Visual Research Inc.
Company and Products Introduction

DEC. 2020

Visual Research Inc.

“Boost your On-Air Graphics”

Table of Contents

About VRi

VRi was established in Seoul, Korea in 1993 to develop a graphics solution for broadcasting. Starting with the development of Korea's first real-time 3D HD character generator, we develop 3D graphic systems, digital disk recorders, and graphic solutions for broadcasting news, weather, and sports. Customers over 20 countries around the world operate with VRi's products.

VRi pursues the development of global broadcasting graphics. The goal is to improve the broadcast workflow and the quality of broadcast graphics through continuous technological innovation. In a free and modern corporate culture, VRi employees are devoting creative efforts to the development of high-quality products.

Contact Us

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Certificates

International Organization for Standardization ISO 9001

TTA Verified

KBS Certified KBS Broadcasting Equipment Certification Center

Hi Seoul 서울시우수기업브랜드 The Excellent Company Brand of Seoul

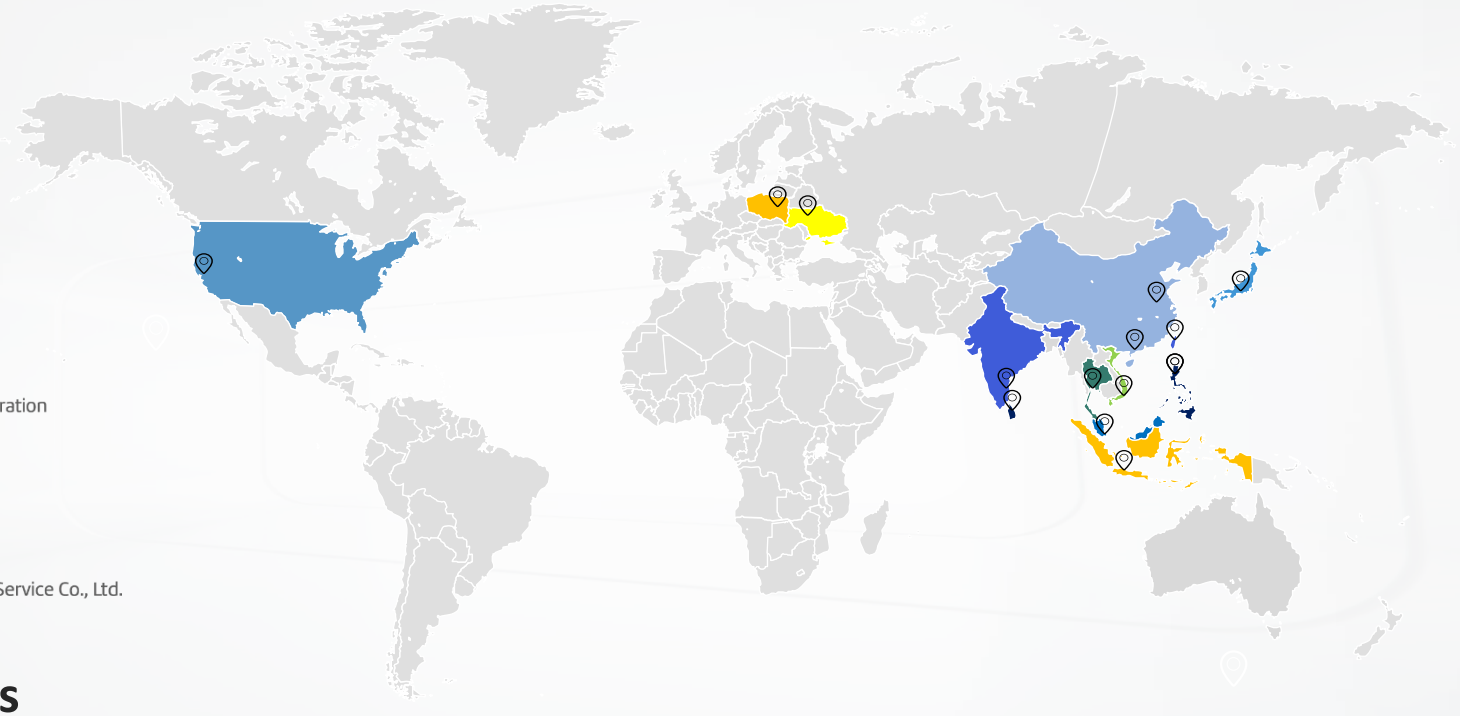
INNOBIZ 기술혁신형중소기업

Global Customers

Global Partners

Resellers

- **China** DLP-Digital Tech, 7D-Vision Tech
- **Indonesia** Alfatech Broadcast Solutions
- **India** Cinthamani Computer
- **Israel** Maagal Sagour
- **Japan** Japan Material Co., Ltd.
- **Philippines** WAM Pacific Inc.
- **Poland** Elsa- Komp
- **Russia** Synchro – Pro
- **Singapore** UBC Technology Pte Ltd.
- **Sri Lanka** S&S Technologies (Pvt) Ltd.
- **Taiwan** Voxel Vision Technology Corporation
- **Thailand** Niva Technologies Ltd.
- **U.S.A** Compix media Inc.
- **Ukraine** OPTA Video
- **Vietnam** VTV Broadcast and Telecom Service Co., Ltd.



Hardware Partners

hp matrox AJA VIDEO SYSTEMS Blackmagicdesign bluefish444 THE PROFESSIONALS' CHOICE

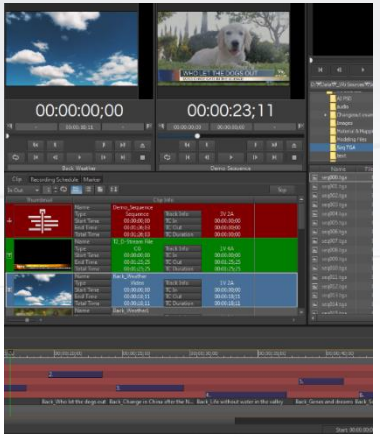
VRi Products

KarismaCG

Real-Time 3D On-Air Graphics System

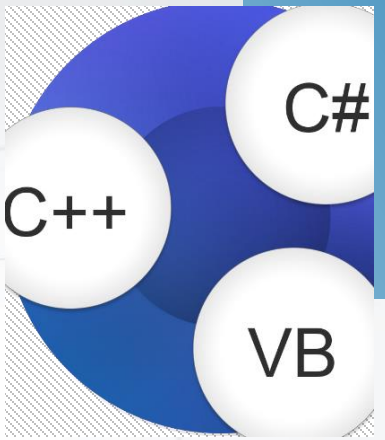
VisualCG

Real-Time Character Generator



Karisma D-Stream

Multi-Format Disk Recorder/Player



KarismaCG SDK

SDK for Graphics Solutions

KarismaCG

Real-Time On-Air 3D Graphics Solution

KarismaCG is an all-in-one broadcast graphics solution optimized for live broadcast environment. With 2D and 3D easy-to-use graphics tools, you can create a variety of graphics for your broadcast environment and playout high-quality 3D graphics in real-time without rendering.

KarismaCG's powerful performance and remarkable graphics will bring your broadcast experience to the next level as a result of decades of broadcast technology and know-how's.

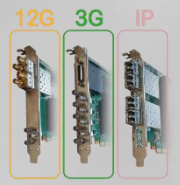
Visual Research Inc.

KarismaCG Features

KarismaCG UHD

KarismaCG's high-performance graphics engine enables real-time 4K playout in as well as 8K. It can playout scenes up to 16 layers simultaneously with millions of polygonal. KarismaCG's performance and stability have been proven in numbers of TV stations for many years.

NEW



Various UHD Formats

12G SDI, 3G SDI quad link (2SI/QSD) and SMPTE ST-2110

High Dynamic Range (HDR)

HDR using Hybrid Log-Gama (HLG), Perceptual Quantizer (PQ), and S-Log3

4K/HD Simultaneous Playout

Played out simultaneously with one KarismaCG even without additional down-scale equipment

Realtime 3D Graphics Playback

The optimized graphics engine for the latest hardware allows to playout gorgeous 3D graphics in real time in HD, 4K as well as 8K environments.

Multi-Layer Playout

Playout simultaneously and control individually up to 16 scene layers

Smooth Video Playback

Supports major video file formats such as XAVC, DNxHD, XDCAM, ProRes, etc.

Live Video Mapping

Use input video as a background during playout or freely place it on the screen

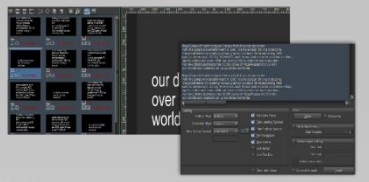
KarismaCG Features

Productive Creation Environment

KarismaCG has built-in tools to help you quickly and easily create complex and many graphics. Features such as a rich library, batch processing of multiple scenes, and templated text import reduce repetitive tasks and simplify complex tasks to help you complete large-scale tasks efficiently.

Practical Libraries

A rich library containing styles, objects, effects, layouts, etc.



Text Import

Import pre-written text and quickly apply scene templates without typing

Batch Scene Editing

Change the background, layout, and font design of multiple scenes at once

Utilizing External Resources

Importing already generated image files makes the task fast. Also 3D model files created in 3D modeling software can be imported including meshes, lights, cameras and animations, and can be modified.

Import PSD Files

Import PSD files as well as PNG, JPG, and TGA images in whole or layer units

Import AI Files

Imported AI files in vector format for further editing or conversion to 3D objects

Import 3D Modeling Files

Import 3D modeling files in various formats such as FBX, DAE, 3DS, OBJ files

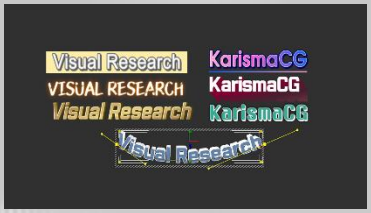
KarismaCG Features

Built in 2D/3D Composition Tools

Built-in tools for creating text, shapes, paths, and 3D objects, support you to create and edit without any external programs. The freely rotatable and zoomable viewport provide convenience for both 2D and 3D editing.

Supporting Various Characters

TrueType, OpenType fonts and Unicode to express various countries such as Asian languages and Arabic

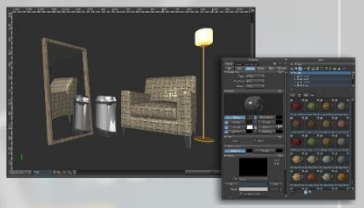


Advanced Font Style

beautiful characters by applying an unlimited number of font effects such as borders, shadows, embosses, and glows to shapes and text

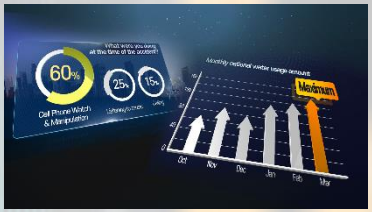
Quick 3D Conversion

Convert shapes and text into eye-catching 3D objects and apply bevels, lofts, and rathe



Realistic Material

Generate realistic textures such as metal, glass, wood and plastic via phone shading



3D Chart

Create easily various 3D charts such as bars, lines, and pies

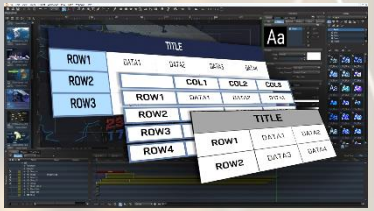


Table in Various Styles

Reduce your creating time by using the table function with various styles

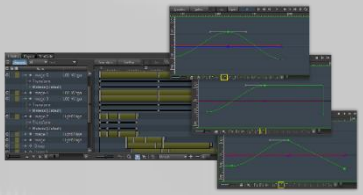
KarismaCG Features

Keyframe Animation

Use advanced keyframe-based animation for motion graphics production. Most object properties, including movement, rotation, and scale, can be animated and previewed on the screen.

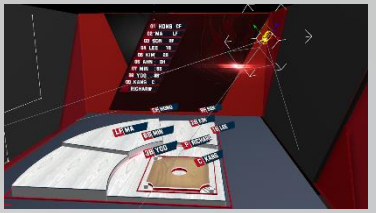
Trigger Animation

Set multiple animations in a single scene, and use the animation you want as the live broadcast situation



Accurate Timeline Editing

Multi-track timeline and spline editors allow for fine-tuned animation tweaking



Camera Animation

Create a dynamic scene using a camera walk

3D Path

Create paths, in 3D space as well as 2D paths, making it possible to create various animations in combination with objects

Various 3D Transition Effects

Make your own scene stand out by using hundreds of 3D transition effects

Particle System

The built-in particle system enables realistic expressions such as flames, water, explosions and fireworks

KarismaCG Features

Real-Time External Data Link

In a live broadcast environment, you can update external data to the scene in real time using ODBC, TXT, or RTF files. Data can be updated by applying a transition effect or scrolled on the screen. Using RTF files, you can change not only text, but also color, font, and size.

NEW Non-Linear Editing Workflow

KarismaCG integrates sequences with NLE systems, allowing you to quickly create large amounts of graphics. You can immediately check the result of the synthesis of the background image and the graphic, making it possible to produce an accurate graphic.

Timecode Editing

Work with Non-Linear Editors

Extension API

KarismaCG provides an API that can be controlled remotely through a TCP/IP network, and it can be used to develop various broadcast graphic applications. The API is provided in COM format and can be used in languages such as C#, C++, and VB.

KarismaCG Line-up

Category	Features	Deluxe	Premium	Supreme
Creation	Built-in 2D/3D Text, Shapes, Path, Geometries	●	●	●
	Clocks (Counter, Timer, Digital Clock)	●	●	●
	Import Images (TGA, JPG, BMP, PNG, AI, PSD)	●	●	●
	VRV and Sequence Image Video	●	●	●
	2D Styles (Edge, Shadow, Glow, Gradation, Texture)	●	●	●
	Roll and Crawl Scenes	●	●	●
	Real-Time External Data-Link (ODBC, EXCEL, TXT, RTF)	●	●	●
	Lights (Point, Directional, Spot)	●	●	●
	Realistic Material Shading (Reflection and Refraction, etc.)	●	●	●
	Key-Frame Animation and Timeline User Interface	●	●	●
	Object and Scene 3D Transition Effects (Wipe, Push, Transform, Curl, Wave, Fade, Particle, Crop, Blur, etc)	●	●	●
Advanced Creation	Table based 3D Chart (Bar, Pie, Area, Line, Bubble, Dot)	-	●	●
	Import 3D Model File (FBX, DAE, OBJ, 3DS, X)	-	●	●
	Particle System and Lens Flare Effects	-	●	●
	Camera Animation	-	-	●
	Multi-Animation for Object and Scene	-	-	●
	3D Bevel Editor	-	-	●
	Multi-Viewport (Perspective Projection, Front, Top, etc.)	-	-	●
	HD Video File Record and Playback (AVI, MXF, MOV, MP4, WMV)	-	-	●
Playout	Multi-Channel Playout	-	-	●
	Live-In Image Grab	●	●	●
	TriCaster, NDI Playout	●	●	●
	Multi-Layer Playout	6	8	16
	Audio Playout (Background, Event)	●	●	●
	Network Automation Server	●	●	●
NPS (Network Production System)	FCP Sequence XML Import/Export TTimecode-based CG Editing and NLE Linkage VCR Control for Tape-Out		Option	
Option	4K UHD		Option	
	Codec Pack		Option	
	DNxHD Codec		Option	

KarismaCG System Requirements

Category	HD	4K
OS	Windows® 10 Pro 64Bit	
CPU	Intel Xeon Silver 4112 2.6GHz or higher	Intel Xeon Gold 6128 3.4GHz or higher
RAM	DDR4 2,666MHz 16GB or higher	DDR4 2,666MHz 32GB or higher
VGA	nVIDIA® Geforce® GTX1660 or higher	nVIDIA® Geforce® RTX2070 or higher
Display	1920x1080 or higher	
Video I/O Boards	Matrox DSX LE4 AJA Kona LHe Plus Blackmagic Design Decklink 8K Pro BlueFish444 Epoch SuperNova CG	NEW Matrox X.mio3 12G, DSX LE5 Q25, DSX LE4 8 AJA KONA 5 12G, CORVID 88 Blackmagic Design Decklink 8K Pro

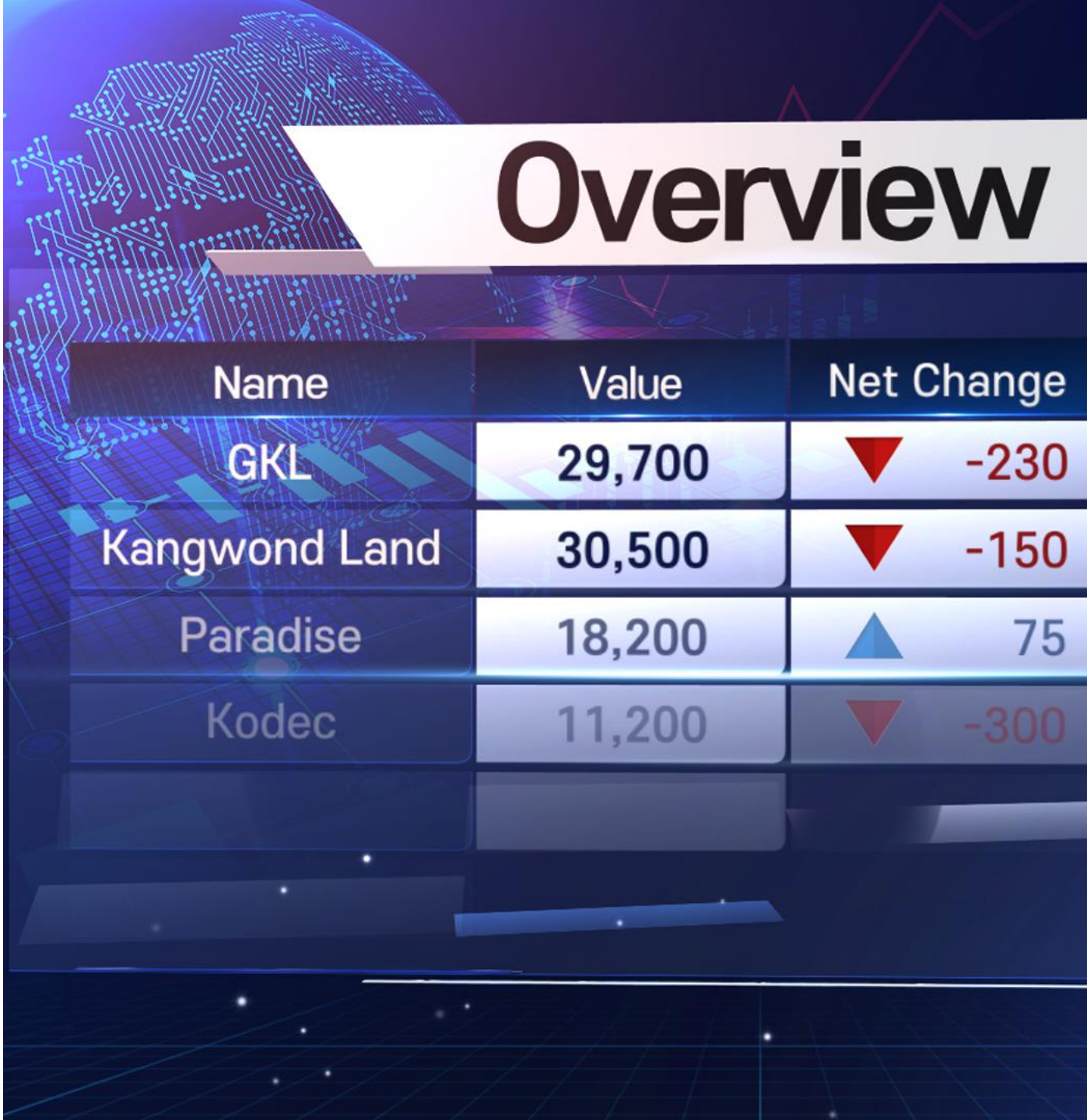
Category	HD	4K
Video I/O	2 x SDI (SD/HD) fill output 1 x SDI (SD/HD) key output 1 x SDI (SD/HD) input	NEW Quad-link 3G SDI: 1 x fill output, 1 x key output 12G SDI: 1 x fill output, 1 x key output, 2 x input 25G IP (SMPTE 2110): 1 x fill output, 1 x key output, 1 x audio output
Video I/O Format	1920 x 1080p @ 50, 59.94fps 1920 x 1080i @ 25, 29.97, 30fps 1920 x 1080p @ 23.98, 24, 25, 29.97, 30fps 720p @ 50, 59.94, 60fps	3840 x 2160p @ 23.98, 24, 25, 29.97, 30, 50, 59.94, 60fps 1920 x 1080p @ 50, 59.94fps 1920 x 1080i @ 25, 29.97, 30fps 1920 x 1080p @ 23.98, 24, 25, 29.97, 30fps 720p @ 50, 59.94, 60fps
Genlock	Analog black burst, tri-level or SDI input signal sync	NEW SDI: Analog black burst, tri-level or SDI input signal sync IP: SMPTE 2059-2
Audio I/O	16 channels AES/EBU audio input and output 16 channels embedded audio on each SDI signal	16 channels audio on each audio signal

VisualCG

On-Air Character Generator

VisualCG is an all-in-one creation and playout real-time character generator. It has extensive range of built-in editing tools and content library that helps users to create stunning graphics in a fast and easy way.

Moreover, it provides a stable and high-performance graphic playout. Experience high productivity and time-saving production environment with VisualCG.



VisualCG Features

Real-time Playout

With a graphics engine optimized for the latest hardware, scenes composed of large amounts of graphics can be delivered in real time with effects.

Multi-Layer Playout

Mix up to four scene layers and playout for logo, clock, scroll, etc. including basic subtitles

Edit During Playout

Edit a scene simultaneously while playing out in one system

On-Air Mode

The playout list can be switched to the icon mode or list mode to easily find a scene

Connecting to external resources

Connect VisualCG with external data or applications to create more diverse creation and playout environments.

Real-Time External Data Link

Update external data to the scene in real time using ODBC, TXT, or RTF files

Extension API

It can be controlled remotely through a TCP/IP network, enabling the development of various broadcast graphic applications

VisualCG Features

Productive Graphics Creation

VisualCG has built-in tools to help you quickly and easily create complex and many graphics. Features such as a rich library, batch processing for multiple scenes, and importing text with templates can help designers efficiently complete large-scale tasks by reducing iteration and simplifying complex tasks.

Intuitive User Interface

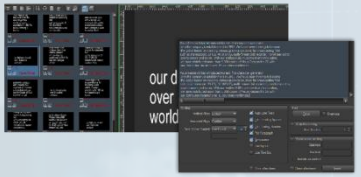
The intuitive interface as the user's task process

Multi-Project Interface

Create multiple projects in one system

Practical Libraries

Quickly create high-quality graphics with a rich library of built-in styles, objects, effects, and layouts

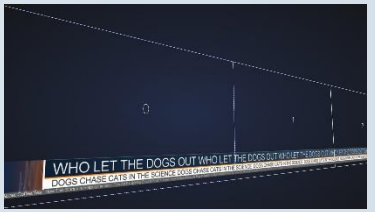


Text Import

Import pre-written text and quickly apply scene templates without typing

Batch Scene Editing

Change the background, layout, and font design of multiple scenes at once



Convenient Scroll Creation

Rolls or scrolls can be conveniently created in any direction, up, down, left, or right

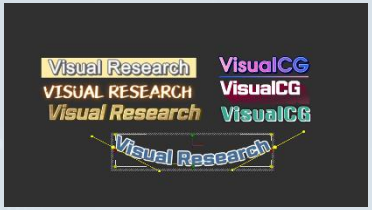
VisualCG Features

Various Objects and 2D Styles

Built-in tools for creating text, shape, and path authoring tools support you to create various graphics without any external programs.

Supporting Various Characters

Supporting TrueType, OpenType fonts and Unicode, to represent characters such as Asian languages and Arabic



Advanced Font Style

Beautiful characters by applying an unlimited number of font effects such as borders, shadows, embosses, and glows to shapes and text

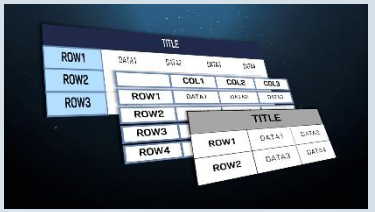


Table in Various Styles

Various styles can greatly reduce the creation time

Import PSD Files

Import PSD files in whole or layer units, making file management and utilization easy

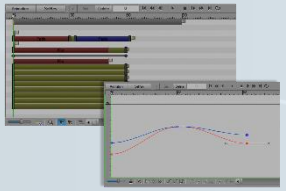
Import AI Files

Imported AI files in vector format for further editing

VisualCG Features

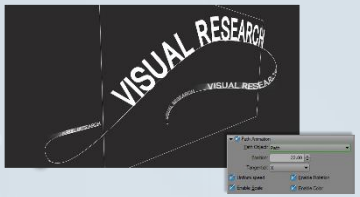
Key-Frame Animation

VisualCG provides advanced keyframe-based animations for motion graphics production. You can animate and preview most object properties, including movement, rotation, and scale.



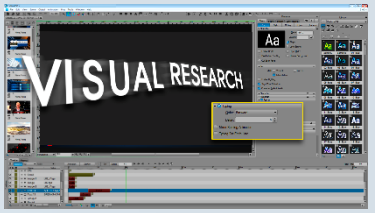
Accurate Timeline Editing

Track mode and graph mode for sophisticated animation production



3D Path

Create paths, in 3D space as well as 2D paths



Typing Animation

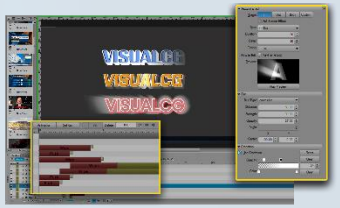
Create a typing effect easily by character keyframe animation

Mask Effect

Set an image or object as a mask for your various design

Various 3D Transition Effects

Easily make your scene stand out by using hundreds of 3D transition effects



Customizable Effects

Adjust the various properties of the effect and combine it with keyframe animations

VisualCG Line-up

Category	Features	VisualCG	VisualCG Plus
Creation	Built-in 2D Text, Shapes, Path Tools	●	●
	Clocks (Counter, Timer, Digital Clock)	●	●
	Import Images (TGA, JPG, BMP, PNG, AI, PSD)	●	●
	VRV and Sequence Image	●	●
	2D Styles (Edge, Shadow, Glow, Gradation, Texture)	●	●
	Curved Text	●	●
	Object Mask	●	●
	Crawl, Roll Scenes	●	●
	Timeline UI	●	●
	Real-time External Data Link (ODBC, EXCEL, TXT, RTF)	●	●
	Built-in Library	●	●
	Object and Scene Transition Effect (Wipe, Push, Transform, Curl, Wave, Fade, Particle, Crop, Blur, etc.)	●	●
Playout	Audio Playout (Background, Event)	●	●
	Live-In Image Grab	●	●
	TriCaster, NDI Playout	●	●
	Multi-Layer Playout	1	4
	Network Automation Server	●	●
Animation	Key-Frame Animation	-	●
	Text-Typing Animation	-	●
	Animation using 3D Path	-	●

VisualCG System Requirements

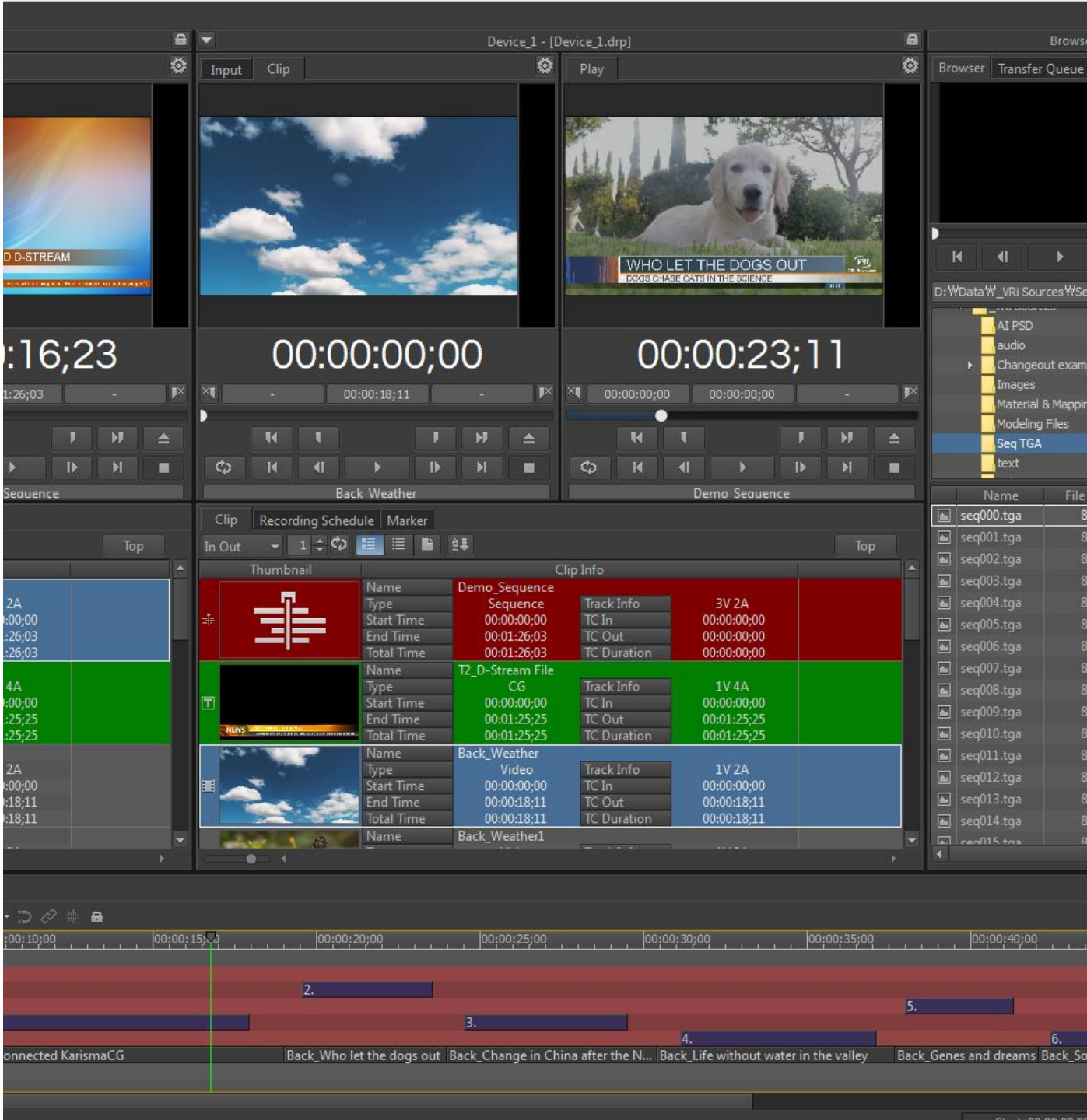
Category	VisualCG / VisualCG Plus
OS	Windows® 10 Pro 64Bit
CPU	Intel® Core™ i7-8700 Processor or higher
RAM	DDR4 2,400MHz 8GB or higher
VGA	nVIDIA® Geforce® GTX1650 or higher
Display	1920x1080 or higher
Video I/O Boards	Matrox DSX LE4 AJA KONA LHe Plus Blackmagic Design DeckLink 8K Pro BlueFish444 Epoch SuperNova CG

Category	VisualCG / VisualCG Plus
Video I/O	1 x SDI (SD/HD) fill output 1 x SDI (SD/HD) key output 1 x SDI (SD/HD) input
Video I/O Format	1920 x 1080i @ 25, 29.97, 30fps 1920 x 1080p @ 23.98, 24, 25, 29.97, 30, 50, 59.94fps 1920 x 1080p @ 23.98, 24fps 720p @ 50, 59.94, 60fps
Genlock	Analog black burst, tri-level or SDI input signal sync
Audio I/O	Support up to 16 channels AES/EBU audio input Support up to 16 channels AES/EBU audio output Support up to 16 channels embedded audio on each SDI signal

Karisma
D-Stream
Digital Disk Recorder Player

D-Stream is a multi-format disk recorder that can be used for editing/sending/recording, etc. You can create SDI input signals into files with various codecs or output video files as SDI.

With built-in sequence editor and CG mixing, D-Stream can playout in real time, increasing the productivity of live broadcast and post production.



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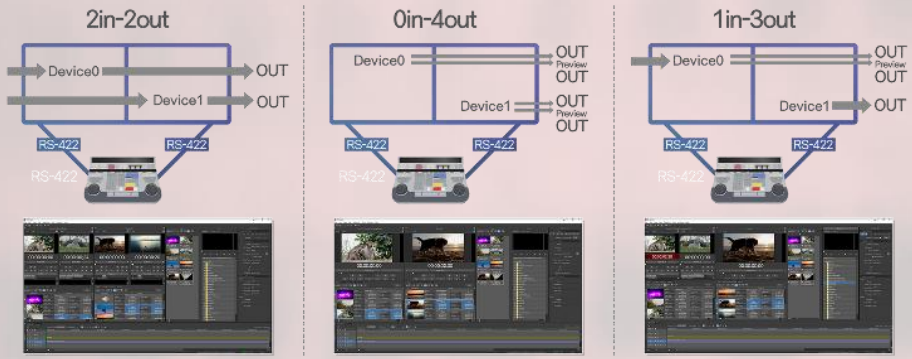
D-Stream Features

Multi-Channel Record and Playback

Support 4 input/output channels, and various input/output configurations. For HD and 4K (2160p), you can use up to 2 recordings or 2 playbacks, or 1 recording 1 playback.



4K I/O

Simultaneous recording or playback of 2 channels of 4K 60p. Both of 4K input/output support 3G quad link (2SI/SQD), 12G and IP.

Various Video I/O Formats

Various input/output video formats such as SD (NTSC, PAL), HD (720p, 1080i, 1080p), and 4K (2160p).

Video fill & key recording/playback

Selectable 2-channel input/output or simultaneous Fill and Key recording/playback mode.

Native 10-bit Processing

Record high-quality video via internal 10-bit processing for recording with Codecs such as Avid DNxHD and Apple ProRes 4444 can record high-quality video without increasing the file size, minimize video loss.

D-Stream Features

Flexible Recording Methods

D-Stream can record and playback with accurate timecode using various actual codecs in broadcasting

Scheduled Recording

Record daily and weekly as recurring schedules.

Time Delay Instant Replay (TDIR)

Playout or video edit on another device while recording the input video as a file, without waiting for the recording to be completed.

Simultaneously Creating Proxy

D-Stream simultaneously records proxy simultaneously when recording original high-definition video.

TC Break Recording

Create files for each successive timecode section when recording from a tape. It makes multiple recorded files in one operation

Record Markers

Search easily the wanted frame or an error frame by marking during recording.

D-Stream Features

Adapting to Linear Editing Workflow

Switch gradually to a file-based edit environment from a
linear edit environment by replacing tape-based VCR to D-Stream

Work with Editor or VTR

D-Stream supports 9-pin control and can be used in linkage with an editor, VTR recorder or a player. Control a linear editor, a VTR recorder and a player through 9-pin.
· D-Stream control in editor
· Control for output from D-Stream to VTR(D-Stream VTR)
· VTR to D-Stream recording control(VTR D-Stream)

Built-in Functions for Linear Editing

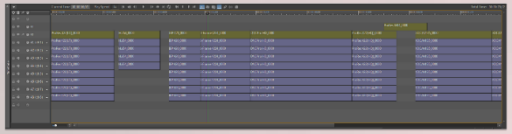
Control the BVE editor with Sony 9-pin control to use following editing functions.
· Assemble/insert editing · Split editing
· Pre-read editing · Drop/non-drop frame
· Audio editing · Field recording
· Hardware EE mode

D-Stream Features

Real-Time Non-Linear Editing

Simplify the workflow by editing of multi-track sequences consisting of video, audio, graphics, and playing out the created sequence in real-time.

Multi-Track Sequence Editing



Place video and audio and scenes on the timeline and edit a video track easily by timeline-based editing functions. You can use trimming, mark in/out, and transition effects, too.

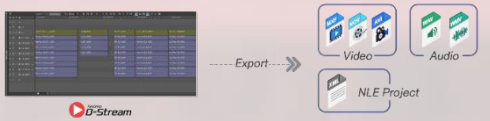
Real-Time CG Mixing and Playout

Create a scene files by KarismaCG and place them on the timeline by D-Stream. Mixing and playing out without rendering in real-time is also available.

Import Sequence from NLE

Import video, audio, and CG editing sequence from NLE into the D-Stream timeline and playout them in real-time so that reduce rendering time.

Export Sequence to NLE



Export edited sequence of D-Stream as a video file with various codecs. D-Stream can create a file in a shorter time than the actual play time of the video even for the multi-track timeline rendering.

Supported Media File Formats

Format	HD	4K
AVI	DVCPro HD MPEG-2 I-Frame 4224/422 MPEG-2 IBP 420/422	MPEG-2 I-Frame 4224/422
MOV	DVCPro HD XDCAM HD422 ProRes 4444/422/422(HQ)/422(LT)/422(Proxy) H.264	ProRes 422/422(LT)/422(HQ)/422(Proxy)
MXF	MPEG-2 DVCPro HD AVC-Intra 100/50 DNxHD 220/220x/145/100 XDCAM HD 35/25/422S XAVC Intra Class 100 CBG XAVC Long GOP 50/35/25	XAVC Intra Class 300, 480 CBG/VBR XAVC Long GOP 140/200
MP4	MPEG-2 H.264	-
Graphic Files	TGA, BMP, JPG, PSD, TIF, GIF, PNG VRV (VRi Video), T2P (KarismaCG Project), T2S (KarismaCG Scene)	

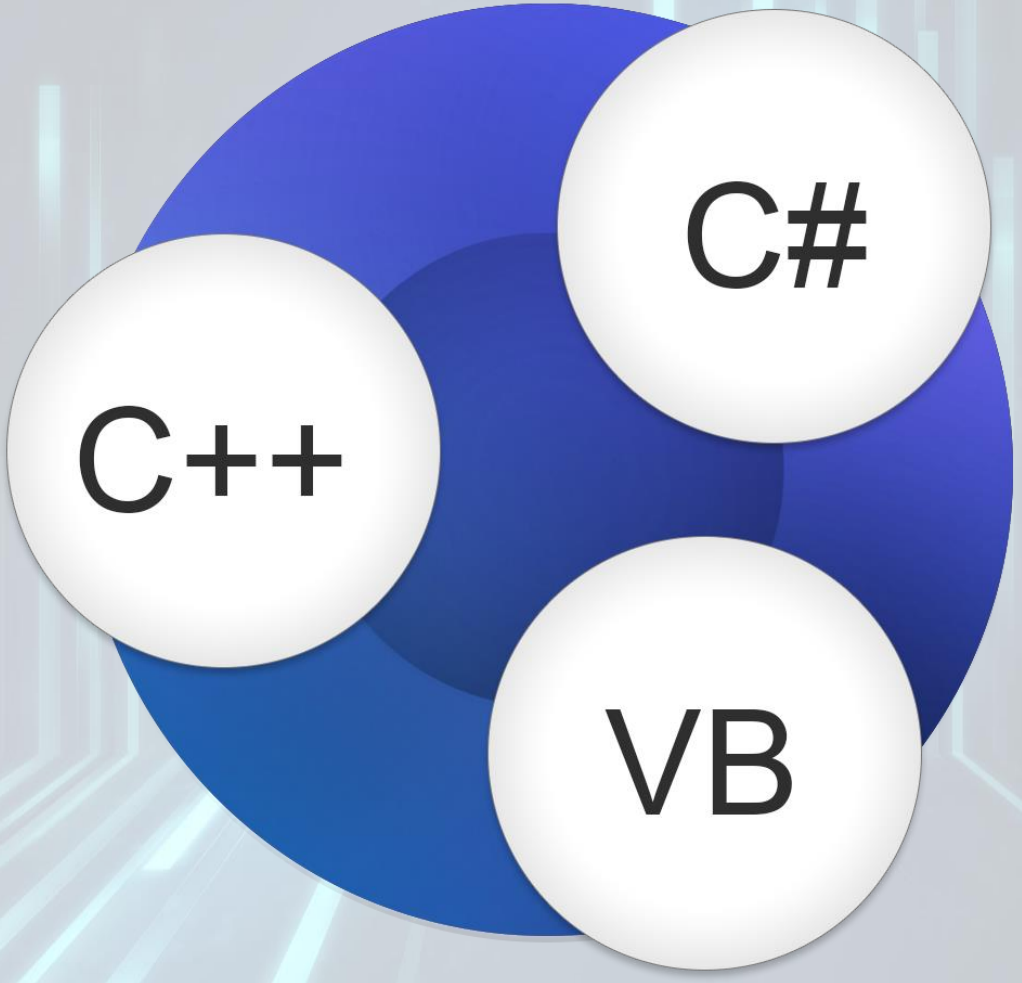
D-Stream System Requirements

Category	HD	4K
OS	Windows 10 Pro 64bit	
CPU	Intel® Core™ i7-7700K 4.2 GHz	Dual Intel® Xeon Gold 5218 2.3 GHz
RAM	DDR4 16GB 2,133MHz (2x8GB)	DDR4 64GB 2,666MHz (4x16GB)
VGA	Intel® HD Graphics 630 or higher	NVIDIA GeForce RTX 2070 or higher
Display	1920x1080 or higher	
Video I/O Boards	Matrox DSX LE4 (LP/FH/BNC) 4 100/500/550 Matrox X.mio3 (LP/FH) 4 100/500/550	NEW 12G SDI: Matrox X.mio3 12G 550 25G IP: Matrox DSX LE5 Q25 Quad-link 3G SDI: Matrox X.mio3 FH X2 550 Matrox X.mio3 (LP/FH) 8 550 Matrox DSX LE4 FH X2 550
XAVC Accelerator	-	Matrox M.264 S1 or S2

Category	HD	4K
I/O Channel	2 x Input 2 x Output	NEW Quad-link 3G SDI: 3 x I/O (SQD, 2SI) 12G SDI: 2 x I/O 25G IP (SMPTE 2110): 2 x I/O
Video I/O Format	1920 x 1080i @ 25, 29.97, 30fps 1920 x 1080p @ 23.98, 24, 25, 29.97, 30fps 1920 x 1080psf @ 23.98, 24fps 720p @ 50, 59.94, 60fps 576i @ 25fps 486i @ 29.97fps	3840 x 2160p @ 23.98, 24, 25, 29.97, 50, 59.94, 60fps 1920 x 1080i @ 25, 29.97, 30fps 1920 x 1080p @ 23.98, 24, 25, 29.97, 30fps 1920 x 1080psf @ 23.98, 24fps 720p @ 50, 59.94, 60fps
Reference	Analog black burst, tri-level or SDI input signal sync	NEW SDI: Analog black burst, tri-level or SDI input signal sync IP: SMPTE 2059-2
Audio	16 channels AES/EBU audio input 16 channels AES/EBU audio output 16 channels embedded audio on each SDI signal	16 channels audio on each audio signal

KarismaCG SDK

KarismaCG SDK is a development toolkit for creating customized broadcast graphics applications for events such as news, live sports, election graphics, and so on. This SDK enables users to build their own unique graphics display for their needs.



SDK Features

K3DAsyncEngine

KarismaCG Remote Control API

K3DAsyncEngine is a simple interface that controlsKarismaCG via TCP/IP network. It can conduct KarismaCG to load CG template and change the contents and animation in templates. Developer can use this API to develop custom broadcast graphic applications. KarismaCG is used to design CG template and used as a playout server.

Features

- Supports COM interface
- Remote control of KarismaCG via TCP/IP
- Sample applications and codes
- Enabled for users who have automation server (KAP) option

K3DEngine

On-Air Graphics Playout Engine

K3DEngine is an SDK module that allows direct control of KarimaCG playout engine. With K3DEngine, you can easily create a customized broadcast graphics playout application that fits your need. K3DEngine can be used for events such as news, live sports, election, stock ticker, weather forecast and more.

Features

- Advanced real-time 3D Graphics Engine and API (Application Programming Interface)
- Template based workflow when graphic template is created from KarismaCG
- Support various programming languages
- Supports COM interface
- Easy and fast playout program creation environment