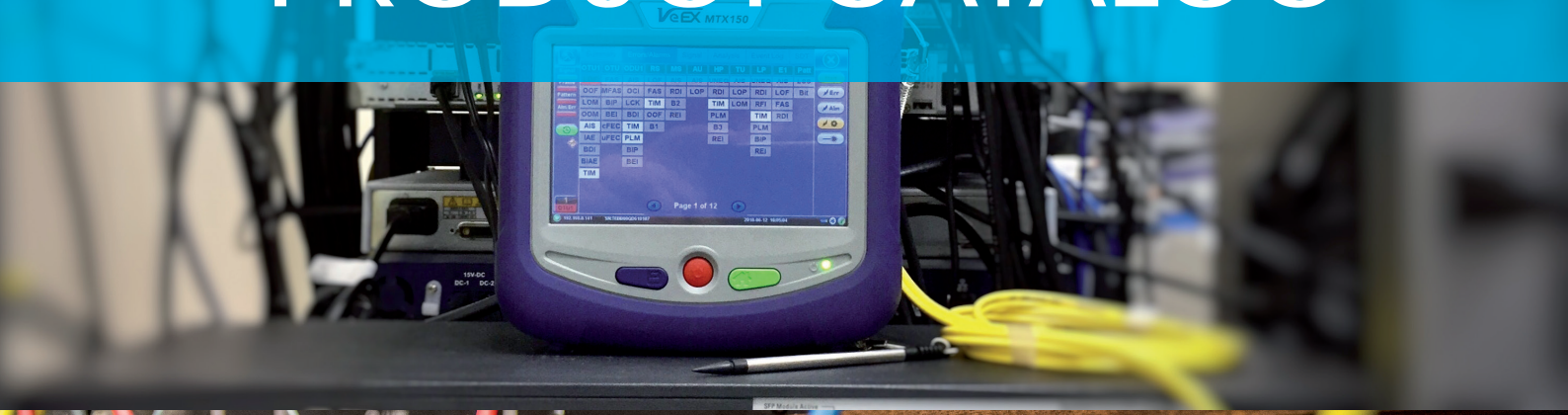
ISEE INTEGRATION SOFTWARE ELECTRONIC ENGINEERING

PRODUCT CATALOG



IGEP™ TECHNOLOGY

IGEP™ SMARC™ iMX6

OVERVIEW

SOLO/DUALLITE/DUAL/QUAD ARM CORTEX-A9 CPU UP TO 1200MHZ

The IGEP™ SMARC™ iMX6 is an industrial low power computer module based on Single, DualLite, Dual or Quad core ARM Cortex-A9 at speeds up to 1200MHz by Freescale Semiconductor iMX6 processor.

This is one of ISEE's computer platforms designed according to SMARC™, one of the first form factor standards defined from SGET, with fixed dimensions and the same connection system in all manufacturers, allowing a full compatibility between different trademarks. These modules enable system architects to use a fully passive cooled development, ideal for portable and stationary embedded devices.

As a complementary product, it's also available an expansion board (IGEP™ SMARC™ EXPANSION) to help the user to develop his final application in an easy way.

LIST OF MODELS

MODEL	PROCESSOR	FREQUENCY (MHZ)	WIFI / BLUETOOTH	GRAPHICS	RAM MEMORY	FLASH MEMORY
IGEP™ SMARC™ iMX6 Quad	iMX6 Quad	800 MHz	Yes(1)	3D graphics	2 GB	8 GB
IGEP™ SMARC™ iMX6 Dual	iMX6 Dual	800 MHz	Yes(1)	3D graphics	2 GB	8 GB
IGEP™ SMARC™ iMX6 DualLite	iMX6 DualLite	800 MHz	Yes(1)	3D graphics	1 GB	4 GB
IGEP™ SMARC™ iMX6 Solo	iMX6 Solo	800 MHz	Yes(1)	3D graphics	512 MB	4 GB

Notes: 1. Also available without WiFi/Bluetooth function under request.
2. Other RAM / Flash Memory available under request.

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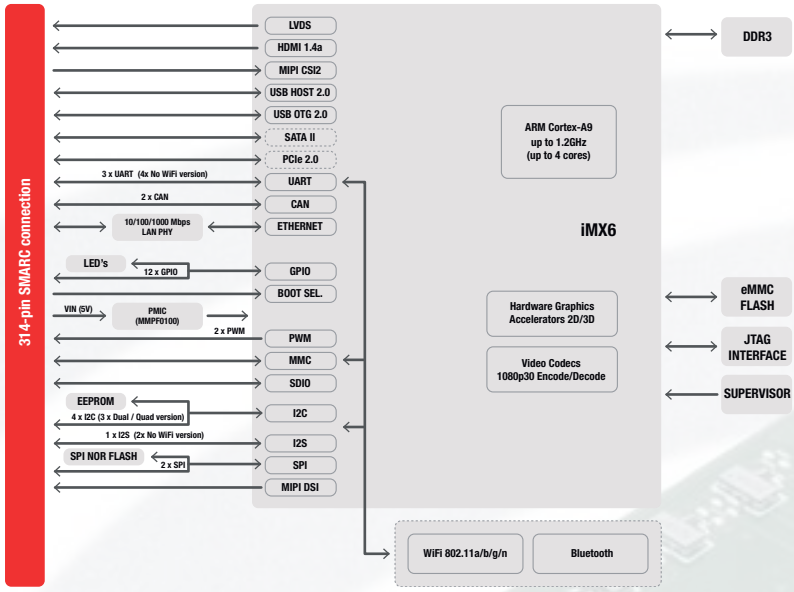

TECHNICAL SPECIFICATIONS

	IGEP™ SMARC™ iMX6 WIFI		IGEP™ SMARC™ iMX6 WIFI NO WIFI	
Processor	iMX6 Solo/DualLite/Dual/Quad, by NXP Semiconductors Up to 4 x ARM Cortex-A9 MPCore NEON SIMD Coprocessor Frequency speed up to 1200 MHz (depending on model)			
3D/2D Accelerator	Vivante GC2000,GC880 (depending on model), GC355 and GC320, providing 2D/3D acceleration with OpenGL-ES2.0 and OpenVG 1.1 support			
Video	Video acceleration: H.264, H.263, MPEG-2 and MPEG-4			
Memory	RAM: 512 MB, 1 GB or 2 GB DDR3 eMMC Flash: 4 GB or 8 GB eMMC		SPI Flash (optional) EEPROM	
Ethernet	10/100/1000 Mbps Ethernet PHY Interface			
USB 2.0	1 x USB 2.0 Host 1 x USB 2.0 OTG			
Display	1 x LVDS (4 lanes) 1 x HDMI 1.4a (with audio) 1 x DSI (2 lanes)			
Image Capture Interface	1 x MIPI CSI2 interfaces (4 lanes Dual/Quad version, 2 lanes Solo/DualLite version)			
Wireless	WiFi IEEE 802.11 b/g/n (Access Point: Yes) Bluetooth v4.0 (BLE)			
Antenna	1 x Internal WiFi/Bluetooth antenna 1 x U.FL connector for external antenna			
Additional Interfaces	3 x UART 4 x I2C 1 x MMC	1 x I2S 2 x SPI 1 x PWM	2 x CAN 1 x SDIO 12 x GPIO	JTAG Interface 1 x SATA II 1 x PCIe v2.0 (1 lane)
SW Support	Linux			
Power Supply	Power from expansion connectors: From 4,7V to 5,25V			
Power Consumption				
Thermal	Commercial temperature: 0ºC to +60ºC Industrial temperature: -40ºC to +85ºC			
Form Factor	82,00mm x 50mm			
Humidity	93% relative Humidity at 40ºC, non-condensing (according to IEC 60068-2-78)			
MTBF	> 100000 hours			

RELATED PRODUCTS

IGEP™ SMARC™ EXPANSION BOARD

The expansion board is a fully equipped baseboard that access to almost all IGEP™ SMARC™ iMX6 functionalities. It has been designed to be used as the fastest way to develop and check the user's final application before building a prototype, saving costs and reducing time to market. This model can be used with all the IGEP™ SMARC™ series modules.

TECHNICAL SPECIFICATIONS

Connectors	1 x SMARC™ connector +5V Power Supply 1 x 10/100/1000Mbps Ethernet PHY Interface 1 x HDMI 1.4a output type A receptacle 3 x USB 2.0 type A receptacle 1 x USB 3.0 type AB receptacle 1 x Serial RS232 3V3 expansion header 1 x Serial TTL 3V3 debug header 1 x Stereo Line mic in mini jack 1 x Stereo Line Audio Out mini jack 1 x Stereo Line Audio In mini jack 1 x DVI connector 1 x CSI connector (Rapsberry Pi camera compatible) 1 x Terminal 5 pins plug 1 x I/O Expansion 28 pins header 1 x Modem USB interface 1 x mSATA interface 1 x Micro-SD connector
Features	1 x Button LED 3 x Boot jumpers 1 x PWM 1 x SPI 1 x I2C 1 x MMC 1 x CAN transceiver 1 x RS485 2 x RS232 1 x Audio codec
Dimmensions of the Expansion Board (without case)	142 x 90 mm
Case dimmensions	150 x 100 x 30 mm

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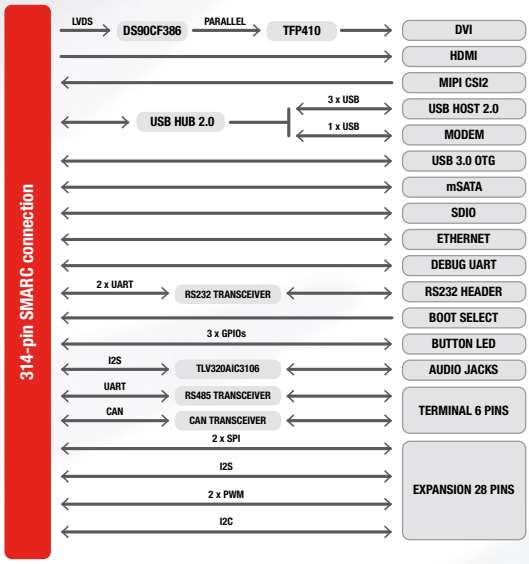

APPLICATIONS

Portable data terminals
Navigation
Auto Infotainment
Gaming
Medical imaging
Home automation
Human Interface
Industrial Control
Test and Measurement
Single board computers
Audio and image processing

ORDERING INFORMATION

MODEL	REFERENCE	DESCRIPTION
IGEP™ SMARC™ iMX6 Quad	IGEP- SMARC- iMX6Q-2G-8G-W-E	Processor iMX6, Quad Core, 2GB RAM, 8GB Flash, WIFI, Ethernet (*)
IGEP™ SMARC™ iMX6 Dual	IGEP- SMARC- iMX6D-2G-8G-W-E	Processor iMX6, Dual Core, 2GB RAM, 8GB Flash, WIFI, Ethernet (*)
IGEP™ SMARC™ iMX6 DualLite	IGEP- SMARC- iMX6DL-1G-4G-W-E	Processor iMX6, DualLite, 1GB RAM, 4GB Flash, WIFI, Ethernet (*)
IGEP™ SMARC™ iMX6 Solo	IGEP- SMARC- iMX6S-512M-4G-W-E	Processor iMX6, Single Core 512 MB RAM, 4GB Flash- WIFI, Ethernet (*)
Related Products		
IGEP™ SMARC™ EXPANSION	BASE0040-RB10	Expansion board for fast prototyping of user's projects

(*): 1. No Wifi: NW – instead of W- available on request.
2. Other Flash Memory available on request.
3. No Ethernet available on request (NE)

ABOUT ISEE

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- ISEE starts its activity as Integration Software and Electric Engineering.
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- ISEE releases the first IGEP™ Platform based on ARM9.

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- ISEE releases the second generation of IGEP™ Platform with IGEP™v2.
- ISEE develops the IGEP™v2 Expansion.
- ISEE develops IGEP™ Radar Techology.

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- IGEP™ COM MODULE arrives to the market.
- IGEP™ COM PROTON arrives to the market.
- ISEE releases the IGEP™ COM MODULE expansion family with IGEP™ BERLIN and IGEP PARIS.

2011
- IGEP™v2 and all Expansion boards goes open source and open hardware licensed under Creative Commons Attribution-Non Commercial-Share Alike 3.0 unported license.
- ISEE develops a new Module based on OMAP4 family processors.

2012
- ISEE develops IGEP™ COM AQUILA the Cortex-A8 low cost solution.
- ISEE develops the new Platform IGEP™v5 based on OMAP5 family.

2013
- ISEE releases IGEP™ COM AQUILA and IGEP™ AQUILA Expansion.
- ISEE releases the new Platform IGEP™v5.

2014
- ISEE develops new modules based on SMARC™ protocol.

2015
- ISEE releases its first SMARC™ modules: IGEP™ SMARC™ PXA2128 and IGEP™ SMARC™ iMX6.

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IGEP™

IGEP™ TECHNOLOGY

IGEP™ SMARC™ AM335x

OVERVIEW

ARM Cortex-A8 CPU up to 1000MHz

The IGEP™ SMARC™ AM335x is an industrial ultra low power computer module based on ARM Cortex-A8 at speeds up to 1000MHz by Texas Instruments Sitara AM335x family of processors.

It's an industrial computer platform in a very low profile. The standard model is based on the AM3352 processor, but it can be customized with other of the same family. Furthermore, with different combinations of RAM and Flash memory, a complete list of interfaces and peripherals, and with the possibility to have a 3D graphics accelerator, it can be the base for any complex industrial equipment or any other kind of application.

This is one of ISEE's computer platforms designed according to SMARC™, one of the first form factor standards defined from SGET, with fixed dimensions and the same connection system in all manufacturers, allowing a full compatibility between different trademarks. These modules enable system architects to use a fully passive cooled development, ideal for portable and stationary embedded devices.

As a complementary product, it's also available a carrier board (IGEP™ SMARC™ EXPANSION) to help the user to develop his final application in an easy way.

LIST OF MODELS

MODEL	PROCESSOR	FREQUENCY (MHZ)	WIFI & BLUETOOTH	GRAPHICS	RAM MEMORY	FLASH MEMORY
IGEP™ SMARC™ AM3352	AM3352	800 / 1000	Yes (1)		256 MB	128 MB
IGEP™ SMARC™ AM3354	AM3354	800 / 1000	Yes (1)	3D graphics	512 MB	512 MB
Customized models						
IGEP™ SMARC™ AM3358	AM3358	800 / 1000	Yes (1)	3D graphics	128 MB up to 512 MB	128 MB up to 512 MB
IGEP™ SMARC™ AM3359	AM3359	800	Yes (1)	3D graphics		

Notes: 1. Also available without WiFi/Bluetooth function under request.
2. Other RAM / Flash Memory available under request.

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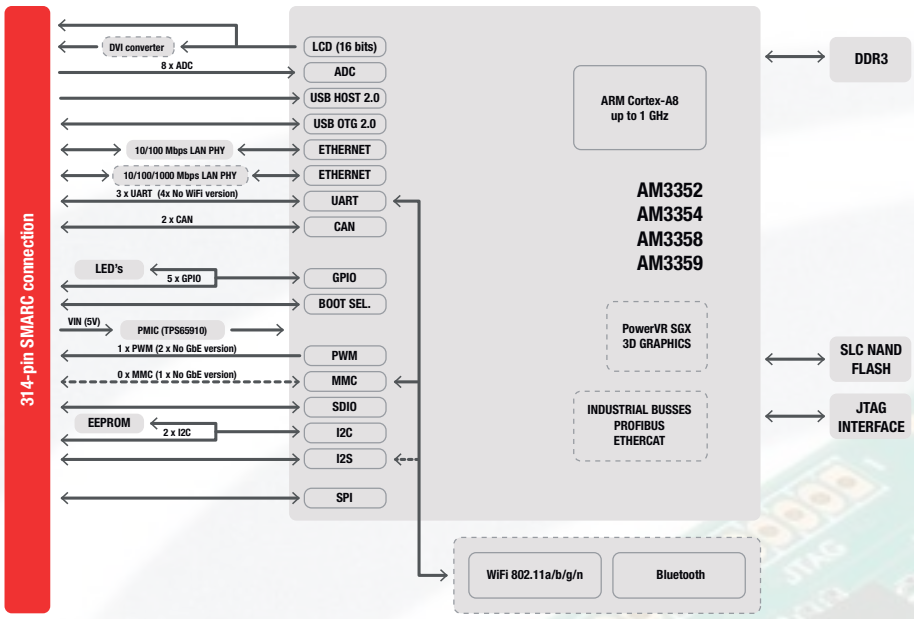

TECHNICAL SPECIFICATIONS

Processor	AM3352[1] / AM3354 / AM3358 / AM3359, by Texas Instruments ARM Cortex-A8 NEON SIMD Coprocessor Frequency speed up to 1000 MHz (depending on model)
3D/2D Accelerator	PowerVR SGX GPU, providing graphics acceleration with OpenGL ES1.0, OpenGL ES2.0 and Open-VG support. (Depending on model.)
Memory	RAM: 128 MB up to 512 MB [2] FLASH: 128 MB up to 512 MB [3]
Ethernet	10/100 Mbps Ethernet PHY interface 10/100/1000 Mbps Ethernet PHY interface (optional)
USB 2.0	1 x USB 2.0 Host 1 x USB 2.0 OTG
Display	1 x Digital Video/TFT interface (16-bits) 1 x DVI-D/HDMI (16-bits) (optional)
Additional Interfaces	2 x I2C 2 x CAN 1 x SPI 5 x GPIOs 1 x McASP/I2S (Digital Serial Audio Interface) 1 x PWM 8 x ADC 3 x UART 2 x MMC JTAG interface
SW Support	Linux
Power	Power Supply: From 4,5 V to 5,5 V Digital I/O voltage: 1,8 V
Power Consumption	Typical 1,8 W (depending on software) Maximum 3,5 W (depending on software)
Thermal	Commercial temperature: 0ºC to +60ºC Industrial temperature: -40ºC to +85ºC
Form Factor	82,00mm x 50,00mm
Humidity	93% relative Humidity at 40º C, non-condensing (according to IEC 60068-2-78)
MTBF	>100000 hours

Notes:
1. Standard setup
2. Standard setup RAM Memory: 256 MB
3. Standard setup Flash Memory: 128 MB

RELATED PRODUCTS

IGEP™ SMARC™ EXPANSION BOARD

The expansion board is a fully equipped baseboard that access to almost all IGEP™ SMARC™ AM335x functionalities. It has been designed to be used as the fastest way to develop and check the user's final application before building a prototype, saving costs and reducing time to market. This model can be used with all the IGEP™ SMARC™ series modules.

TECHNICAL SPECIFICATIONS

Connectors	1 x SMARC™ connector +5V Power Supply 1 x 10/100/1000Mbps Ethernet PHY Interface 1 x HDMI 1.4a output type A receptacle 3 x USB 2.0 type A receptacle 1 x USB 3.0 type AB receptacle 1 x Serial RS232 3V3 expansion header 1 x Serial TTL 3V3 debug header 1 x Stereo Line mic in mini jack 1 x Stereo Line Audio Out mini jack 1 x Stereo Line Audio In mini jack 1 x DVI connector 1 x CSI connector (Rapsberry Pi camera compatible) 1 x Terminal 5 pins plug 1 x I/O Expansion 28 pins header 1 x Modem USB interface 1 x mSATA interface 1 x Micro-SD connector
Features	1 x Button LED 3 x Boot jumpers 1 x PWM 1 x SPI 1 x I2C 1 x MMC 1 x CAN transceiver 1 x RS485 2 x RS232 1 x Audio codec
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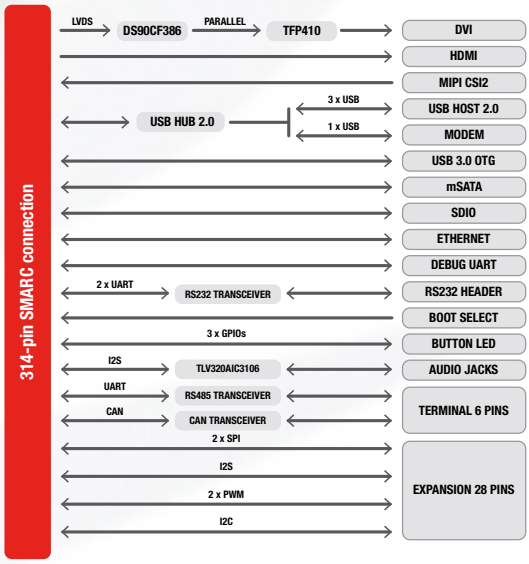

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Portable data terminals
Navigation
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Gaming
Medical imaging
Home automation
Human Interface
Industrial Control
Test and Measurement
Single board computers
Audio and image processing

ORDERING INFORMATION

MODEL	REFERENCE	DESCRIPTION
IGEP™ SMARC™ AM3352	IGEP-SMARC-AM3352-256M-128M-W-FE-NE-ND	Processor AM3352, 256MB RAM, 128MB FLASH, WIFI, Fast Ethernet
IGEP™ SMARC™ AM3354	IGEP-SMARC-AM3354-512M-512M-W-FE-E-D	Processor AM3354, 512MB RAM, 512MB FLASH, WIFI, Fast Ethernet, Gigabit Ethernet, DVI-D
Customized models (minimum purchase order: 100 units)		
IGEP™ SMARC™ AM3358	IGEP- SMARC-AM3358-256M-128M-W-FE-E-D(*)	Processor AM3358, 256MB RAM, 128MB FLASH, WIFI, Fast Ethernet, Gigabit Ethernet, DVI-D(*)
IGEP™ SMARC™ AM3359	IGEP- SMARC-AM3359- 256M-128M-W-FE-E-D(*)	Processor AM3359, 256MB RAM, 128MB FLASH, WIFI, Fast Ethernet, Gigabit Ethernet, DVI-D(*)
Related Products		
IGEP™ SMARC™ EXPANSION	BASE0040-RB10	Expansion board for fast prototyping of user's projects.

(*): 1. No Wifi: NW – instead of W- available on request.
2. Other RAM / Flash available on request.
3. No Gigabit Ethernet available on request (NE).
4. No Fast Ethernet available on request (NFE).
5. No DVI-D (ND) available on request.

ABOUT ISEE

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- IGEP™v2 and all Expansion boards goes open source and open hardware licensed under Creative Commons Attribution-Non Commercial-Share Alike 3.0 unported license.
- ISEE develops a new Module based on OMAP4 family processors.

2012
- ISEE develops IGEP™ COM AQUILA the Cortex-A8 low cost solution.
- ISEE develops the new Platform IGEP™v5 based on OMAP5 family.

2013
- ISEE releases IGEP™ COM AQUILA and IGEP™ AQUILA Expansion.
- ISEE releases the new Platform IGEP™v5.

2014
- ISEE develops new modules based on SMARC™ protocol.

2015
- ISEE releases its first SMARC™ modules: IGEP™ SMARC™ PXA2128 and IGEP™ SMARC™ iMX6.

2016
- ISEE releases IGEP™ SMARC™ AM335x.

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IGEP™

IGEP™ TECHNOLOGY

IGEP™ COM AQUILA

OVERVIEW

ARM Cortex-A8 CPU up to 1000MHz

The IGEP™ COM AQUILA AM335x is an industrial ultra low power computer module based on ARM Cortex-A8 at speeds up to 1000MHz by Texas Instruments Sitara AM335x family of processors.

It's an industrial computer platform in a very low profile. The standard model is based on the AM3354 processor, but it can be customized with other of the same family. Furthermore, with different combinations of RAM and Flash memory, a complete list of interfaces and peripherals, and with the possibility to have a 3D graphics accelerator, it can be the base for any complex industrial equipment or any other kind of application.

As a complementary product, it's also available a carrier board (IGEP™ AQUILA EXPANSION) to help the user to develop his final application in a easy way.

LIST OF MODELS

MODEL	PROCESSOR	FREQUENCY (MHZ)	GRAPHICS	RAM MEMORY	FLASH MEMORY
IGEP™ COM AQUILA AM3354	AM3354	800 / 1000	3D graphics	256 MB	128 MB
Customized models					
IGEP™ COM AQUILA AM3352	AM3352	800 / 1000		128 MB up to 512 MB	128 MB up to 512 MB
IGEP™ COM AQUILA AM3358	AM3358	800 / 1000	3D graphics		
IGEP™ COM AQUILA AM3359	AM3359	800	3D graphics		

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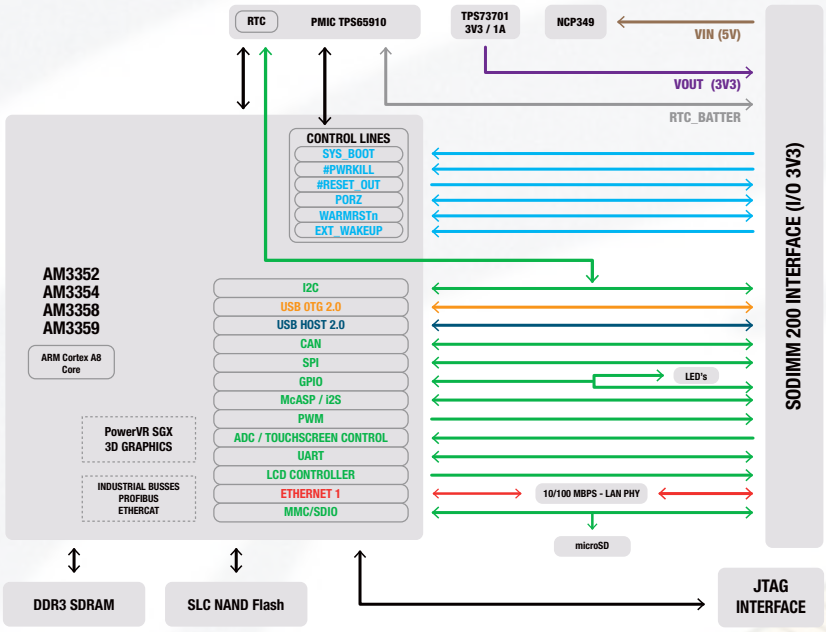
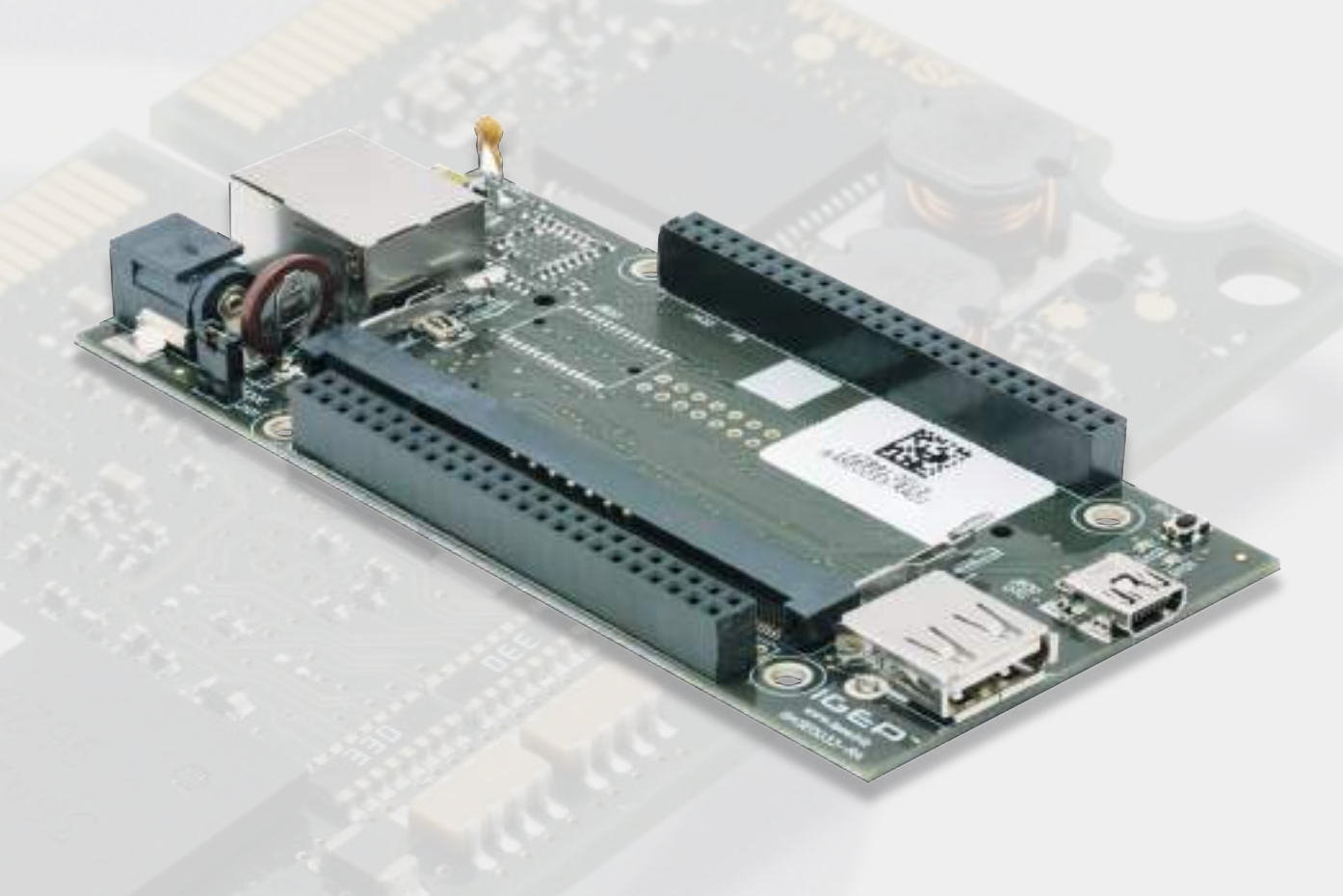


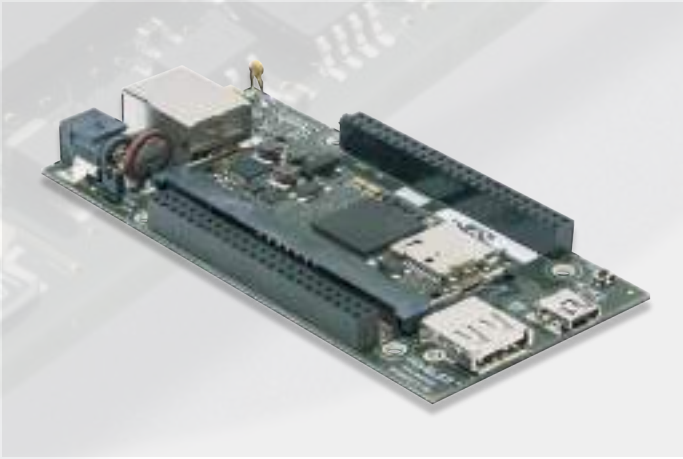
TECHNICAL SPECIFICATIONS

Processor	AM3354[1] / AM3352 / AM3358 / AM3359, by Texas Instruments ARM Cortex-A8 NEON SIMD Coprocessor Frequency speed up to 1000 MHz (depending on model)
3D/2D Accelerator	PowerVR SGX GPU, providing graphics acceleration with OpenGL ES1.0, OpenGL ES2.0 and Open-VG support. (Depending on model.)
Memory	RAM: 128 MB up to 512 MB [2] FLASH: 128 MB up to 512 MB [3] Onboard micro-SD card socket
Ethernet	10/100 Mbps Ethernet PHY interface
USB 2.0	1 x USB 2.0 Host 1 x USB 2.0 OTG
Display	1 x Digital Video/TFT interface (24-bits)
Additional Interfaces [4]	1 x I2C 1 x CAN 1 x SPI 14 x GPIOs 1 x McASP/i2S (Digital Serial Audio Interface) 1 x PWM 8 x ADC 3 x UART 2 x MMC (one used into onboard micro-SD socket) GPMC External Bus JTAG Interface
SW Support	Linux Android
Power	Power Supply: 5V Digital I/O voltage: 3.3 V
Power Consumption	Typical 1,2 W (depending on software) Maximum 1,5 W (depending on software)
Thermal	Commercial temperature: 0ºC to +70ºC Extended temperature: -20ºC to +70ºC Industrial temperature: -40ºC to +85ºC
Form Factor	67,60mm x 26,00mm Ka-Ro™ compatible
Humidity	93% relative Humidity at 40° C, non-condensing (according to IEC 60068-2-78)
MTBF	>100000 hours

Notes:
1. Standard setup
2. Standard setup RAM Memory: 256 MB
3. Standard setup Flash Memory: 128 MB
4. AM335x processors use multiplexed I/O and other combinations are possible.

IGEP™ AQUILA EXPANSION





The IGEP™ AQUILA EXPANSION is a fully equipped baseboard that access to all IGEP™ COM AQUILA functionalities. It has been designed to be used as a reliable test and development platform and it can be used as the fastest way to develop and check the user's final application before building a prototype, saving costs and reducing time-to-market.

TECHNICAL SPECIFICATIONS

Connectors	+5VDC Power Supply 1 x HDMI 1.4a output type D receptacle 1 x 10/100Mbps base T Ethernet (RJ45) 1 x USB 2.0 OTG mini-AB receptacle 1 x USB 2.0 Host header 1 x Serial debug 3V3 interface header 1 x JTAG 14 pins header 2 x Expansion 46 pins header
Features	4 x LED indicators 1 x EEPROM 1 x RESET pushbutton 1 x RTC battery 1 x 3-Axis accelerometer Up to 44 GPIOs 1 x SPI 2 x UART 1 x I2C 4 x PWM All DSS display interface
Dimmensions	112 x 54.61 mm

APPLICATIONS

Portable data terminals
Navigation
Auto Infotainment
Gaming
Medical imaging
Home automation
Human Interface
Industrial Control
Test and Measurement
Single board computers
Audio and image processing

ORDERING INFORMATION

MODEL	REFERENCE	DESCRIPTION
IGEP™ COM AQUILA AM3354	IGEP0033-RB1x	Processor: AM3354BZCZD80 / RAM Memory: 256 MB DDR3 SDRAM / Storage: 128 MB NANDFLASH
Customized models (minimum purchase order: 100 units)		
IGEP™ COM AQUILA AM3352	IGEP0033-RB2x	Processor: AM3352BZCZD80 / RAM Memory: 128 MB up to 512 MB DDR3 SDRAM / Storage: 128 MB up to 512 MB NANDFLASH
IGEP™ COM AQUILA AM3354	IGEP0033-RB3x	Processor: AM3354BZCZD80 / RAM Memory: 512 MB DDR3 SDRAM / Storage: 128 MB NANDFLASH
IGEP™ COM AQUILA AM3358	IGEP0033-RB4x	Processor: AM3358BZCZA80 / RAM Memory: 128 MB up to 512 MB DDR3 SDRAM / Storage: 128 MB up to 512 MB NANDFLASH
IGEP™ COM AQUILA AM3359	IGEP0033-RB5x	Processor: AM3359BZCZA80 / RAM Memory: 128 MB up to 512 MB DDR3 SDRAM / Storage: 128 MB up to 512 MB NANDFLASH
Related Products		
IGEP™ AQUILA EXPANSION	BASE0033-RA01	Designed for fast prototyping of user's projects.

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IGEP™

IGEP™ TECHNOLOGY

IGEP™ COM MODULE

OVERVIEW

ARM Cortex-A8 CPU up to 1000 MHz
DSP C64+ @800 MHz
2D/3D Video Accelerator

The IGEP™ COM MODULE is an industrial ultra low power embedded computer module based on ARM Cortex-A8 CPU by Texas Instruments.

It's an industrial computer platform in a very low profile. The processor is scalable from AM3703 up to DM3730 (the standard model), adding graphic acceleration and C64+ DSP. It can be used as a computer-on-module for your products, and a wide range of peripherals and functionalities (USB Host and OTG, WiFi, Bluetooth…) allow an easy connection to the final application.

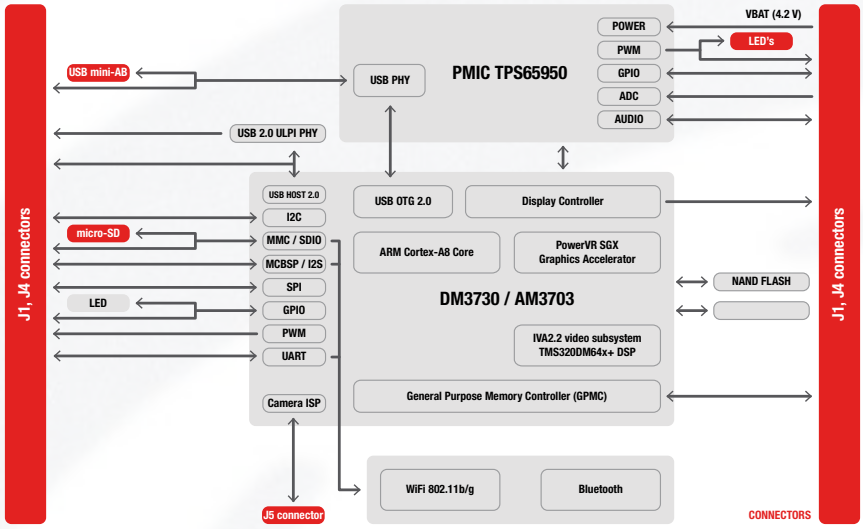
As complementary products, there are different carrier boards, to help the user to develop his final application, and cameras.

LIST OF MODELS

MODEL	PROCESSOR	FREQUENCY (MHZ)	DSP	WIFI BLUETOOTH	GRAPHICS	RAM MEMORY	FLASH MEMORY
IGEP™ COM MODULE DM3730 WIFI	DM3730	1000	C64+ @800 MHz	Yes (1)	3D graphics	512 MB	512 MB
Customized models							
IGEP™ COM MODULE AM3703 WIFI	AM3703	1000	No	Yes (1)	No	256 MB	512 MB

Notes: 1. Also available without WIFI/Bluetooth on request.

BLOCK DIAGRAM



TECHNICAL SPECIFICATIONS

	IGEP™ COM MODULE DM3730 (1)	IGEP™ COM MODULE AM3703
Processor	DM3730, by Texas Instruments ARM Cortex-A8 NEON SIMD Coprocessor Frequency speed 1000Mhz TMS320C64+ DSP 800 MHz (Only in DM3730 version)	AM3703, by Texas Instruments ARM Cortex-A8 Frequency speed 1000MHz
3D/2D Accelerator	PowerVR SGX GPU, providing graphics acceleration with OpenGL ES1.0, OpenGL ES2.0 and OpenVG support. (Only in DM3730 version)	
Video	Video acceleration: H.264, H.263, MPEG-4, MPEG-2, JPEG, WMV9 and additional codecs. Video encoder/decoder up to 720p. (Only in DM3730 version)	
Memory	RAM: Up to 512MB Mobile DDR (2) Flash: Up to 512MB (4) Onboard micro-SD card socket	
Ethernet	No	
USB 2.0	1 x USB 2.0 Host (connector not included) 1 x USB 2.0 OTG	
Display	1 x Digital Video/TFT interface Resolution 2048 x 2408 – 24 bits 1 x Analog S-Video interface (5)	
Image Capture Interface	1 x CPI Interface (12 bits)	
Wireless(5)	WiFi IEEE 802.11 b/g/n (Access Point: Yes) Bluetooth v4.0 (BLE)	
Antenna(5)	1 x Internal WiFi/Bluetooth antenna 1 x U.FL connector for external antenna	
Additional Interfaces	4 x UART 1 x I2C 1 x MMC (no WiFi version) 1 x I2S 1 x GPMC 1 x Analog Audio In 1 x Audio Out 2 x SPI 76 x GPIO (6) 5 x Analog-to-Digital Converter 4 x PWM	
SW Support	Linux Android	
Power Supply	Power from expansion connectors: From 3.5 V to 4.2 V DC Digital I/O voltage: 1,8 V	
Power Consumption	Typical 1 W (depending on software)	
Thermal	Commercial Temperature: 0ºC to 60ºC Industrial Temperature: -40ºC to +85ºC	
Form Factor	18mm x 68.5mm Gumstix™ compatible	
Humidity	93% relative Humidity at 40ºC, non-condensing (according to IEC 60068-2-78)	
MTBF	> 100000 hours	

Notes:

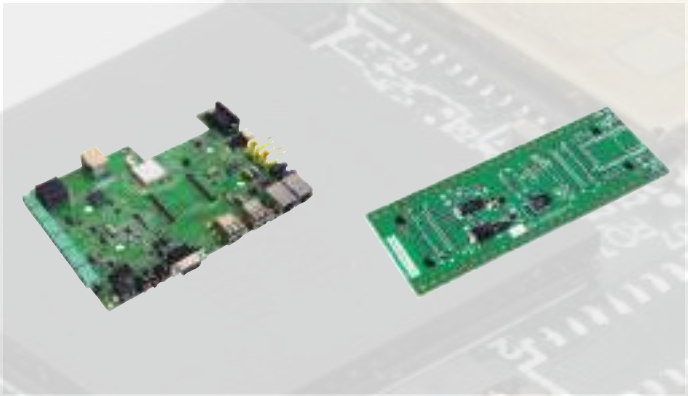
1. Standard model
2. Standard setup: 512 MB
3. Standard setup: 256 MB
4. Standard setup: 512 MB
5. Optional
6. Maximum number of GPIOs.

RELATED PRODUCTS

EXPANSION BOARDS

The expansion boards are baseboards designed to be used as a reliable test and development platform, and they can be used as the fastest way to develop and check the user's final application before building a prototype, saving costs and reducing time-to-market.

IGEP™ BERLIN | **IGEP™ NEW YORK**



TECHNICAL SPECIFICATIONS

	IGEP™ BERLIN	IGEP™ NEW YORK
Connectors	1 x HDMI (DVI) Video Output 1 x DB25 VGA Video Output 2 x RCA Video Input 3 x RJ45 Ethernet 4 x USB 2.0 Type A receptacle 1 x USB 2.0 OTG mini-AB receptacle 1 x Jack Stereo Analog Audio In 1 x Jack Stereo Analog Audio Out 1 x DB9 RS232 1 x RS485 1 x CAN Interface 3 x Relay Outputs (250VAC/30VDC/5A) 2 x Digital Inputs (5V) 2 x Analog Inputs (1V8) 1 x TFT 1 x Resistive Touchscreen 1 x Main Battery connector	Expansion connection interface
Features	1 x GSM/GPRS Modem 1 x Buzzer 1 x EEPROM 2 x LED indicators 1 x User Switch 1 x RTC battery	1 x 3-Axis Accelerometer
Dimmensions	194 x 132 mm	68 x 26 mm

CAMERA

The IGEP™ CAM BIRD are very compact cameras designed to work with IGEP™ COM MODULE and IGEP™ v2 DM370. They are based on Aptina MT9V034, 1/3-inch color Wide-VGA CMOS Digital Image Sensor. These cameras are the ideal complement for security systems or surveillance applications.

TECHNICAL SPECIFICATIONS

	IGEP™ CAM KESTREL COLOR
Camera Sensor	
Image Sensor	Aptina MT9P031I2STC 1/2,5-inch Color RGB 5Mp CMOS Digital Full resolution: 14fps VGA (640x480): 53fps 2592H x 1944V resolution Redout modes: skipping or binning Shutter types: Global reset release, Snapshot only, Electronic rolling shutter
Camera Interfaces	12-bit parallel CMOS Imager Interface I2C Interface
Optical Lens	
Lens	3.6mm f/2.0 miniature 1/3"
Lens Holder	M12 PCB Lens holder CS-Mount Lens holder
Other Features	
Connectors	1 x 0,3mm pitch 27-pin FPC connector 1 x 1,27mm pitch 2x15-pin header interface (not included)
Devices	1 x I2C 12-bit parallel CMOS Imager Interface
Power	From FPC connector

APPLICATIONS

Portable data terminals
Navigation
Auto Infotainment
Gaming
Medical imaging
Home automation
Human Interface
Industrial Control
Test and Measurement
Single board computers
Audio and image processing

ORDERING INFORMATION

MODEL	REFERENCE	DESCRIPTION
IGEP™ COM MODULE DM3730 WIFI	IGEP0030-RG60	Processor DM3730, 512 MB RAM memory, 512 MB NandFlash, with WiFi connectivity
IGEP™ COM MODULE DM3730 NO WIFI	IGEP0030-RG70	Processor DM3730, 512 MB RAM memory, 512 MB NandFlash, without WiFi connectivity
Customized models (minimum purchase order: 100 units)		
IGEP™ COM MODULE AM3703 WIFI	IGEP0030-RG2x	Processor AM3703, 256 MB RAM memory, 512 MB NandFlash, with WiFi connectivity
IGEP™ COM MODULE AM3703 NO WIFI	IGEP0030-RG8x	Processor AM3703, 256 MB RAM memory, 512 MB NandFlash, without WiFi connectivity
Related Products		
IGEP™ BERLIN	BASE0010-RB3	Expansion board for fast prototyping of user's projects
IGEP™ NEW YORK	ILMS0015-RA2	Expansion board for fast prototyping of user's projects
IGEP™ CAM BIRD	CAMR0010-RA10	Color camera for IGEP™ COM MODULE
IGEP™ CAM BIRD MONOCHROME	CAMR0010-RA20	Monochrome camera for IGEP™ COM MODULE
IGEP™ CAM KESTREL COLOR	CAMR0020-RA10	5 Megapixels color camera

All the IGEP™ COM MODULE models can be customized on request, respecting the minimum purchase order of 100 units. Contact with ISEE to consult the customizing possibilities. Moreover, ISEE can develop a complete system for the user's application. Please contact our Sales Department for further information.

ABOUT ISEE

ISEE is an Engineering company specialized in embedded-computer systems.

Our mission is to offer complete embedded solutions that help industries to improve their production level, reducing costs and time-to-market of their products, allowing to gain a competitive edge.

We are able to help our customers with our own products, standard or customized, or developing a concrete project according to the needs of that application.

Our services include technical support (hardware and firmware) to help the user along the project.

EVOLUTION OF THE COMPANY

2006
- ISEE starts its activity as Integration Software and Electric Engineering.
- The ISEE Engineers create the IGEP™ concept.

2007
- ISEE creates the IGEP™ Technology.
- ISEE releases the first IGEP™ Platform based on ARM9.

2009
- ISEE releases the second generation of IGEP™ Platform with IGEP™v2.
- ISEE develops the IGEP™v2 Expansion.
- ISEE develops IGEP™ Radar Techology.

2010
- IGEP™ COM MODULE arrives to the market.
- IGEP™ COM PROTON arrives to the market.
- ISEE releases the IGEP™ COM MODULE expansion family with IGEP™ BERLIN and IGEP PARIS.

2011
- IGEP™v2 and all Expansion boards goes open source and open hardware licensed under Creative Commons Attribution-Non Commercial-Share Alike 3.0 unported license.
- ISEE develops a new Module based on OMAP4 family processors.

2012
- ISEE develops IGEP™ COM AQUILA the Cortex-A8 low cost solution.
- ISEE develops the new Platform IGEP™v5 based on OMAP5 family.

2013
- ISEE releases IGEP™ COM AQUILA and IGEP™ AQUILA Expansion.
- ISEE releases the new Platform IGEP™v5.

2014
- ISEE develops new modules based on SMARC™ protocol.

2015
- ISEE releases its first SMARC™ modules: IGEP™ SMARC™ PXA2128 and IGEP™ SMARC™ iMX6.

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IGEP™

IGEP™ TECHNOLOGY

IGEP™ V2

OVERVIEW

ARM Cortex-A8 CPU up to 1000 MHz
DSP C64+ @800 MHz
2D/3D Video Accelerator

The IGEP™ v2 DM3730 is an industrial ultra low power embedded computer module based on ARM Cortex-A8 CPU by Texas Instruments OMAP3 family.

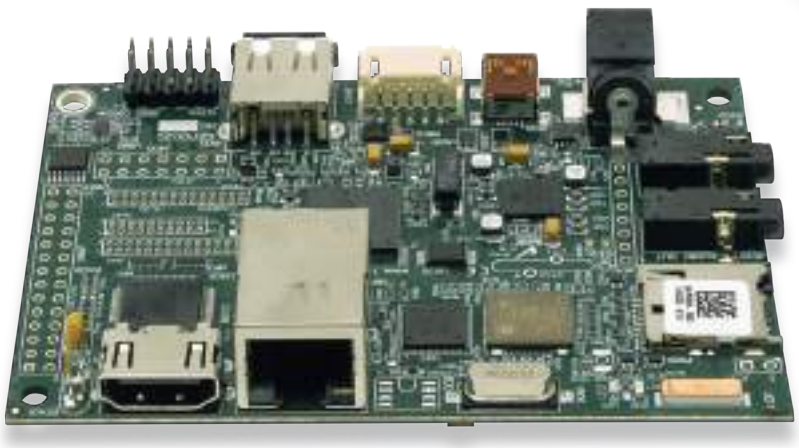
It's a fanless industrial computer platform with low power consumption and compact size. It unleashes laptop-like performance and expandability without the bulk, expense or noise of typical desktop machines. It's the perfect solution for many industrial applications or system requirements.

As complementary products, there are an expansion board (to help the user to develop his final application) and cameras.

LIST OF MODELS

MODEL	PROCESSOR	FREQUENCY (MHZ)	DSP	WIFI BLUETOOTH	GRAPHICS	RAM MEMORY	FLASH MEMORY
IGEP™ v2 DM3730	DM3730	1000	C64+ @800 MHz	Yes(1)	3D graphics	512 MB	512 MB
IGEP™ v2 DM3730 NO WIFI	DM3730	1000	C64+ @800 MHz	No	3D graphics	512 MB	512 MB

Notes: 1. Also available without WIFI/Bluetooth on request.



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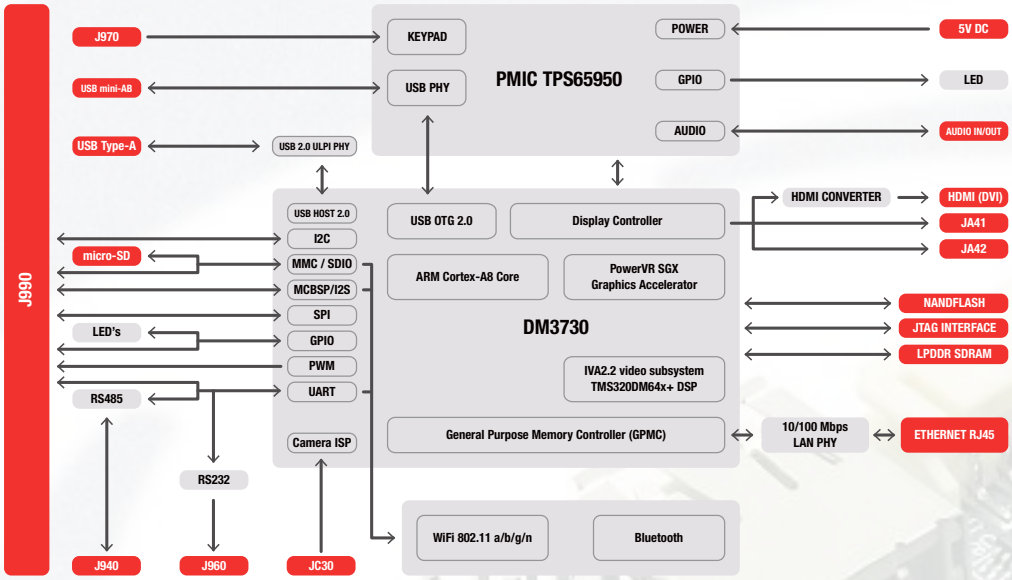

TECHNICAL SPECIFICATIONS

	IGEP™ V2 DM3730	IGEP™ V2 DM3730 NO WIFI
Processor	DM3730, by Texas Instruments ARM Cortex-A8 Frequency speed 1000MHz TMS320C64+ DSP 800MHz	
3D/2D Accelerator	PowerVR SGX GPU, providing 2D/3D graphics acceleration with OpenGL ES1.0, OpenGL ES2.0 and Open VG support	
Video	Video acceleration: H.264, H.263, MPEG-4, MPEG-2, JPEG, WMV9 and additional codecs. Video encoder/decoder up to 720p.	
Memory	RAM: Up to 512 MB Mobile DDR (Standard setup 512 MB) Flash: Up to 512 MB (Standard setup 512 MB) Onboard micro-SD card socket	
Ethernet	10/100 Mbps Ethernet PHY Interface	
USB 2.0	1 x USB 2.0 Host	1 x USB 2.0 OTG
Display	1 x DVI-D/HDMI	Resolution 2048 x 2408 – 24 bits
Image Capture Interface	1 x CPI interface (12 bits)	
Wireless	WIFI IEEE 802.11 b/g/n (Access Point: Yes) Bluetooth v4.0 (BLE)	
Antenna	1 x Internal WiFi/Bluetooth antenna 1 x U.FL connector for external antenna	
Additional Interfaces[1]	2 x I2C 2 x MMC (No WiFi version) 1 x McBSP/I2s/SSI (Digital Serial Audio Interface) 3 x SPI 39 x GPIO [2]	1 x PWM 3 x UART (RS232 ande RS485 interfaces available) 1 x Stereo Line Audio in mini jack 1 x Stereo Line Audio Out mini jack
SW Support	Linux Android	
Power Supply	Power from expansion connectors Power from JST connector: 5V Power from jack power: 5V DC (Wall Plug)	
Power Consumption	Typical 2,2 W (depending on software) Maximum 2,8 W (depending on software)	
Thermal	Commercial temperature: 0ºC to +60ºC Industrial Temperature: -40C to +85ºC	
Form Factor	65mm x 95mm	
Humidity	93% relative Humidity at 40ºC, non-condensing (according to IEC 60068-2-78)	
MTBF	>100000 hours	

Notes:
1. DM3730 processors use multiplexed I/O and other combinations are possible.
2. Maximum number of GPIOs. They are not configured by default: to reach the total quantity, it will be required configure the system and losing other functionalities.

RELATED PRODUCTS

IGEP™ V2 EXPANSION

This expansion board has been designed to be used as a test and development complementary platform of IGEP™ v2 DM3730. It can be used to check the final application in pre-prototyping phase, saving costs and reducing time-to-market.

TECHNICAL SPECIFICATIONS

Connectors	1 x DB25 VGA Video Output 2 x RCA Video Input 1 x DB9 RS232 1 x Antenna WiFi/Bluetooth connector (1) 1 x CAN Interface 1 x TFT 1 x Resistive Touchscreen
Features	1 x GSM/GPRS Modem 1 x EEPROM 1 x RTC Battery (1) 1 x High speed ADC (1)
Dimmensions	65 x 95 mm

CAMERA

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	IGEP™ CAM KESTREL COLOR
Camera Sensor	
Image Sensor	Aptina MT9P031I2STC 1/2,5-inch Color RGB 5Mp CMOS Digital Full resolution: 14fps VGA (640x480): 53fps 2592H x 1944V resolution Redout modes: skipping or binning Shutter types: Global reset release, Snapshot only, Electronic rolling shutter
Camera Interfaces	12-bit parallel CMOS Imager Interface I2C Interface
Optical Lens	
Lens	3.6mm f/2.0 miniature 1/3”
Lens Holder	M12 PCB Lens holder CS-Mount Lens holder
Other Features	
Connectors	1 x 0,3mm pitch 27-pin FPC connector 1 x 1,27mm pitch 2x15-pin header interface (not included)
Devices	1 x I2C 12-bit parallel CMOS Imager Interface
Power	From FPC connector

Notes: 1. Optional.

APPLICATIONS

Portable data terminals
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Auto Infotainment
Gaming
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Industrial Control
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Single board computers
Audio and image processing

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MODEL	REFERENCE	DESCRIPTION
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IGEP™ v2 DM3730 NO WIFI	IGEP0020-RF70	Processor DM3730, 512 MB RAM memory, 512 MB NandFlash, without WiFi connectivity
Related Products		
IGEP™ v2 EXPANSION	IGEP0022-RC1	Expansion board for fast prototyping of user's projects
IGEP™ CAM KESTREL COLOR	CAMR0020-RA10	5 Megapixels color camera

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