GEUTEBRÜCK

Performance Test

G-ST 3000+ G2

Specifications:

Device type:	G-ST 3000+ G2
CPU:	Intel(R) Core(TM) i7-9700K CPU @ 3.60GHz
Mainboard:	Kontron D3642-B1
G-Core:	6.1.0.393
SSD/ HDD:	SSD: 128GB; HDD: 8TB
RAM:	4x 4GB
OS:	Microsoft Windows 10 Enterprise LTSC (1809)
Graphiccard:	Intel(R) UHD Graphics 630 Version 27.20.100.9168
Date of the test:	07.02.2022

Results:

E4 Viewer Performance:

Resolution	Codec	Desired FPS per Channel	Amount Viewers	CPU Usage in %	Device Bandwidth in Mbit/s	GPU Decoder Usage
4K2K	H.264 CCTV	25	8	17,77	103,84	94,86
4MP	H.264	25	14	25,77	163,57	100
FullHD	H.264	25	22	30,88	244,35	88,57
HD	H.264	25	37	42,39	478,63	84,43
4MP	H.265	25	14	20,33	129,78	88,29
FullHD	H.265	25	22	35,9	178,29	92,71
HD	H.265	25	36	29,92	380,85	91,57

E4 Database Performance:

Resolution	Codec	Recorded Channels	CPU Usage in %	Device Bandwidth in Mbit/s
4K2K	H.264 CCTV	128	6,55	953,76
4MP	H.264	73	5,53	893,4
FullHD	H.264	89	7,49	854,16
HD	H264	78	7,53	941,72
4MP	H.265	128	4,95	224,92
FullHD	H.265	128	3,61	199,98
HD	H.265	128	5,23	271,17

E4 G-Tect Performance:

Resolution	Codec	Analysed Channels (AD / VMD /VMX)			CPU usage in % (AD / VMD /VMX)			Device Bandwidth in Mbit/s (AD / VMD /VMX)		
4K2K	H.264 CCTV	29	18	25	20,14	13,00	57,6	371,14	243,16	327,39
4MP	H.264	17	17	16	14,98	12,97	23,79	203,39	211,43	198,21
FullHD	H.264	30	30	26	23,63	19,08	40,28	373,38	356,14	317,99
HD	H.264	50	53	54	37,24	31,48	68,17	638,26	685,8	687,83
4MP	H.265	17	18	16	27,07	13,90	32,90	160,34	174,75	149,75
FullHD	H.265	29	30	25	18,38	18,72	40,88	250,28	262,38	221,89
HD	H.265	38	38	34	22,12	19,06	46,09	412,62	402,96	369,26

Resolution	Codec	GPU Decoder Usage (AD/VMD/VMX)		
4K2K	H.264 CCTV	100	100	100
4MP	H.264	100	97,73	99,73
FullHD	H.264	100	100	98,09
HD	H.264	98,82	99,45	99,45
4MP	H.265	96,45	97,18	98,09
FullHD	H.265	92,45	95,36	96,27
HD	H.265	87,45	89,73	92,18

Type: Limit Performance Test

Reason: Search for the limits of the device until the expected frame rate is no longer reached.Live streams from GBF reference files are used.

Test definition: Tested in a separate test environment with separate network and imagesource with new GBF reference files.

Aim: Determine the maximum number of cameras that can be displayed live, being recordedin the database or analyzed with the G-Tect service (AD, VMD, VMX) WITHOUT database storage.

Description: SuT-Limit Test; In this test case, the maximum number of channels per device is searched for. It is determined how many channels can be viewed live and how many channelscan be recorded.

All tests are performed exclusively at 25 FPS, since it was found in comparison tests that the system behaves as follows when the frame rate is halved:

- GView: at 12.5 FPS always double the number of channels
- Database: at 12.5 FPS always double the number of channels
- GTect: with AD and VMD at 12.5 FPS always double the number of channels
- GTect: with AD and VMX always 8 images are analyzed with CCTV ➔ same number of channels
- GTect: with AD and VMX always 8 images are analyzed with CCTV ➔ same number of channels

Procedure:

GView: The program starts with 16 channels. If the expected frame rate is reached, another 16channels are activated. This happens as long as the frame rate is reached.

If this is no longer the case, 8 channels are deleted again. If this is reached, 4 more channelsare switched on again and so on. This happens until the maximum frame rate is reached.

Database: It starts with 128 active channels. If the frame rate is reached, another 64 channels are activated in the setup. If the rate for all 192 channels is then reached the test is finished.
If the frame rate for the 192 channels is not reached, 32 channels are deactivated again, and soon.

G-Tect: AD, VMD and VMX are tested separately. No combination is used.

The program starts with 16 active channels. When the expected frame rate is reached, another 16 channels are activated. This happens as long as the frame rate is reached.

If this is no longer the case, 8 channels are deactivated. If this is reached, 4 more channels are activated again and so on. This happens until the maximum frame rate is reached.

A comparison of the G-Tect performance tests with active recording with the results without recording has shown that this has no effect on the performance of the G-Tect service.
Therefore, no recording is active in this test.