

# GEUTEBRÜCK

## Performance Test

### G-ST 8000+G3/2U

Specifications:

Device type:	G-ST 8000+ G3/2U
CPU:	12th Gen Intel(R) Core(TM) i7-12700
Mainboard	Kontron K3851-R1
G-Core:	8.0.0.22
Monitor resolution:	1080p
RAM:	4x Transcend 4GB
OS:	Microsoft Windows Server 2022 Standard
Graphiccard:	Intel(R) UHD Graphics 770 - 31.0.101.4091
Date of test:	23.08.2023

### Results:

E4 Viewer Performance:

Resolution	Codec	Desired FPS per Channel	Amount Viewers	CPU Usage in %	Device Bandwidth in Mbit/s
4K2K	H.264 CCTV	25	21	27,01	222,46
4MP	H.264	25	36	26,22	359,93
FullHD	H.264	25	47	24,32	413,51
HD	H.264	25	47	20,17	463,03
4MP	H.265	25	42	59,18	318,59
FullHD	H.265	25	47	30,03	292,06
HD	H.265	25	47	19,57	403,92

## E4 Database Performance:

Resolution	Codec	Recorded Channels	CPU usage in %	Device Bandwidth in Mbit/s
4K2K	H.264 CCTV	146	7,01	851,65
4MP	H.264	79	5,53	784,93
FullHD	H.264	96	6,71	824,54
HD	H.264	83	6,92	844,2
4MP	H.265	128	6,04	212,63
FullHD	H.265	128	5,69	175,18
HD	H.265	128	5,72	243,85

## 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)		
		AD	VMD	VMX	AD	VMD	VMX	AD	VMD	VMX
4K2K	H.264	77	50	35	18,23	14,29	20,03	811,21	811,21	370,82
4MP	H.264	44	44	42	14,89	13,98	20,63	439,19	434,259	422,69
FullHD	H.264	82	80	59	20,16	17,49	21,50	785,16	755,48	566,41
HD	H.264	81	78	69	15,93	15,10	20,50	801,12	815,96	708,97
4MP	H.265	66	66	32	22,74	22,91	19,35	540,01	519,24	235,66
FullHD	H.265	98	100	46	24,81	24,78	20,76	668,20	628,45	312,47
HD	H.265	83	81	57	17,07	16,15	20,66	671,99	668,68	506,29

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 channels can 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 VMD, CCTV always analyzes 12FPS → 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.