth for HD media playback, while protecting your digital assets.

G-3D™

G-3D™ is a 3D design module that allow users to elevate broadcast graphics design with dramatic true 3D graphics, text and real-time others. Attach audio files to the 3D graphics for playout in SD or HD. Apply custom textures to any 3D surface containing tagged text and G-3D™ provides a deep level of scene editing including timeline modification, image manipulation, primitive shapes, lights, multiple cameras using Automation Interface™ or RTX applications. Use integrated triggers within G-3D™ to control multiple timelines within your scenes between pages.



Direct Control™

Use Direct Control™ to manage networked graphics across a LAN. Resources on an Inscribe system can be viewed and managed from any computer system on the LAN, allowing for editing, displaying and browsing graphics, playlists and rundowns.

Paint

This paint and graphics creation interface possesses multiple layering capabilities, as well as image processing and masking tools. Paint allows native PhotoShop® files (.psd) to be imported into and manipulated within the G-Scribe user environment — while maintaining layers.

3D DVE

The 3D DVE module option is an add-on to the Altitude Express board. The 3D DVE option allows one input to be animated and positioned within 3D space on the output channel. The option can be used in conjunction with the 2D DVE option. One 3D DVE module can be purchased per Altitude Express graphics channel.

Connectus™

Streamline operations. Improve on-air looks. Increase performance. Connectus™ centrally manages your G7 graphics resources for lightning-fast workflows throughout a single facility and

between multiple facilities. With Connectus™, graphics designers, producers and operators have the freedom to create, share, manage and distribute their content to and from any location, any way they choose.

RapidFire™ Keyboard

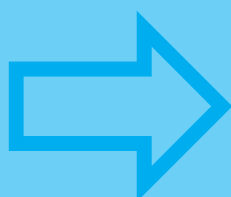
This custom keyboard follows industry-standard commands, enabling operators to quickly recall, take, clear and transfer layouts. The use of these hot keys can dramatically improve layout efficiency in a live environment.

**Note: Not all Quicktime codecs are suitable for real-time HD playback. Results may vary.*



RapidFire™ Keyboard

animations. Create 3D scenes from scratch, or import Collada files from third-party programs such as 3Ds Max®, Maya® and several and graphic content using the familiar G-Scribe CG editor. Tagged fields can be updated manually, or via automation of several varieties. cameras, and many options for texturing. Once a scene has been created, it can be exported and then used as a template for playback s. Triggers can be fired manually, or from within a scene, or from separate 3D scenes allowing operators to create dynamic interaction



Inscriber® G7™

How Strata Compositing™ Works

Strata Compositing™ enables real-time compositing of multiple independently controllable virtual channels into a single physical channel. Use it to output multiple graphic layers — a ticker, a station ID, a lower third and background video, for instance — as a single channel.

Overlay™ — Allows you to have up to three persistent objects per channel. Objects can be independently or simultaneously updated and can have manual or automated tag filling.

Strata Compositing™ — Have up to five independently/simultaneously controlled layouts per system with unlimited objects on each layout. Each layer can be controlled manually using G-Scribe™, or via automation using the industry-standard Intelligent Interface®, MOS, or Direct Control™. From the same system, simultaneously control screen elements using both automation and manual control.

RTXports™ — Have unlimited graphics per system. A custom application controls graphic objects that sit on the top-most layer of the system. RTXports™ are completely independent of Strata Compositing™ and Overlay™.

Overlay™ - Day

Overlay™ - Time

Strata Compositing™ - Upper Locator

Strata Compositing™ - Lower Corner Promo

Strata Compositing™ - Lower Third Name

RTXports™ - Ticker

Live Video/Background



Fully composited graphic for output

Inscriber® G7™ Specifications

HARDWARE

Chassis	4U rackmount Front-mounted, hot-swappable drive bays (8) 1+1 dual redundant hot-swappable power supply - 700 W High CFM cooling for 24/7 operation
HxWxD	7" x 19" x 26.25" (17.78 cm x 48.26 cm x 66.70 cm)
Weight.....	71 lbs (32.2 kg)
CPU.....	2x AMD Opteron 2220 2.8 GHz
GPU.....	Dual-Head NVIDIA® FX4600/768
RAM	4 GB DDR2-667 RAM
Disk Sub System.....	2 x 146 GB SATA system drives (RAID 1) 2 x 146 GB SATA media drives (RAID 1)
Clip Option	8 x 146 GB SAS media drives instead (RAID 5)
Removable Drives	Recordable CD/DVD-RW drive for backup or system restore
External Ports.....	2 Gigabit Ethernet ports via RJ45 2 RS232 serial ports via DB-9 connector 4 USB 2.0 ports – back panel 2 USB 2.0 ports – front panel 4 RJ11 COM ports 1 MDR (Mini D Ribbon) GPI In port (16 inputs) 1 MDR (Mini D Ribbon) GPI Out port (8 inputs)

VIDEO

Supported Video Resolutions	Serial digital component 4:2:2 video @ 1920 x 1080: /60i/59.94i/50i 1920 x 1080: /30p/29.97p/24p/23.98p 1280 x 720: /60p/59.94p/24p/23.98p 720 x 486 (525): /59.94i (ITU-R BT601) 720 x 576 (625): /50i (ITU-R BT601)
SMPTE Standards	SMPTE 292M, SMPTE 259M-C, SMPTE 272M
Video Inputs.....	Two serial digital (SD/HD) Program/Frame Grab input: 4:2:2, 8/10 bit SDI (270 Mb/s @ 525/625 and 1.485 Gb/s for HD) One serial digital (SD/HD) Key input: 4:2:2, 8/10 bit SDI (270 Mb/s @ 525/625 and 1.485 Gb/s for HD) One analog reference input: tri-level sync (HD) or blackburst (SD) terminated/non-terminated under jumper control
Input Levels.....	SDI: 800 mV P-P Analog Ref: 1 V P-P blackburst or 0.6 V P-P for tri-level sync
Input Impedance	75 ohms

Video Outputs.....	One serial digital (SD/HD) Program/Fill output: - 4:2:2, 8/10 bit SDI (270 Mb/s @ 525/625 and 1.485 Gb/s for HD) One serial digital (SD/HD) Key output: - 4:2:2, 8/10 bit SDI (270 Mb/s @ 525/625 and 1.485 Gb/s for HD)
Output Levels	SDI: 800 mv P-P
Output Impedance	75 ohms
Audio Specifications.....	Four input/four output AES/EBU audio channels through the unbalanced/BNC connectors on the separate PC I/O paddle board. On-board audio mixer 3.5 mm stereo jack on faceplate for analog audio monitoring
Additional Features	All internal video processing at 12-bits component 4:2:2:4 (8-bit with 3D DVE option) Video and audio bypass on HD/SDI program input-to-output in the event of a power fail or application reset Shaped or unshaped fill signal processing Internal watchdog timer to ensure hardware stability Monitoring and signal status LEDs GPIO: 24 ports (8 outputs/16 inputs) TTL
Timecode	SMPTe timecode reader BNC connector on the audio paddle board



ONE Company for Workflow Solutions Throughout the Media Chain

Harris is the ONE company delivering interoperable workflow solutions across the entire media delivery chain — providing today's broadcaster with a single, integrated approach to capitalize on the benefits of IT and mobile applications. By providing unparalleled interoperability across our product portfolio, Harris is able to offer customers integrated solutions that improve workflows, save money, enable new revenue streams and provide a migration path to emerging media business models. To meet the evolving needs of broadcast, distribution, government agencies and entertainment businesses, Harris is the ONE answer for change.

Service And Support

At Harris, we are committed to customer service excellence. It is our goal to provide the highest level of support by applying a simple rule: We take ownership of helping our customers succeed. Our support teams consist of innovative technical experts who support all situations regarding product performance, integration and operational processing. We are adept at providing proven solutions, making workflows better and ensuring reliability of the product and system. At Harris, our experienced and dedicated teams stand ready to help you meet your goals for premium product performance, 100% up-time and reduced maintenance investment.

Warranty

Because we want to assure you that Harris stands beside its products and system solutions, our products carry a standard set of warranty services, which are competitive with — and in some cases outperform — others in the industry.

Service Packages

We offer value-add services that allow you to customize the level of services you need in meeting mission-critical performance levels. Our service package options offer many ways to upgrade your standard warranty by choosing the All-Inclusive OnePak, or by selecting individual services from our extensive portfolio. Our service and support advisors can assist in the selection of the individual services that best suit your requirements.

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For more information, please visit www.broadcast.harris.com.

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