

PicoMOD6

Single Board Computer with Samsung ARM1176-CPU



Characteristics

- Samsung S3C6410 with 533MHz
- 64MB Flash, 128MB mobile DDR-RAM
- Vector Floating-Point (VFP) Co-Prozessor
- TFT LCD-Controller up to SVGA-resolution
- 2D/3D graphic (4M triangles/second)
- Multiformat CODEC (MPEG4, H.264, WMV9)
H.264 30fps (SD 720x480)
- Ethernet 10/100MBit
- CAN, 3x Serielle, I2C, SPI (opt.)
- USB2.0 Device (High Speed), USB1.1 Host
- micro-SD-Card, ext. SD-/CF-Card, max. 64 E/A
- Audio / Touch controller / Matrix keyboard
- Windows CE 6.0 / Linux onboard incl. licence
- 3.3V Low Power Design (<2W at operation)

Description

The powerful PicoMOD6 is especially suited for applications with the need for high performance graphic (2D/3D/OpenGL/Direct 3D Mobile) and to show movies (MPEG4/H.264/WMV9) at a power consumption of less than 2W. This very compact (80x50mm) PicoMOD6 can be used in mobile devices as well as for stationary devices in industrial (-20°C to +85°C) and medical applications. PicoMOD6 offers onboard 64MB flash, 128MB RAM, micro SD-Card slot and many interfaces. All common TFT displays from 320x240 to 800x600 (SVGA) can be connected. The power supply of the board is a single 3.3V supply. Of course there are software drivers included for all interfaces on the board in the integrated operating system, Windows CE or Linux. A robust industry compatible 140-pin connector (0.8mm pitch, Tyco) is used to plug the PicoMOD6 onto the carrier board of the customer application. The board is pin compatible with our PicoMOD3/4.

On-Board Operating System



Reuse your Windows know-how with Windows Embedded CE 6.0! Implement your software with Visual Studio .NET. Keep contact to the future with TCP/IP, DCOM and XML. Applications can be programmed in C, C++, C# and Visual Basic.

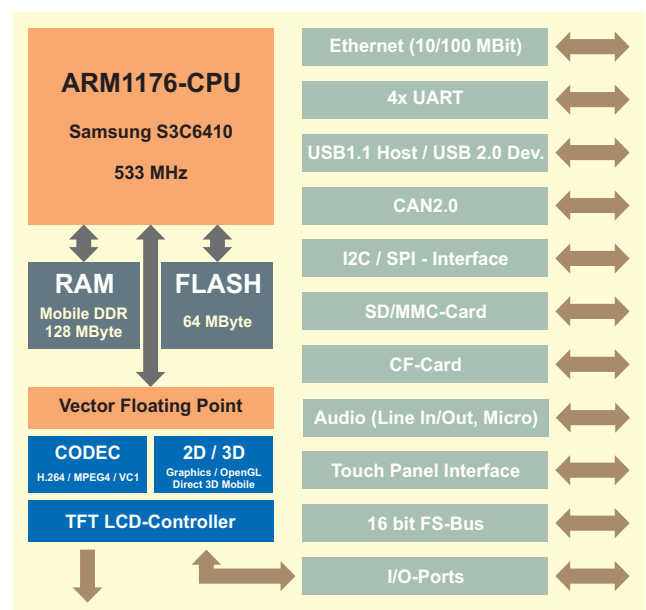


The Linux Board Support Package (BSP) is already supplied with the starterkit. The package supports all interfaces. The embedded Linux on the PicoMOD6 offers a complete Linux-kernel with graphical user interface based on the Buildroot system.

Full-Scale Representation



Block diagram



Starter-kit

For a fast and straightforward development start there is an all-purpose starter-kit available for Windows CE and Linux. This kit consists of a PicoMOD6, an intermediate board, a base board, several cables, memory media, documentation and software. Unpack the kit and supply power, this is how straightforward the project start can be. And if you take our 4-hour workshop, where you learn all about the setting-up of the PicoMOD6, it's even more simple. For the software development under Windows CE, the Microsoft Visual Studio .NET is required (not included). For Linux development, the full Version of the Board Support Package is included.

Connector assignment

J1 - System-Connector													
1	I/O64 (SPI CS)	21	I/O5 (COM1 TxD)	41	I/O14	61	I/O32 (LCD VD0)	81	I/O52 (LCD VM)	101	A2 (Address 2)	121	D11 (Data 11)
2	I/O65 (SPI CLK)	22	I/O4 (COM1 RxD)	42	I/O13	62	GND (System Ground)	82	I/O51 (LCD VFRAME)	102	A3 (Address 3)	122	D12 (Data 12)
3	I/O66 (SPI MISO)	23	I/O7 (COM3 TxD)	43	I/O16	63	I/O34 (LCD VD2)	83	GND (System Ground)	103	A4 (Address 4)	123	D13 (Data 13)
4	I/O67 (SPI MOSI)	24	I/O6 (COM3 RxD)	44	I/O15	64	I/O33 (LCD VD1)	84	GND (System Ground)	104	A5 (Address 5)	124	D14 (Data 14)
5	CAN-TX (COM4 TxD)	25	OTGDM (USB)	45	I/O18 (SD-CLK)	65	I/O36 (LCD VD4)	85	GND (System Ground)	105	A6 (Address 6)	125	D15 (Data 15)
6	CAN-RX (COM4 RxD)	26	USBDN (USB Host -)	46	I/O17	66	I/O35 (LCD VD3)	86	I/O53 (LCD VCLK)	106	A7 (Address 7)	126	I/O75 (CF Power En.)
7	RX- (Ethernet)	27	OTGDP (USB)	47	I/O20 (SD-DAT0)	67	I/O38 (LCD VD6)	87	I/O70 (CF nCD)	107	A8 (Address 8)	127	CS0 (FS-Bus CS)
8	TX- (Ethernet)	28	USBDP (USB Host +)	48	I/O19 (SD-CMD)	68	I/O37 (LCD VD5)	88	I/O71 (CF nIRQ)	108	A9 (Address 9)	128	ETH-ACT (Ethernet)
9	RX+ (Ethernet)	29	I/O9	49	I/O22 (SD-DAT2)	69	I/O40 (LCD VD12)	89	nWAIT (CF nWAIT)	109	A10 (Address 10)	129	STA1 (Status 1)
10	TX+ (Ethernet)	30	I/O8 (USB Power1)	50	I/O21 (SD-DAT1)	70	I/O39 (LCD VD7)	90	I/O72 (CF nPACK)	110	D0 (Data 0)	130	STA2 (Status 2)
11	+3,3V (Power Supply)	31	I/O11 (I2C-SDA)	51	I/O24 (SD-Detect)	71	I/O42 (LCD VD14)	91	CS4 (CF CS2)	111	D1 (Data 1)	131	LOUT (Audio L. Out)
12	+3,3V (Power Supply)	32	I/O10 (USB Power2)	52	I/O23 (SD-DAT3)	72	I/O41 (LCD VD13)	92	CS5 (CF CS3)	112	D2(Data 2)	132	ROUT (Audio R. Out)
13	GND (System Ground)	33	I/O76	53	I/O26 (SD-Write Prot.)	73	I/O44 (LCD VD18)	93	I/O73 (CF REG)	113	D3 (Data 3)	133	RIN (Audio Left In)
14	GND (System Ground)	34	I/O12 (I2C-SCL)	54	I/O25 (SD-Power En.)	74	I/O43 (LCD VD15)	94	nOE_CF (CF nOE)	114	D4 (Data 4)	134	RIN (Audio Right In)
15	nPONRES (Res CPU)	35	BOOTSEL0	55	I/O28 (LCD DEN)	75	I/O46 (LCD VD20)	95	nWE_CF (CF nWE)	115	D5 (Data 5)	135	MICIN (Micro In)
16	VBAT (RTC Supply)	36	I/O77	56	I/O27 (LCD Enable)	76	I/O45 (LCD VD19)	96	nOE	116	D6 (Data 6)	136	MICBIAS (Micro Bias)
17	I/O1 (COM2 TxD)	37	BOOTSEL1	57	I/O30 (LCD VCFL On)	77	I/O48 (LCD VD22)	97	nWE	117	D7 (Data 7)	137	X+ (Touch X+)
18	I/O0 (COM2 RxD)	38	BOOTSEL2	58	I/O29 (LCD VLCD On)	78	I/O47 (LCD VD21)	98	I/O74 (CF RESET)	118	D8 (Data 8)	138	X- (Touch X-)
19	I/O3 (COM2 RTS)	39	GND (System Ground)	59	GND (System Ground)	79	I/O50 (LCD VLINE)	99	A0 (Address 0)	119	D9 (Data 9)	139	Y+ (Touch Y+)
20	I/O2 (COM2 CTS)	40	GND (System Ground)	60	I/O31 (LCD VEEK)	80	I/O49 (LCD VD23)	100	A1 (Address 1)	120	D10 (Data 10)	140	Y- (Touch Y-)

LCD-connection

Pico-MOD6	TFT	
	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:	+3.3 _{VDC} / ±5%
Power consumption:	< 400mA
Digital I/O:	max. 66 I/O-port lines (alternative with interfaces allocated)
Touch-screen:	4 wire, analog resistive
Interfaces:	1x Ethernet 10/100 Mbit 3x Serial (1x with RTS/CTS) 1x Serial if CAN2.0 not applicable (optional) 1x USB2.0 Host or USB2.0 Device (High Speed) 1x USB1.1 Host 1x CAN2.0 1x I2C 1x SPI (optional) Audio (Line in/out, Micro in, all analogue) 1x micro-SD-Card-Slot 1x SD-Card-Slot (external) 1x Compact Flash Slot (external) 1x FS-Bus Schnittstelle
TFT LCD-Interface:	up to 800x600 pixel, 256/65536 colours rotation 90°/180°/270° Graphic: 2D/3D (OpenGL, Direct 3D Mobile) Multi Format CODEC (MPEG4, H.264, WMV9) Vector Floating Point Coprocessor (VFP)
RAM:	128MByte mobile DDR-RAM
Program memory:	64MByte Flash
Processor:	Samsung S3C6410-533
Temperature range:	-20°C ... 85°C
Dimension:	80mm x 50mm x 9mm (l x w x h)
Weight:	ca. 20 gr

Standard versions / Order notation

PicoMOD6-ANC-WCE

128MB DDR-RAM, 64MB Flash, Audio, Ethernet, CAN, Windows CE 6.0

PicoMOD6-ANC-LIN

128MB DDR-RAM, 64MB Flash, Audio, Ethernet, CAN, Embedded Linux

PicoMOD6-SKIT-WCE

Starter-kit with PicoMOD6-ANC-WCE, intermediate board, base board, cables, SD-Card, USB-Stick, SDK, dokumentation

PicoMOD6-SKIT-LIN

Starter-kit with PicoMOD6-ANC-WCE, intermediate board, base board, cables, SD-Card, USB-Stick, SDK, dokumentation

NetDCU-WS

Quick-start-workshop for PicoMOD und Windows CE / Linux

Order key

PicoMOD6-128D64FANC-WCE

RAM DDR-RAM	Flash	Audio	Ethernet	CAN	System
blank 128 MByte	blank 64 MByte	blank no Audio	blank no Ethernet	blank no CAN	WCE Windows CE 6.0
	1F 1 GByte	A Audio	N Ethernet	C CAN2.0	LIN Embedded Linux

Attention:

Special versions only for order quantities of at least 1000 parts!