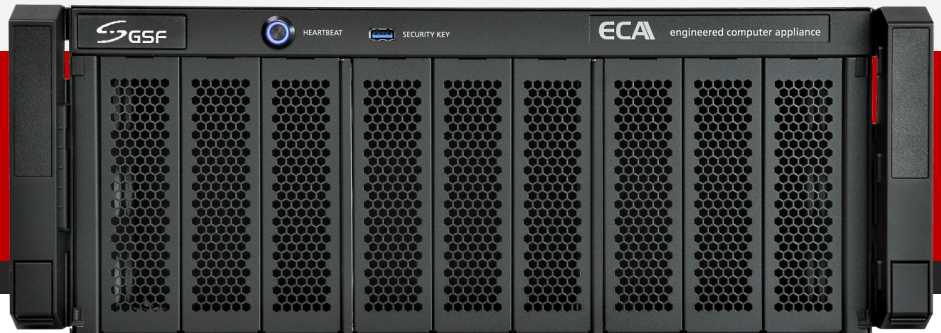# WORKLOAD OPTIMIZED
Processing Server

MX45

ECA-MX45 is high efficiency and high performance processing server that is specially designed for continuous 24x7 video and data processing. It is best built for video management and video analytics purpose. Even small businesses deserve top-of-the-line CCTV technology that is durable, feature-packed and cost efficient. This MX Series perform like a pro, yet it is easy on your pocket. Ultimate processing technology up to 10 cores of processing power.

- Processing power up to 10 cores 20 threads and 64GB DDR4 ECC memory.

- Automatic network fail-over feature to ensure uninterrupted recording operations.

- Configurable SSD to Redundant Storage System (RSS) in mirror mode, best for database and Ai analytics.

- Support optional high-bandwidth I/O slot for real-time ray tracing Ai GPU process.

- 3 years next business day part replacement onsite warranty, with TrueBlue Care Premium support pack.

Software

Operating System (ecaOS)

Triple layer ecaOS6 64bits OS architecture with remote dashboard and machine control capability.

C-model*: powered by Microsoft® Windows 10 IoT Enterprise LTSC. S-model: with Microsoft Windows Server IoT Storage std 2022
*Note: SHIELD feature only available in C-model

App Monitor

User configurable: ADD, DELETE application monitoring watchdog.
Type: Application or Script (support arguments command)
Launch Delay: First execution delay for x seconds (user configurable)
Instance: Force single instance, terminate the rest, or allow multi instance.
Monitoring: Terminate App if no respond.
Auto Respawn: Auto respawn app/script after close, terminated or No respond.

System Monitoring

CPU: Usage (%) threshold value for x minute of time
MEMORY: Usage (%) threshold value for x minute of time
NETWORK TX/RX: Usage (Mbps) threshold value for x minute of time
DISK WRITE/READ: Usage (Bytes) threshold value for x minute of time

• With automatic value prediction
• With notification and email alert
• Optional action to reboot or shutdown the machine (CPU and Memory)

Machine shutdown authorization: Security Key only
Machine stability monitoring: Notify if reboot more than 3 times within 30 minutes. Auto reboot if system halt / blue screen.

Temperature: Monitor and alert system temperature, and processor temperature. As well as power supply unit (PSU) temperature*
* Available in redundant psu model only

System Voltage: System voltage stability auto monitoring and alert for 3.3Vdc, 12Vdc and Mainboard Clock battery.
System power supply (PSU) redundant module monitoring and alert is only available in system with redundant PSU option.

System Fan: Auto monitoring and alert for system and processor fan.

AC Power monitoring: Alert & log if unexpected AC power lost, auto power up when AC power resume.

Disk Health

Frequency of health check: Automatic daily.
Disk Check: OS SSD and All 5 Bay hot swap HDD.
Notification: Email alert with detail disk health information.
Disk Health: Disk health %, Power on time, Temperature, S.M.A.R.T values analysis. SSD ware, HDD bad sector, etc.

Disk Guard

Automatic log and notify when disk was REMOVED or ADDED.
Track all individual HDD SERIAL NO. for evidence trace.
Disk Info: Serial number, Firmware version, Model number, and Disk volume details.

System Recovery (Remote capable)

FAST RESET: Reboot from windows OS, load fresh ecaOS from SSD (SHIELD must be enabled). This reset recovered most daily operation errors like miss places settings, or trojan attacks. Recovery time about 1 minute.

SOFT RESET: Command by Security Key, perform by Heartbeat. This reset recover the whole ecaOS, and it solve problem like windows OS corrupted or changes or change of new SSD. Recovery time about 10 minutes.

HARD RESET: Same as soft reset, but recovery based on factory default without any user software and settings.

System Report and Log

Events: System event notification alert page

Comprehensive Log: Details system log with search function. Filter by date/time. Ability to single-click log export with windows events log in single ZIP file for further technical troubleshoot sharing.

Auto-Daily Report: System will generate a system health status summary report and email to user everyday.

Recording Monitor*

Recoding monitor will constantly monitor all connected cameras recordings, the monitoring GUI offer overall recording timeline that will ease user to know when no recording events happened.

* Available on ecaOS6.3 and support to macula vms only.

Device Monitor*

Monitor IP devices and Web Resources and notifies if they are down. Device monitor offer 4 types of deice uptime monitor function. Ping, Port, Keyword and URL. The monitoring GUI offer user an overview timeline bar on the device uptimes.

*Available in ecaOS version 6.3 and above. May need separate license purchase.

Remote Support Control

TrueBlue: Single click activation for TrueBlue service remote support

Microsoft Remote Desktop: Enable/Disable RDP for Local Area Remote Support.

Chrome Remote Desktop: Enable/Disable chrome remote support for over the internet remote support. Remote setup capable via ecaOS HTTPs Dashboard.

NOTE: all above remote support services can be activate or deactivate via eca dashboard for better security and privacy

Hardware

Storage

1unit internal 480GB High Endurance SSD dedicated for ecaOS & Operating Software use.

Two (2) internal 3.5inch SATA HDDs for dedicated data storage support up to 20TB capacity per HDDs, or SSD for high IOP database purpose.

Redundant Storage System (RSS)

Configurable RSS in mirror mode data redundancy to prevent any data lost. RSS powered by Microsoft® Storage Space technology. In built remote RSS tools, can create, repair or extend storage.

GPU & Display Performance

GPU: Intel® UHD Graphics 630. 1GB shared memory.
Client mode. Display as client only.
MX45E4C: 140CH live display. (Dual display)
MX45P4C: 154CH live display. (Dual display)
MX45W5C: 200CH live display. (Dual display)
Details Report: http://gsf.my/LB202201170900.pdf

Monitor Outputs

HDMI x 1port. Ver 2.0a. Max Resolutions 4096x2160 @60Hz (4K)
DP x 1port. Ver 1.2. Max Resolutions 4096x2160 @60Hz (4K)
VGA x 1port. Max Resolutions 1920x1200 @60Hz

Multi Display Support: 3 monitors

Processor

MX45E: Intel® Xeon W-1250. 6 core 12 threads.
MX45P: Intel® Xeon W-1270. 8 core 16 threads.
MX45W: Intel® Xeon W-1290. 10 core 20 threads.

Memory

4C / 4S: DDR4 ECC 16GB
5C / 5S: DDR4 ECC 32GB
6C / 6S: DDR4 ECC 64GB
NOTE: MX45E, MX45P, & MX45W come with ECC system memory.

Network

Dual LAN (RJ45 connector) 10/100/1000 Base-T Gigabit Ethernet . Support Redundant Fail-over.
LAN1: Intel® I225LM with 10/100/1000/2500 Mbps
LAN2: Intel® I219LM with 10/100/1000 Mbps.

Audio

Realtek ALC887 HD , High Definition Audio.
Line-out. 3.5mm jack (green).
Mic-in. 3.5mm jack (pink).
Support Audio over HDMI and DP

Heartbeat

System on chip (SoC) microprocessor IoT controller board 128GB system recovery heartbeat storage.
12 hours self sustained 6000mAh Li-Po battery.
100Mbps LAN for system notifications.
Relay-Out x 1. (NC/NO/COM), for machine failed buzzer.
Digital I/O: DI x 2. DO x 2. 3.3V@500mA max.

Security Key

2048-bit RSA encryption. Uniquely paired to machine specific authen-ticator token. Default all ECA shipped with 1unit physical and 2 virtual security keys. Additional keys can be purchased from GSF.

Physical Key Type: USB 2.0 Type-A.
Virtual Key Type: 6 digit OTP access code. Refreshed every 30 seconds.

Electrical

Power Input & Consumption

Line voltage: 100 - 240V AC (auto select)
Frequency: 50-60Hz, single phase
Power output rated: 600W (max)
Power Efficiency: >82% 80PLUS rated.

Power Consumption Estimation:
Continuous power consumption for UPS calculation
Platform Only: Idle load: 60W, Max Load: 150W

Option: Redundant 1+1 PSU 600 Watt

Power Protection & Safety

Over Voltage Protection (OVP)
Short Circuit Protection (SCP)
Over Power Protection (OPP)
Over Current Protection (OCP)
Under Voltage Protection (UVP)

PSU will automatic shutdown if fault above detected.
RESET: Remove all fault, with AC input cycle ON/OFF reset > 3seconds.

Model with Redundant PSU: Hot Plug 1+1 redundant power module. 600W each module, with software status notification and alert.

Environmental

Operating Temperature

Operating Temperature: 10 ~ 45 °C
Storage Temperature: -40 ~ 65 °C

Humidity

Operating Humidity: 10% ~ 85% (Non-condensing)
Storage Humidity: 10% ~ 85% (Non-condensing)

Dimension & Weight

Size & Weight

Machine Only:
Depth : 465mm
Width : 430mm
Height : 176mm
Weight: 13.1KG

Packaging Box:
Depth : 600mm
Width : 560mm
Height : 295mm
Weight: 18.24KG

Form Factor & Mounting Requirements

Rack mounted 4U
Come with rail mounting kits.

Rail mount requirement:
Minimum vertical mounting column front to back is 600mm depth.

Service & Warranty

Warranty Support

1 year standard manufacturer warranty. Carry-IN.

TrueBlue Care. Upgrade to 3 years hardware warranty, with next business day carry-IN part replacement service.
(Service Code: TBC)

TrueBlue Care Premium. Upgrade TBC to Premium with hardware parts & labor onsite replacement.
(Service code: TBC Premium)

System Commissioning Service

TrueBlue TNC (Service Code: TNC)
Deployment Service: Professional onsite testing and commissioning.
Training: User operation training.

TrueBlue Onsite (Service Code: TBO)
Incident based pay-per-request onsite service support.

Customer Care

Phone, Email & Remote Support
• Phone and Email Support (During working hour only)
• Remote Support (During working hour only)

Support Email: trueblue@gsfcorp.com

Service Centre
Unit21, Level 3A, IOI Boulevard, Jalan Kenari 6, Bandar Puchong Jaya, 47170 Puchong, Selangor D.E. Malaysia.
Google map: https://goo.gl/maps/k1gep

Maintenance Service

Maintenance Service Frequency: every 12 months of ECA runtime.

TrueBlue Maintenance (Service code: TBM)
ECA preventive maintenance service. We recommend a minimum 1 year service interval for each ECA deployed.

GSF recommend customer to signup with our certified professional manufacturer maintenance service. (Code: TBM). This maintenance service is important to ensure continuous ECA operation without interruption or down time. Please visit for more info.

Models & Configurations

ECA-MX45PMO-00HSXXXSSSSSS

ECA-MX45: Generic ECA Platform 4.5

Configuration: P
E: Intel® Xeon W-1250. 6 core 12 threads.
P: Intel® Xeon W-1270. 8 core 16 threads.
W: Intel® Xeon W-1290. 10 core 20 threads.

Configuration: M
4: DDR4 16GB
5: DDR4 32GB
6: DDR4 64GB
Model with Xeon processor installed with ECC memory.

Configuration: O
C: Windows 10 Enterprise LTSC OS (x64bits)
S: Windows Server 2022 OS (x64bits)

Configuration: 00HSXXX
0 Hot swap Bay, with XXX factory pre-installed HDD capacity.

Configuration: SSSSSS
Factory pre-loaded software code.

Ports:

1. Com port | 2. DisplayPort | 3. HDMI | 4. VGA | 5. LAN1 | 6. USB3.2 x 4 | 7. LAN2 | 8. MIC | 9. Audio Out | 10.Heatbeat LAN | 11. Heartbeat Reset | 12. Heartbeat I/O Port

[*1] Tunned by TrueBlue service.

GSF

Designed by GSF® Corporation. Engineered Computer Appliance (ECA®) generation 4.5