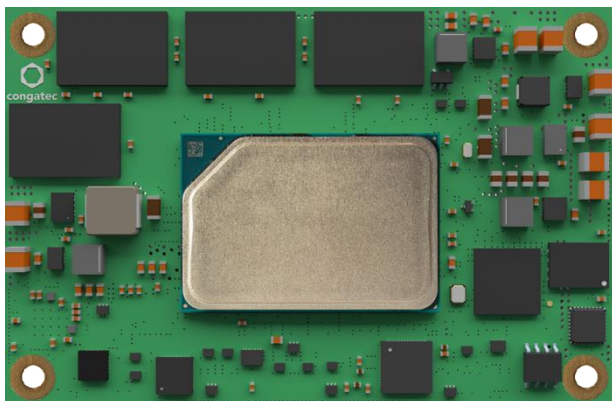


# EMBEDDED COM EXPRESS® MINI

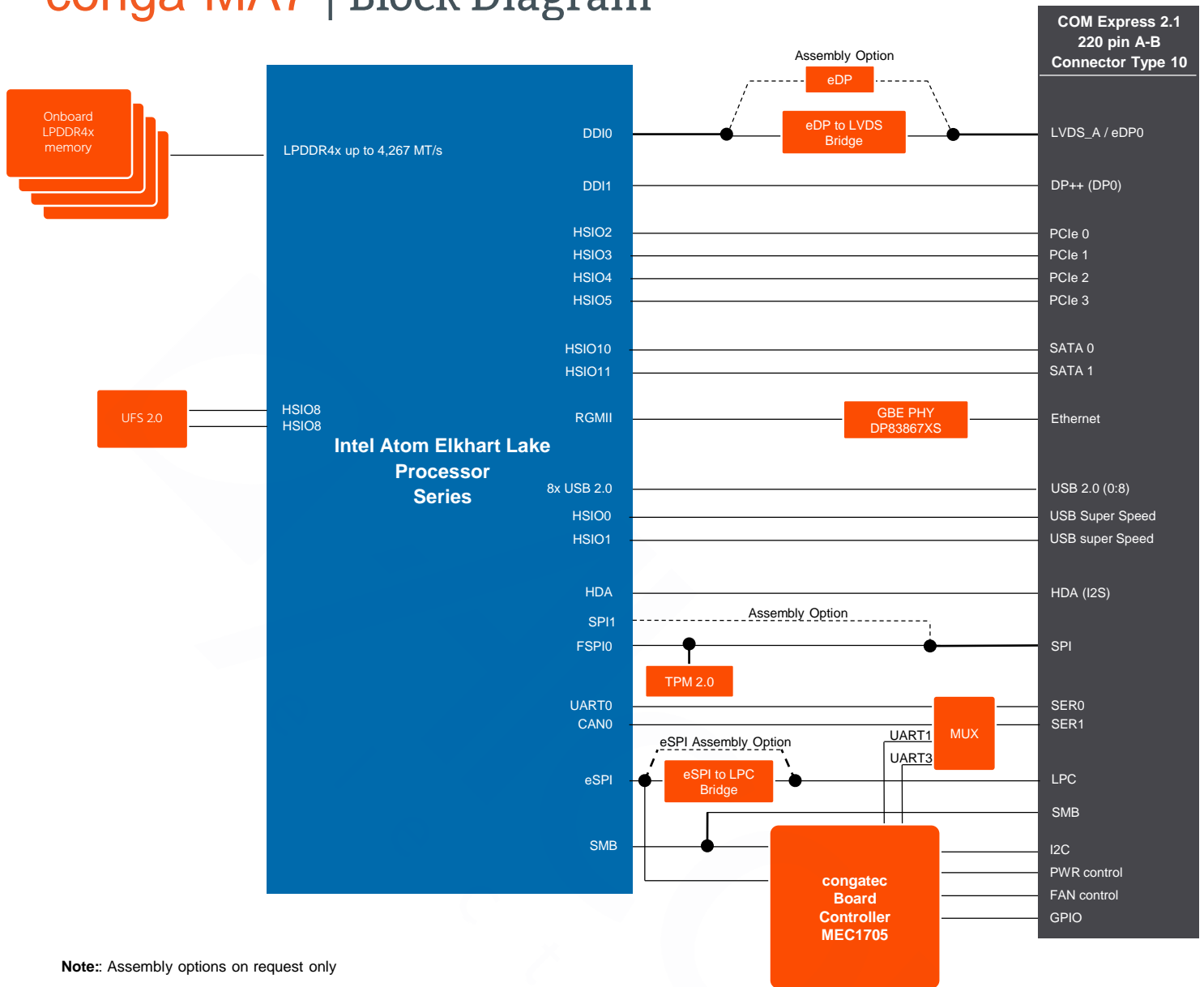
## conga-MA7



- COM Express® Type 10 Mini based on Intel® Atom® x6000E Series and Intel® Pentium® and Celeron® J Series processors (code-named Elkhart Lake)
- High performance Intel® UHD Graphics (Gen11)
- Options for Industrial Temperature Range -40°C to 85°C
- Time Sensitive Networking and Time Coordinated Computing for improved Realtime Capability
- Up to 4.267 MT/s onboard Memory Support with Inband ECC
- UFS 2.0 for higher bandwidth and data processing

<b>Form Factor</b>	COM Express® Mini   Type 10   84 x 55 mm					
<b>CPU</b>	Processor	TDP	Cores/Threads	Base Frequ./max. Turbo	Gen 11 Gfx	Intel Use Condition
	J6413	10W	4 / 4	1.8 GHz / 3.0 GHz	16 EU	PC Client
	J6425	10W	4 / 4	1.8 GHz / 3.0 GHz	32 EU	PC Client
	x6211E	6W	2 / 2	1.2 GHz / 3.0 GHz	16 EU	Embedded
	x6413E	9W	4 / 4	1.5 GHz / 3.0 GHz	16 EU	Embedded
	x6425E	12W	4 / 4	1.8 GHz / 3.0 GHz	32 EU	Embedded
	x6212RE	6W	2 / 2	1.2 GHz / ---	16 EU	Industrial
	x6414RE	9W	4 / 4	1.5 GHz / ---	16 EU	Industrial
	x6425RE	12W	4 / 4	1.9 GHz / ---	32 EU	Industrial
<b>DRAM</b>	max. 16GB onboard LPDDR4x   up to 4.267 MT/s					
<b>Ethernet</b>	Intel® GbE with TSN support and Out-Of-Band Management   real-time trigger					
<b>I/O Interfaces</b>	4x PCIe Gen3   2x USB 3.1 Gen2   up to 8x USB 2.0   2x SATA III   1x SDIO (option)   2x UART   CAN   GPIO   I <sup>2</sup> C Bus   SMBus   SPI   LPC					
<b>Mass Storage</b>	UFS 2.0 onboard flash up to 64 Gbyte					
<b>Sound</b>	HD Audio Intel® LPE Audio via I2S					
<b>Graphics</b>	Intel® UHD Graphics (Gen11)					
<b>LVDS</b>	Single channel LVDS interface up to 1920x1200@60Hz   shared with eDP up to 3840x2160@60Hz (option)					
<b>Digital Display Interface</b>	DisplayPort 1.4 4096x2160@60Hz or HDMI 2.0 4096x2160@60Hz					
<b>congatec Board controller</b>	Multistage watchdog   non-volatile user data storage   manufacturing and board Information   board statistics   fast mode and multi-master I <sup>2</sup> C bus   power loss control					
<b>Embedded BIOS Feature</b>	AMI Aptio® UEFI firmware   32 MByte serial SPI with congatec Embedded BIOS features   OEM Logo   OEM CMOS Defaults   LCD Control   Display Auto Detection   Backlight Control   Flash Update					
<b>Power Management</b>	ACPI 5.0 compliant   Smart Battery Management					
<b>Operating Systems</b>	Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Microsoft® Windows IoT 10 Core   Linux (Yocto Project)   Android   RTS Hypervisor					
<b>Power Consumption</b>	Typ. Application: see manual for full details					
<b>Temperature Range</b>	Commercial: Operating Temperature: 0 to +60°C		Storage Temperature: -20 to +80°C			
	Industrial: Operating Temperature: -40 to +85°C		Storage Temperature: -40 to +85°C			
<b>Humidity</b>	Operating Humidity: 10 to 90% r. H. non cond. Storage Humidity: 5 to 95% r. H. non cond.					

# conga-MA7 | Block Diagram



## conga-MA7 | Order Information

Article	PN	Description
conga-MA7/x6425E-16G UFS64	049400	COM Express Mini Type10 module with Intel® Atom® x6425E quad core processor with 1.8GHz core frequency up to 3.0GHz, 1.5MB cache, 16GB 3733MT/s LPDDR4x onboard memory and 64GB UFS 2.0 onboard flash.
conga-MA7/x6413E-8G UFS32	049401	COM Express Mini Type10 module with Intel® Atom® x6413E quad core processor with 1.5GHz core frequency up to 3.0GHz, 1.5MB cache, 8GB 4267MT/s LPDDR4x onboard memory and 32GB UFS 2.0 onboard flash.
conga-MA7/x6211E-8G UFS32	049402	COM Express Mini Type10 module with Intel® Atom® x6211E dual core processor with 1.2GHz core frequency up to 3.0GHz, 1.5MB cache, 8GB 4267MT/s LPDDR4x onboard memory and 32GB UFS 2.0 onboard flash.
conga-MA7/i-x6425RE-8G UFS32	049410	COM Express Mini Type10 module with Intel® Atom® x6425RE quad core processor with 1.9GHz core frequency, 1.5MB cache, 8GB 4267MT/s LPDDR4x onboard memory and 32GB UFS 2.0 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-MA7/i-x6414RE-4G UFS32	049411	COM Express Mini Type10 module with Intel® Atom® x6414RE quad core processor with 1.5GHz core frequency, 1.5MB cache, 4GB 4267MT/s LPDDR4x onboard memory and 32GB UFS 2.0 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-MA7/i-x6212RE-4G UFS32	049412	COM Express Mini Type10 module with Intel® Atom® x6212RE dual core processor with 1.2GHz core frequency, 1.5MB cache, 4GB 4267MT/s LPDDR4x onboard memory and 32GB UFS 2.0 onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga-MA7/J6425-16G UFS64	049420	COM Express Mini Type10 module with Intel® Pentium® J6425 quad core processor with 1.8GHz core frequency up to 3.0GHz, 1.5MB cache, 16GB 3733MT/s LPDDR4x onboard memory and 64GB UFS 2.0 onboard flash.
conga-MA7/J6413-8G UFS32	049421	COM Express Mini Type10 module with Intel® Celeron® J6413 quad core processor with 1.8GHz core frequency up to 3.0GHz, 1.5MB cache, 8GB 4267 MT/s LPDDR4x onboard memory and 32GB UFS 2.0 onboard flash.