



From BT-SC/ETP-MKP1	Product Management	Nuremberg 15.10.2019
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Release Letter

Product:	<i>VIDEOJET decoder 7000</i> <i>VJD-7513</i>
Version:	<i>Firmware 9.51</i>

This letter contains latest information about the above mentioned product.

1. General

This initial release covers the multi-stream, dual-monitor high-performance H.265 UHD decoder VIDEOJET decoder 7000 (VJD-7513).

VIDEOJET decoder 7000 uses robust, fan-less technology designed for ambitious environmental conditions while providing maximum performance on minimum space in a nicely designed industrial housing.

VIDEOJET decoder 7000 displays video from Standard Definition (SD), High Definition (HD), 4K Ultra High Definition (UHD), and Megapixel (MP) cameras and encoders using H.265, H.264 or MPEG-4 encoding at up to 60 frames per second over IP networks.

VIDEOJET decoder 7000 is the successor of VIDEOJET decoder 8000 (VJD-8000, VJD-8000-N). It is using the same housing but comes with different video output interfaces, and provides improved performance and functionality.



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2. Features

- VIDEOJET decoder 7000 displays video from Standard Definition (SD), High Definition (HD), 4K Ultra High Definition (UHD), and Megapixel (MP) cameras and encoders using H.264 or MPEG-4 encoding at up to 60 frames per second over IP networks.
- VIDEOJET decoder 7000 provides an HDMI and a DisplayPort (via USB-C connector) output, both capable of driving up to 4K UHD displays simultaneously.
- Display settings are automatically discovered and set for optimal display performance.
- Monitor layouts can be switched independently for each display.
- Upright monitors (portrait mode) are supported.
- Video window (cameo) aspect ratio can be set to 16:9, 9:16, 3:4, or 1:1.
- Active camera connections and layout are stored and automatically reconnected after reboot if configured.
To avoid deadlock in case of an overload situation the automatic reconnect will be deactivated after VIDEOJET decoder 7000 was forced into reboot for 3 times within 10 minutes.
- Video smoothing can be configured.
- RTSP connections are supported, enabling connectivity to 3rd party and ONVIF cameras.
- Discovery port is configurable.
- Cameo distance is configurable.
- VIDEOJET decoder 7000 supports IP Matrix application as built-in feature.
- VIDEOJET decoder 7000 is able to display VCA metadata.
- VIDEOJET decoder 7000 provides bi-directional G.711 audio for the video stream shown in single view on the first monitor.
- Configuration is done using the Configuration Manager.
- The number of decoders presented in capabilities is configurable to regulate the consumption of VMS licenses. Default value is 30.
- System access is password-protected with two levels.
- The system firmware can be upgraded remotely.
- System API is compatible to predecessor VIDEOJET decoder 8000 for easy plug-and-play integration.
- Operating temperature is
 - 0 °C to +50 °C (+32 °F to +122 °F) ambient temperature, with airflow
 - 0 °C to +40 °C (+32 °F to +104 °F) ambient temperature, still air

For detailed functional description, please refer to the VIDEOJET decoder firmware 9.51 release notes.

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3. System

- VIDEOJET decoder 7000 is based on Intel’s seventh generation Core i3 CPU.
- The system has a 64 GB SSD module to store the operating system and application.
- The system runs a tailored and Bosch-branded Microsoft Windows 10 IoT Enterprise operating system and Monitor Wall software based on UHD-capable VideoSDK 6. Making use of Intel’s hardware decoding accelerators, the software is fine-tuned for HD, 4K UHD and MP video decoding support.
- VIDEOJET decoder 7000 provides an HDMI and a DisplayPort (via USB-C connector) output, both capable of driving displays of up to 4K UHD simultaneously.
- The device utilizes a 10/100/1000Base-T port.
- The system is enclosed in a specially designed housing. It can be directly mounted to the back of a display, or wall-mounted, using the 100 mm (3.937 in) VESA mount option.

For detailed technical specification please refer to the datasheet.

4. Display output modes

Scaling of video towards a display, especially upscaling to UHD, draws quite some performance. Therefore, UHD displays are driven with a reduced screen refresh rate and share the maximum decoded output frame rate to allow a similar number of streams connected to the decoder, regardless of the connected displays.

Mode	Display resolution	Number of displays	Screen refresh rate (Hz)	Max. decoded output frame rate
A	HD (1920 x1080)	1	60	60
A	HD (1920 x1080)	2	60	60
B	UHD (3840 x2160)	1	30	30
C	UHD (3840 x 2160)	2	30	15



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5. Decoding Performance

VIDEOJET decoder 7000 is capable of decoding streams according to the following tables:

Stream performance H.264

Stream parameters	Bit rate	Display output mode		
		A	B	C
Resolution @ frame rate	Mbps			
3840x2160@30	32	5	3	4
2992x1690@30	16	7	5	6
1920x1080@60	12	7	5	6
1920x1080@30	8	14	10	12
1280x720@60	6	12	10	12
1280x720@30	4	22	16	20
768@432@30	2	24	20	24
512x288@30	1	28	20	24

Stream performance H.265

Stream parameters	Bit rate	Display output mode		
		A	B	C
Resolution @ frame rate	Mbps			
3840x2160@25	32	5	3	4
1920x1080@60	12	7	5	6
1920x1080@30	8	14	10	12
1280x720@60	6	12	10	12
1280x720@30	4	22	16	20



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6. Restrictions; Known Issues

- Some VIDEOJET decoder 7000 devices may reach maximum performance already slightly below the specified maximum temperature due to component tolerances and a tight margin. The next firmware 9.60 will increase the margin to ensure all products to adhere fully to their specification.
- IntuiKey keyboard is not supported.
- Analogue monitors are not supported.
- Connecting encrypted streams without proper signalling may result in crashing the software decoder instance, resulting in black video displayed.
- Alarms will not be signaled with a red border around the cameo if connection was established using CONNECT_PRIMITIVE.
- Using CONNECT_PRIMITIVE via TCP is not possible.
- CONNECT_PRIMITIVE does not support "first available" feature.
- Audio may remain audible despite layout change to other than single view.
- RCP+ command CONF_ALARM_CONNECT_TO_IP is not supported.
- Alarm connection does not support audio.
- Maximum password length is 19 characters.
- ONVIF 2.0 conformance is not yet provided with this firmware release. (Earlier ONVIF specifications do not include decoder support yet.)
- VIDEOJET decoder 7000 is supported by BVMS 4.5.5 only with a single monitor.

7. System Requirements

For configuration purposes:

- Configuration Manager 6.2x for basic configuration
- Configuration Manager 7.0 or newer for fully supported configuration

For operation purposes:

- with Bosch Video Client 1.4 SR3 or higher
- with Bosch Video Management System 4.5.5 or higher
- stand-alone with integrated IP Matrix functionality