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Performance Test

G-ST 6000+ G2

Specifications:

Device type:	G-ST 6000+ G2
CPU:	Intel(R) Core(TM) i5-9500 CPU @ 3.00GHz
Mainboard	Kontron D3642-B1
G-Core:	5.1.0.155
OS:	Microsoft Windows 10 Enterprise LTSC
Graphiccard:	Intel(R) UHD Graphics 630 26.20.100.7755
Date of the test:	10.03.2021

Results:

E4 Viewer Performance:

Resolution	Codec	Desired FPS per Channel	Amount Viewers	CPU Usage in %	Device Bandwidth in Mbit/s
4K2K	H.264	25	8	35,49	120,46
4MP	H.264	25	15	20,08	205,49
FullHD	H.264	25	26	36,98	315,78
HD	H.264	25	39	39,39	535,23
4MP	H.265	25	16	26,39	181,78
FullHD	H.265	25	27	39,27	255,49
HD	H.265	25	39	31,7	478,38

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E4 Database Performance:

Resolution	Codec	Recorded Channels	CPU Usage in %	Device Bandwidth in Mbit/s
4K2K	H.264	71	6,88	840,06
4MP	H.264	78	8,25	951,6
FullHD	H.264	77	9,26	949,78
HD	H.264	73	7,99	935,56
4MP	H.265	91	9,14	951,31
FullHD	H.265	109	11,72	647,83
HD	H.265	84	7,73	919,62

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	8	8	8	13,18	14,26	22,95	121,92	117,83	116,63
4MP	H.264	17	18	17	18,94	15,52	30,68	243,62	239,69	224,81
FullHD	H.264	31	33	30	29,17	25,02	50,67	416,38	385,54	394,97
HD	H.264	60	62	55	46,86	41,35	90,72	779	775,54	731,84
4MP	H.265	18	18	18	20,88	19,16	44,69	167,72	205,94	218,08
FullHD	H.265	32	31	30	27	23,07	60,47	296,36	237,54	244,77
HD	H.265	48	48	42	30,46	27,62	68,62	443,99	459,86	422,24

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 image source with new GBF reference files.
Aim: Determine the maximum number of cameras that can be displayed live, being recorded in 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

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 16 channels 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 channels are 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.