



From
ST-VS/MKP1

Product Management

Nuremberg
15.07.2019

Release Letter

Products:	<i>Combined Firmware for CPP7.3 UHD/HD/MP cameras CPP7 HD/MP cameras CPP6 UHD/MP cameras CPP5 encoders CPP4 HD cameras CPP3 cameras and encoders CPP-ENC H.264 encoders</i>
Version:	<i>7.10.0711</i>

This letter contains latest information about the above mentioned firmware version.

1 General

This firmware release is a combined firmware package, applicable to H.264 and H.265 products based on one of the following platforms.

Changes since last release are marked in [blue](#).



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

This firmware supports:

- CPP7.3 HD and UHD cameras
 - upgrade from FW < 6.50 to intermediate FW 6.50
 - [upgrade from FW 6.50 \(<6.51\) to latest FW 7.10](#)
- CPP7 HD cameras
 - upgrade from FW < 6.50 to intermediate FW 6.50
 - [upgrade from FW 6.50 \(<6.51\) to latest FW 7.10](#)
- CPP6 UHD cameras
 - upgrade from FW < 6.50 to intermediate FW 6.50
 - [upgrade from FW 6.50 \(<6.51\) to latest FW 7.10](#)
- CPP5 encoders
 - upgrade from FW 5.91 or newer to latest FW 6.31
- CPP4 HD cameras
 - upgrade from FW < 6.10 to intermediate FW 6.11
 - upgrade from FW < 6.50 to intermediate FW 6.50
 - upgrade EXTEGRA from FW 6.10 or newer to latest FW 6.32
 - [upgrade from FW 6.50 \(<6.51\) to latest FW 7.10](#)
- CPP3 cameras and encoders
 - upgrade from FW 4.54.0026 or newer to latest FW 5.74
- CPP-ENC encoders and decoders
 - VIP-X1600-XFM4 encoders: upgrade from FW 4.2x or newer to latest FW 5.54
 - VJT XF, VJD-3000 and VJC-7000 upgrade to latest FW 5.97

The combined firmware package includes the following build versions:

- [CPP7.3 FW 7.10.0074](#)
- CPP7.3 FW 6.50.0133
- [CPP7 H.264 7.10.0074](#)
- CPP7 H.264 6.50.0133
- [CPP6 H.264 7.10.0074](#)
- CPP6 H.264 6.50.0133
- CPP6 H.264 6.11.0026
- CPP5 H.264 6.31.0007
- [CPP4 H.264 7.10.0076](#)
- CPP4 H.264 6.50.0133
- CPP4 H.264 6.32.0124_EXTEGRA_only
- CPP4 H.264 6.11.0026
- CPP3 H.264 5.74.0010
- CPP-ENC H.264 5.97.0013 for VJT XF family, VJD-3000 and VJC-7000
- CPP-ENC H.264 5.54.0012 for VIP X1600 XFM4

For detailed description please refer to the separate release letters.



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

2 Important notes:

2.1 *End of Feature for CPP4 – Maintenance mode started*

With release of FW 7.10, feature implementation for the CPP4 platform ends, and the firmware development will switch over into maintenance mode. The firmware branch for CPP4 is now treated as a **long-term supported firmware (LTSFW)**, with its code base frozen to allow bug fixing and applying security fixes where necessary.

2.2 *Intermediate update steps*

To upgrade to a newer firmware version using this combined firmware package, products may require to have this firmware file uploaded multiple times until the intended firmware version is installed. Since intermediate firmware versions might have vulnerabilities that are fixed in later versions, it is advised to always install up to the most recent version.

2.3 *Two-factor authenticated firmware signature*

The security of the signature of the firmware file has been strengthened by using a two-factor authentication process for signing the final released firmware file. This new process has been prepared for with firmware 6.50 and comes into effect with succeeding versions.

The new signature protects from non-released versions being installed in productive systems. As a result, pre-release (beta) versions, required sometimes in projects, need to have a special license installed prior to the firmware update. Requests for pre-release versions need to be handled via tech support tickets in order to allow tracking and require a concession signed by the customer.

In case a firmware must be downgraded from a device with firmware 6.51 or higher installed, the downgrade is only possible via firmware 6.50 with an updated signature. Please contact our customer service or technical support to get a link to this firmware.

Note:

This combined firmware file is not applicable to devices running firmware higher than FW 6.50 due to the two-factor authenticated release signature.

2.4 *Firmware file encryption*

In order to upload version 6.51 to a device running a firmware version below 6.50, you need to upgrade first to version 6.50, since older firmware versions do not support firmware file decryption. This can be achieved by uploading this firmware file multiple times until the required firmware version is installed.



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

2.5 “Originally manufactured” certificate

Since firmware version 6.30 all cameras are prepared to receive a unique Bosch certificate during production, assigned and enrolled by Escript LRA. These certificates prove that every device is an original Bosch-manufactured and untampered unit.

Escript is a Bosch-owned company, providing a public certificate authority (CA).

Deployment of the certificates in production is asynchronous to this firmware release.

2.6 File System Introduction on CPP4

Due to an internal file system being introduced since firmware 6.1x and architectural changes thereof, an upgrade of CPP4 cameras to firmware 6.2x and higher is only possible from firmware 6.1x versions or higher.

CPP4 cameras with previous firmware versions below 6.1x first need to upgrade to firmware 6.1x.

This can be achieved by uploading this firmware file multiple times until the required firmware version is installed.

2.7 TPM

Some devices incorporate a Trusted Platform Module (TPM) with own firmware. This TPM hardware and firmware have been enhanced over time to allow for additional security features.

The same product that is produced over a longer period may be equipped with different versions of TPM firmware.

Due to security reasons, the firmware or functionality of the TPM cannot be altered in the field.

Thus, not all new security features become available on devices with older TPM hardware or firmware revisions.

2.8 CPP5

This combined firmware cannot be applied to CPP5 products with firmware version older than 5.91.

It is required to upgrade to intermediate firmware 5.91 first.



From
ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

3 Applicable products:

CPP7.3

- AUTODOME IP 4000i
- AUTODOME IP 5000i
- AUTODOME IP starlight 5000i (IR)
- AUTODOME IP starlight 7000i
- DINION IP bullet 4000i
- DINION IP bullet 5000
- DINION IP bullet 5000i
- DINION IP bullet 6000i
- FLEXIDOME IP 4000i
- FLEXIDOME IP 5000i
- MIC IP starlight 7000i
- MIC IP fusion 9000i

CPP7

- DINION IP starlight 6000
- DINION IP starlight 7000
- FLEXIDOME IP starlight 6000
- FLEXIDOME IP starlight 7000
- DINION IP thermal 8000



From
ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

CPP6

- DINION IP starlight 8000 12MP
- DINION IP ultra 8000 12MP
- DINION IP ultra 8000 12MP with C/CS mount telephoto lens
- FLEXIDOME IP panoramic 7000 12MP 180
- FLEXIDOME IP panoramic 7000 12MP 360
- FLEXIDOME IP panoramic 7000 12MP 180 IVA
- FLEXIDOME IP panoramic 7000 12MP 360 IVA
- FLEXIDOME IP panoramic 6000 12MP 180
- FLEXIDOME IP panoramic 6000 12MP 360
- FLEXIDOME IP panoramic 6000 12MP 180 IVA
- FLEXIDOME IP panoramic 6000 12MP 360 IVA

CPP5

- VIDEOJET multi 4000
- VIP-X16XF-E



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

CPP4 (formerly IPBE4)

- AUTODOME IP 4000 HD
- AUTODOME IP 5000 HD
- AUTODOME IP 5000 IR
- AUTODOME 7000 series
- DINION HD 1080p
- DINION HD 1080p HDR
- DINION HD 720p
- DINION imager 9000 HD
- DINION IP bullet 4000
- DINION IP bullet 5000
- DINION IP 4000 HD
- DINION IP 5000 HD
- DINION IP 5000 MP
- DINION IP starlight 7000 HD
- EXTEGRA IP dynamic 9000
- EXTEGRA IP starlight 9000
- FLEXIDOME corner 9000 MP
- FLEXIDOME HD 1080p
- FLEXIDOME HD 1080p HDR
- FLEXIDOME HD 720p
- Vandal-proof FLEXIDOME HD 1080p
- Vandal-proof FLEXIDOME HD 1080p HDR
- Vandal-proof FLEXIDOME HD 720p
- FLEXIDOME IP panoramic 5000
- FLEXIDOME IP indoor 5000 HD
- FLEXIDOME IP indoor 5000 MP
- FLEXIDOME IP indoor 4000 HD
- FLEXIDOME IP indoor 4000 IR
- FLEXIDOME IP outdoor 4000 HD
- FLEXIDOME IP outdoor 4000 IR
- FLEXIDOME IP micro 5000 HD
- FLEXIDOME IP micro 5000 MP
- FLEXIDOME IP outdoor 5000 HD
- FLEXIDOME IP outdoor 5000 MP
- FLEXIDOME IP micro 2000 HD
- FLEXIDOME IP micro 2000 IP
- IP bullet 4000 HD
- IP bullet 5000 HD
- IP micro 2000
- IP micro 2000 HD
- MIC IP dynamic 7000
- MIC IP starlight 7000
- TINYON IP 2000 family



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

CPP3 (formerly IPBE3)

- AUTODOME Easy II IP series
- AUTODOME Junior HD, Jr HD fix
- AUTODOME 700 IP IVA
- AUTODOME 800
- AUTODOME Junior 800
- VG4 AUTODOME IP series
- VG5 AUTODOME IP series
- DINION XF 720p+, NBN-921-P
- DINION XF, NBC-455-P
- DINION 2X, NBN-498-P
- FLEXIDOME XF 720p+, NDN-921-P
- FLEXIDOME XF, NDC-455-P
- FLEXIDOME 2X, NDN-498-P
- Economy Box Cameras, NBC-225 series, NBC-255 series, NTC-255-PI
- Economy Dome Cameras, NDC-225 series, NDC-255 series
- Economy HD Box Cameras, NBC-265 series, NTC-265-PI
- Economy HD Dome Cameras, NDC-265 series, NDN-265-PIO
- Extreme series EX30 IR, NEI-30 IR Imager
- Far Infra-Red camera, VOT-320
- VIP X1 XF Single-Channel H.264 Encoder
- ~~WLAN cameras NBC-255-W and NBC-265-W~~
- Economic version VIP-X1XF-E
- Video Conference Dome IVA
- REG 1.5 IP and REG L2
- MIC IP PSU

CPP-ENC (formerly VIPX H.264)

- VIP-X1600-XFM4
- VJT-X20/X40XF-E
- VJT-XTCXF
- VIDEOJET decoder 3000, VJD-3000
- VIDEOJET connect 7000, VJC-7000

From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

4 New Features for CPP7.3 products

- A dashboard, available under service permissions, provides a compact but extensive view on parameters that might be especially helpful for troubleshooting. An export function provides even more details than displayed on the dashboard page.
- Intelligent Streaming has been enhanced by a “Dynamic sharpness and noise filtering” option, which uses information from the encoder to optimize the image processing according to the encoder requirements. An additional bitrate reduction of up to 25% can be achieved.
- Scene mode names in fixed cameras have been adapted to reflect their intended use cases better and synchronized between fixed and moving cameras. Scene modes settings have been tuned accordingly to better match their intended applications.
- IP address can now be changed dynamically during runtime, not requiring a reboot cycle anymore. This allows for quarantine network transition on 802.1x network configurations as well as for dynamic IP address assignment from DHCP.
- Support of China GB/T 28181 has been updated to comply with 2016 standard.
- AES encryption on RTP connections is now possible, allowing encrypted UDP multicast connections in a BVMS setup.
- Default value for TLS has been set to version 1.2 to increase security by default. This may cause incompatibility with older client applications.
- Session cookie has been secured by default, disallowing authentication forwarding to MPEG ActiveX and other applications, like replay via Video Security Client. Re-authentication is required for these applications when called out of the web browser despite an already authenticated browser session.
- An option to export from RAM recording buffer allows recording exports on the fly without requiring an SD card or external iSCSI storage.
- A separate hostname setting is introduced. For backward compatibility, the hostname setting is still pre-filled from entries in the camera and unit name fields but can then be configured independently.
- Multicast connections for audio streams are now supported.
- An auto back-focus command is introduced to initiate an auto back-focus adjustment cycle without the need for entering the Lens Wizard.
- The alarm rule output options on MIC are enhanced by AUX 68 “White Light ON”.
- Display stamping logo size is increased to 300 by 300 pixels.
- On MIC IP starlight 7000i and MIC IP fusion 9000i, an overlay is introduced to mark landmarks in the picture.
- The thermal line of a MIC IP fusion 9000i can now be calibrated.

Please check the release letter of CPP7.3 FW 7.10.0074 for completeness and details.



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

5 New Features for CPP7 products

- A dashboard, available under service permissions, provides a compact but extensive view on parameters that might be especially helpful for troubleshooting. An export function provides even more details than displayed on the dashboard page.
- Intelligent Streaming has been enhanced by a “Dynamic sharpness and noise filtering” option, which uses information from the encoder to optimize the image processing according to the encoder requirements. An additional bitrate reduction of up to 25% can be achieved.
- Scene mode names have been adapted to reflect their intended use cases better and synchronized between fixed and moving cameras. Scene modes settings have been tuned accordingly to better match their intended applications.
- IP address can now be changed dynamically during runtime, not requiring a reboot cycle anymore. This allows for quarantine network transition on 802.1x network configurations as well as for dynamic IP address assignment from DHCP.
- Support of China GB/T 28181 has been updated to comply with 2016 standard.
- AES encryption on RTP connections is now possible, allowing encrypted UDP multicast connections in a BVMS setup.
- Default value for TLS has been set to version 1.2 to increase security by default. This may cause incompatibility with older client applications.
- Session cookie has been secured by default, disallowing authentication forwarding to MPEG ActiveX and other applications, like replay via Video Security Client. Re-authentication is required for these applications when called out of the web browser despite an already authenticated browser session.
- An option to export from RAM recording buffer allows recording exports on the fly without requiring an SD card or external iSCSI storage.
- A separate hostname setting is introduced. For backward compatibility, the hostname setting is still pre-filled from entries in the camera and unit name fields but can then be configured independently.
- Multicast connections for audio streams are now supported.
- An auto back-focus command is introduced to initiate an auto back-focus adjustment cycle without the need for entering the Lens Wizard.

Please check the release letter of CPP7 FW 7.10.0074 for completeness and details.



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

6 New Features for CPP6 products

- A dashboard, available under service permissions, provides a compact but extensive view on parameters that might be especially helpful for troubleshooting. An export function provides even more details than displayed on the dashboard page.
- Scene mode names in fixed cameras have been adapted to reflect their intended use cases better and synchronized between fixed and moving cameras. Scene modes settings have been tuned accordingly to better match their intended applications.
- IP address can now be changed dynamically during runtime, not requiring a reboot cycle anymore. This allows for quarantine network transition on 802.1x network configurations as well as for dynamic IP address assignment from DHCP.
- Support of China GB/T 28181 has been updated to comply with 2016 standard.
- AES encryption on RTP connections is now possible, allowing encrypted UDP multicast connections in a BVMS setup.
- Default value for TLS has been set to version 1.2 to increase security by default. This may cause incompatibility with older client applications.
- Session cookie has been secured by default, disallowing authentication forwarding to MPEG ActiveX and other applications, like replay via Video Security Client. Re-authentication is required for these applications when called out of the web browser despite an already authenticated browser session.
- An option to export from RAM recording buffer allows recording exports on the fly without requiring an SD card or external iSCSI storage.
- A separate hostname setting is introduced. For backward compatibility, the hostname setting is still pre-filled from entries in the camera and unit name fields but can then be configured independently.
- Multicast connections for audio streams are now supported.
- An auto back-focus command is introduced to initiate an auto back-focus adjustment cycle without the need for entering the Lens Wizard.

Please check the release letter of CPP6 FW 7.10.0074 for completeness and details.



From
ST-VS/MKP1

Product Management

Nuremberg
15.07.2019

7 New Features for CPP4 products

- A dashboard, available under service permissions, provides a compact but extensive view on parameters that might be especially helpful for troubleshooting. An export function provides even more details than displayed on the dashboard page.
- Scene mode names in fixed cameras have been adapted to reflect their intended use cases better and synchronized between fixed and moving cameras. Scene modes settings have been tuned accordingly to better match their intended applications.
- IP address can now be changed dynamically during runtime, not requiring a reboot cycle anymore. This allows for quarantine network transition on 802.1x network configurations as well as for dynamic IP address assignment from DHCP.
- Support of China GB/T 28181 has been updated to comply with 2016 standard.
- AES encryption on RTP connections is now possible, allowing encrypted UDP multicast connections in a BVMS setup.
- Default value for TLS has been set to version 1.2 to increase security by default. This may cause incompatibility with older client applications.
- Session cookie has been secured by default, disallowing authentication forwarding to MPEG ActiveX and other applications, like replay via Video Security Client. Re-authentication is required for these applications when called out of the web browser despite an already authenticated browser session.
- An option to export from RAM recording buffer allows recording exports on the fly without requiring an SD card or external iSCSI storage.
- A separate hostname setting is introduced. For backward compatibility, the hostname setting is still pre-filled from entries in the camera and unit name fields but can then be configured independently.
- Multicast connections for audio streams are now supported.
- An auto back-focus command is introduced to initiate an auto back-focus adjustment cycle without the need for entering the Lens Wizard.
- The alarm rule output options on MIC are enhanced by AUX 68 "White Light ON".
- HTTP digest authentication is set as default.

Please check the release letter of CPP4 FW 7.10.0076 for completeness and details.



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

8 Restrictions; Known Issues

- This firmware and its included platform firmware builds are not applicable to MPEG-4 products.
- The final firmware version for VIP-X1600-XFM4 modules is FW 5.54. No newer firmware will be provided for these modules.
- Configuration Manager cannot upload this Combined Firmware file to VIP-X1600-XFM4 modules. Use the module's web page instead for uploading; or use the separate firmware file.
- The final firmware version for CPP3 devices is FW 5.74. No newer firmware will be provided for these products.
- The Combined Firmware file does not load onto VG4 AUTODOME or AUTODOME Easy II via the browser when running a firmware version before 5.52.0017. The specific platform file should be used instead.
- Cameras or encoders with a minimum firmware version that is higher than the lowest firmware version in the combined firmware file may show error 0x0b in the upload history which can be ignored. Firmware upload is not affected by this.
- Video authentication using SHA hashing mechanisms are not functional if no self-signed certificate has been created yet. Opening an HTTPS connection once is prerequisite.
- Cameras with security coprocessor version 3 with an externally applied certificate will fail HTTPS connections requesting SHA256. The restriction applies to all functions using the private key from the certificate, including
 - EAP-TLS with client authentication
 - TLS-Time with client authentication
 - TLS-Syslog with client authentication

With self-signed certificate, HTTPS is fully functional.

- Creating 2048 bit keys for self-signed certificates may take more than 20 seconds, extending the initial boot cycle, which may occasionally cause a timeout on the very first HTTPS connection to a camera. The next connection attempt typically is successful.
- Software sealing does not cover all static parameters of image pre-processing and moving camera control.
- If software sealing is active and SNMP is disabled in Network -> Network Services, no SNMP trap will be sent out on seal break due to the disabled service. The seal break itself is logged.
- This combined firmware file is not applicable to devices running firmware higher than FW 6.50 due to the 2-factor release signature.

Please check the respective release letter of a camera or encoder for further device-specific restrictions.



From

ST-VS/MKP1

Product Management

Nuremberg

15.07.2019

9 System Requirements

Possible clients for configuration purposes:

- [Configuration Manager 6.20 or newer](#)
- Web Browsers:
 - Microsoft Internet Explorer 11.0 or higher
 - Mozilla Firefox

Possible clients for operation purposes:

- Bosch Video Security App 1.2 or higher
- Bosch Video Security Client 2.0 or higher
- Web Browsers:
 - Microsoft Internet Explorer 11.0 or higher
 - Mozilla Firefox
- BVC 1.7 or newer
- ~~Oracle Java Virtual Machine 1.6.0_35~~
- DirectX 11
- [MPEG-ActiveX 6.33 or newer](#)