GEUTEBRÜCK

Performance Test

G-ST 3000+ G3

Specifications:

Device type:	G-ST 3000+ G3
CPU:	12th Gen Intel(R) Core(TM) i7-12700
Mainboard:	Kontron K3842-Q2
G-Core:	7.2.0.279
SSD/ HDD:	M.2 SSD 256GB ; HDD: 1TB
Monitor resolution:	1080p
RAM:	1x 16GB DDR5
OS:	Microsoft Windows 10 Enterprise LTSC (21H2)
Graphiccard:	Intel(R) UHD Graphics 770 Version 31.0.101.4091
Date of the test:	20.04.2023

Results:

E4 Viewer Performance:

Resolution	Codec	Desired FPS per Channel	Amount Viewers	CPU Usage in %	Device Band-width in Mbit/s	GPU Decoder Usage	GPU 3D Usage
4K2K	H.264 CCTV	25	12	24,31	139,32	71,86	56,14
4MP	H.264	25	22	27,61	228,84	83,83	63,83
FullHD	H.264	25	40	40,28	375,48	99,43	84,29
HD	H.264	25	58	54,24	650,35	66,43	94,14
4MP	H.265	25	22	47,28	171,77	68,71	95,14
FullHD	H.265	25	39	52,59	261,41	67,71	97,43
HD	H.265	25	57	54,57	519,97	50,86	90,86

E4 Database Performance:

Resolution	Codec	Recorded Channels	CPU Usage in %	Device Bandwidth in Mbit/s	GPU 3D Usage
4K2K	H.264 CCTV	120	12,46	709,44	4,33
4MP	H.264	83	7,51	946,36	4,33
FullHD	H.264	94	7,23	843,52	4,5
HD	H.264	85	8,84	949,5	4,33
4MP	H.265	128	6,32	228,54	4,5
FullHD	H.265	128	6,76	197,93	4,75
HD	H.265	128	6,73	246,06	4,5

E4 G-Tect Performance AD:

Resolution	Codec	Analysed Channels AD	CPU usage in % AD	Device Bandwidth in Mbit/s AD	GPU Decoder Usage AD	GPU 3D Usage AD
4K2K	H.264 CCTV	54	42,01	501,46	84,27	59
4MP	H.264	33	20,95	372,03	96,91	53,73
FullHD	H.264	60	26,03	646,9	99,36	59
HD	H.264	84	30,47	909,75	67,18	51,09
4MP	H.265	40	38,31	338,62	96,82	95,09
FullHD	H.265	66	48,98	468,41	87,36	93,36
HD	H.265	84	38,23	808,49	63,64	56,09

E4 G-Tect Performance VMD:

Resolution	Codec	Analysed Channels VMD	CPU usage in % VMD	Device Bandwidth in Mbit/s VMD	GPU Decoder Usage VMD	GPU 3D Usage VMD
4K2K	H.264 CCTV	39	31,37	609,34	88,18	60,91
4MP	H.264	34	20	369,74	99,91	53,73
FullHD	H.264	60	26	640,55	98,91	59,09
HD	H.264	84	28,85	948,63	68,45	49,55
4MP	H.265	40	37,22	365,21	99,45	96,91
FullHD	H.265	67	44,67	471,15	86,82	91,82
HD	H.265	82	36,7	791,18	65	57,91

E4 G-Tect Performance VMX:

Resolution	Codec	Analysed Channels VMX	CPU usage in % VMX	Device Bandwidth in Mbit/s VMX	GPU Decoder Usage VMX	GPU 3D Usage VMX
4K2K	H.264 CCTV	43	22,08	451,21	100	58,45
4MP	H.264	31	24,89	339,19	99,73	54,36
FullHD	H.264	51	34,77	538,25	97,82	59,27
HD	H.264	83	54,93	950,7	95,27	68,55
4MP	H.265	31	49,28	259,68	88,73	91,27
FullHD	H.265	51	60,3	350,98	80,64	90,18
HD	H.265	76	83,9	732,93	81,3	79,8

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
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For GView and G-Tect, only the "Outdoor Lively" scenario was used because it is the most complex and the smallest number of channels could be connected or analyzed.

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.