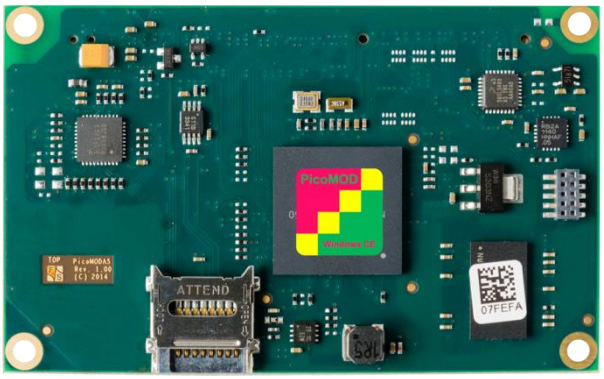
PicoMODA5

Computer On Module with NXP Vybrid Processor

Characteristics

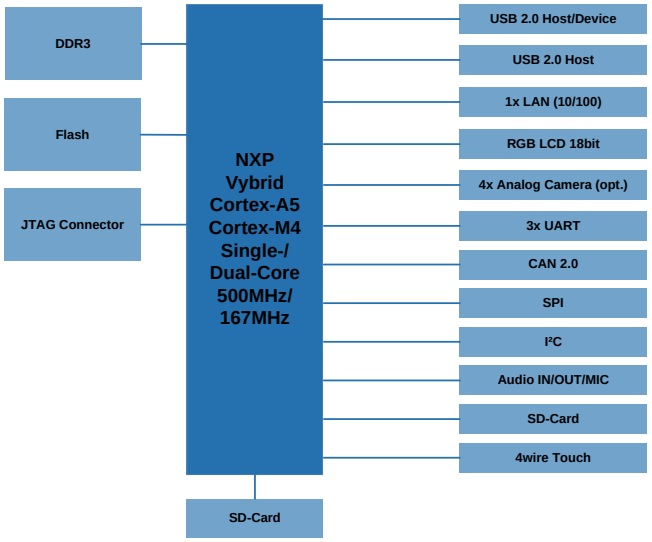
- NXP Vybrid Cortex®-A5/-M4 Single/Dual-Core 500Mhz + 167MHz
- up to 256MB DDR3 RAM and 256MB Flash
- NEON, FPU
- 18bit RGB interface
- Ethernet 10/ 100MBit
- CAN, 3x Seriell, I²C, SPI
- USB2.0 Device (High Speed), 2x USB2.0 Host
- 1x SD-Card extern/1 on-board, max. 45 E/ A
- Audio / Touch Controller
- Windows Embedded Compact 7/ MQX
- 3.3V Low Power Design



Description

PicoMODA5 is the perfect replacement for PicoMOD3/4 or 6. Additionally, it has analog camera inputs, to realize monitoring functions easily and inexpensively.
The compact size (80x50mm) and a temperature range of 0°C to +70°C are good conditions for mobile devices in rough operating environments.
The board offers 256MB Flash and 256MB DDR3-RAM.
Numerous interfaces like Serial, Ethernet, USB2.0, CAN2.0, I²C, SPI, I/ O, Audio, Touch and SD Card allow a wide scope of applications.
All common TFT displays with RGB interface can be controlled.
PicoMODA5 is supplied with 3,3V.
All signals are available via a robust 140 pole plug connector (0,8mm Pitch, Tyco).
The connector assignment is pin compatible to PicoMOD3/ 4/ 6/ 7A.

Block Diagram



On-Board Operating System

Windows Embedded Partner

Windows Embedded Compact 7 offers bootloader, interface drivers and kernel with e.g. Silverlight, Media-player or IE. This powerful real-time operating system has Compact Framework 3.5/ 3.9 and is therefore the ideal base for software development.

Starterkit

The SKIT consists of a base board with standard connectors (in PicoITX format), a fitting cable kit and a 7“ SVGA TFT with resistive touch panel. You will also receive the access data to the download area (documentation and software).

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Connector Assignment

J1 – System-Connector

1	I/O64 (SPI CS)	21	I/O5 (COM1 TxD)	41	I/O14 (I/O Pin 14 / GPIO1)	61	*VIO3 (LCD VD2)*	81	*VIO20 (LCD VM)**	101	NC (NC)	121	NC (NC)
2	I/O65 (SPI CLK)	22	I/O4 (COM1 RxD)	42	I/O13 (I/O Pin 13 / GPIO0)	62	GND (GND)	82	*VIO19 (LCD VFRAME)**	102	NC (NC)	122	NC (NC)
3	I/O66 (SPI MISO)	23	I/O7 (COM3 TxD)	43	I/O16 (I/O Pin 16 / GPIO3)	63	*VIO2 (LCD VD2)*	83	GND (GND)	103	NC (NC)	123	NC (NC)
4	I/O67 (SPI MOSI)	24	I/O6 (COM3 RxD)	44	I/O15 (I/O Pin 15 / GPIO2)	64	*VIO1 (LCD VD1)*	84	GND (GND)	104	NC (NC)	124	NC (NC)
5	CAN-TX (CAN2.0 Tx)	25	OTGDM (USB2.0 OTG Dev./Host -)	45	I/O18 (SD-Card CLK)	65	*VIO4 (LCD VD4)*	85	GND (GND)	105	NC (NC)	125	NC (NC)
6	CAN-RX (CAN2.0 Rx)	26	USBDN (USB2.0 Host -)	46	I/O17 (I/O Pin 17 / GPIO4)	66	*VIO3 (LCD VD3)*	86	*VIO21 (LCD VCLK)**	106	NC (NC)	126	IO75 (I/O Pin 75)
7	RX- (Ethernet RX-)	27	OTGDP (USB2.0 OTG Dev./Host +)	47	I/O20 (SD-Card DAT0)	67	*IVIO6 (LCD VD6)*	87	I/O70 (I/O-Pin 70)	107	NC (NC)	127	NC (NC)
8	TX- (Ethernet TX-)	28	USBDP (USB Host +)	48	I/O19 (SD-Card CMD)	68	*VIO5 (LCD VD5)**	88	I/O71 (I/O-Pin 71)	108	NC (NC)	128	ETH-ACT (Ethernet Activity)
9	RX+ (Ethernet RX+)	29	I/O9 (I/O-Pin 9 / GPIO5)	49	I/O22 (SD-Card DAT2)	69	*VIO8 (LCD VD12)**	89	NC (NC)	109	NC (NC)	129	STA1 (Status 1)
10	TX+ (Ethernet TX+)	30	I/O8 (USB Host Power On)	50	I/O21 (SD-Card DAT1)	70	*VIO7 (LCD VD7)**	90	IO72 (I/O-Pin)	110	NC (NC)	130	STA2 (Status 2)
11	V33 (+3,3V ±5% DC)	31	I/O11 (I2C-SDA)	51	I/O24 (SD-Card Detect)	71	*VIO10 (LCD VD14)**	91	NC (NC)	111	NC (NC)	131	LOUT (Audio Left Out)
12	V33 (+3,3V ±5% DC)	32	I/O10 (USB Device Detect)	52	I/O23 (SD-Card DAT3)	72	*VIO9 (LCD VD13)**	92	NC (NC)	112	NC (NC)	132	ROUT (Audio Right Out)
13	GND (GND)	33	I/O76 (I/O Pin 76)	53	I/O26 (SD-Card Write Protect)	73	*VIO12 (LCD VD18)**	93	IO73 (I/O-Pin 73)	113	NC (NC)	133	LIN (Audio Left In)
14	GND (GND)	34	I/O12 (I2C-SCL)	54	I/O25 (SD-Card Power Enable)	74	*VIO11 (LCD VD15)**	94	IOxx (I/O Pin)	114	NC (NC)	134	RIN (Audio Right In)
15	/PONRES (CPU Reset (active low))	35	BOOTSEL0 (NC (do not use)	55	*I/O28 (LCD DEN (Display enable))*	75	*VIO14 (LCD VD20)**	95	IOxx (I/O-Pin)	115	NC (NC)	135	MICIN (Microphone In)
16	VBAT (+3V…+3,6V DC (Battery buffering RTC)	36	I/O77 (I/O Pin 77)	56	*I/O27 (LCD Enable)*	76	*VIO13 (LCD VD19)**	96	NC (NC)	116	NC (NC)	136	MICBIAS (Microphone Bias)
17	I/O1 (COM2 TxD)	37	*NC (NC (do not use))*	57	I/O30 (LCD VCFL On)	77	*VIO16 (LCD VD22)**	97	NC (NC)	117	NC (NC)	137	X+ (Touch X+)
18	I/O0 (COM2 RxD)	38	NC (NC (do not use))	58	*I/O29 (LCD VLCD On)*	78	*VIO15 (LCD VD21)**	98	IO74 (I/O-Pin 74)	118	NC (NC)	138	X- (Touch X-)
19	I/O3 (COM2 RTS)	39	GND (GND)	59	GND (GND)	79	*VIO18 (LCD VLINE)**	99	NC (NC)	119	NC (NC)	139	Y+ (Touch Y+)
20	I/O2 (COM2 CTS)	40	GND (GND)	60	I/O31 (LCD VEEK)	80	*VIO17 (LCD VD23)**	100	NC (NC)	120	NC (NC)	140	Y- (Touch Y-)

LCD Connection

Pico-MODA5	RGB	
	12 bit	18 bit
VD0	-	G0
VD1	-	G1
VD2	-	B0
VD3	-	B1
VD4	B0	B2
VD5	B1	B3
VD6	B2	B4
VD7	B3	B5
VD12	G0	G2
VD13	G1	G3
VD14	G2	G4
VD15	G3	G5
VD18	-	R0
VD19	-	R1
VD20	R0	R2
VD21	R1	R3
VD22	R2	R4
VD23	R3	R5
VCLK	DCLK	DCLK
VLINE	HSYNC	HSYNC
VFRAME	VSYNC	VSYNC
VM	DE	DE
DEN	-	-

Technical Data

Power Supply:	+3.3VDC/±5%
Power Consumption:	2W typ.
Digital I/O:	max. 45 I/O
Touch Panel:	4-wire, analog resistive
Interfaces:	1x Ethernet 10/ 100 Mbit 3x Serial 1x USB2.0 Host 1x USB2.0 Device 1x CAN2.0 1x I^2C 1x SPI 1x Audio Line IN/OUT/MIC 1x SD-Card Slot on-board 1x SD-Card Slot (extern) 4x Analog Camera In (optional)
TFT LCD Interface:	TFT up to SVGA (RGB 18Bit)
RAM:	256MByte DDR3-RAM
Program Memory:	256MB Flash
Processor:	NXP Vybrid Cortex®-A5 + Cortex®-M4 (Dual-/ Single-Core) 500MHz + 167MHz
Temperature Range:	0°C - +70°C
Size:	80mm x 50mm x 10mm (l x b x d)
Weight:	about 20g

Standard Versions/ Order Notations

PMODA5-V2-WEC7
Cortex®-A5 + -M4, 256MB RAM, 256MB Flash, Audio, Ethernet, CAN, RGB, 0°C - +70°C, WEC 7

PMODA5-V1-WEC7
Cortex®-A5, 256MB RAM, 128MB Flash, Audio, Ethernet, CAN, RGB, 0°C - +70°C, WEC 7

Minimum Order Quantity for Special Versions: 500 pieces

Standard Versions/ Order Notations

PMODA5-SKIT-WEC7
Base board PicoITX, PMODA5-V1-WEC7, cable kit, access data to documentation and software, 7“ SVGA TFT with resistive touch panel and connection cable/adapter

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