

TX09 Series	<div style="display: flex; justify-content: space-between; align-items: center;"> 32bit <div style="text-align: center;"> <p style="font-size: 0.8em;">Under Development</p> <h1 style="margin: 0;">TMPA900CMXBG</h1> </div> 289pin </div>
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High-performance 32-bit RISC microcontroller with a USB host controller

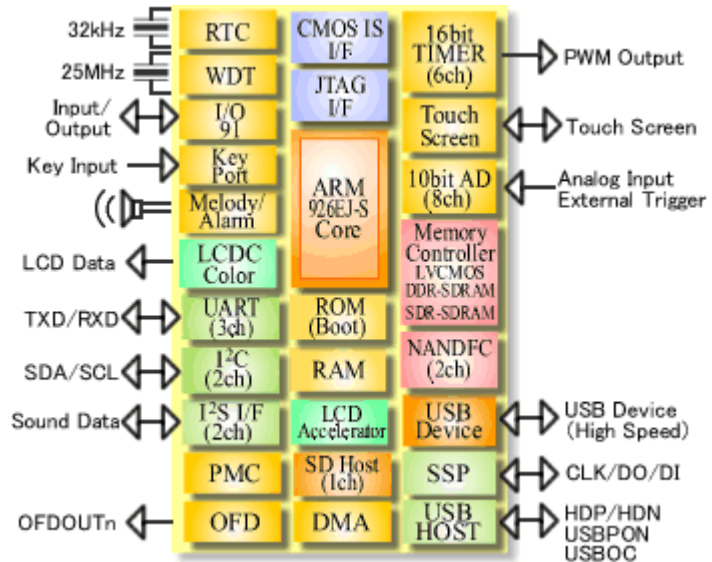
Features

● ARM926EJ-S™ CPU Core

- Operating voltage:
Internal: 1.4 to 1.6 V I/O: 1.7 to 1.9 V, 3.0 to 3.6 V
- Minimum instruction execution time:
5 ns (200 MHz internal, 0 to 70°C)
6.67 ns (150 MHz internal, -20 to 85°C)
- Data cache: 16 Kbytes
- Instruction cache: 16 Kbytes
- Internal ROM: 16 Kbytes (Boot)
- Internal RAM: 32 Kbytes
- External data bus width: Up to 32 bits

● On-chip Functions

- Color LCD controller (24-bit TFT/STN) : 1 channel
- LCD data process accelerator
- Memory controller
 - Static memory
 - SDR SDRAM
 - LVC MOS DDR SDRAM
- NAND Flash controller : 2 channels
- SD host controller : 1 channels
- CMOS image sensor interface : 1 channel
- USB (High-speed) device controller : 1 channel
- USB (Full-Speed) host controller : 1 channel
- DMA controller : 8 channels
- SSP (SPI/MicroWire mode) : 2 channels
- RTC : 1 channel



- UART : 3 channels
- I²C : 2 channels
- I²S interface : 2 channels
- 10-bit AD converter : 8 channels
- 16-bit timer : 6 channels
- Touch-screen interface : 1 channel
- JTAG interface
- Power management circuit (PMC)
- Oscillation frequency detection (OFD)

Package Information

● Pin Assignments

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17
E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16	E17
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17
G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17
H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17
J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14	J15	J16	J17
K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14	K15	K16	K17
L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17
M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17
N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	N15	N16	N17
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17
U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13	U14	U15	U16	U17

·Package name:
FBGA289-P-1515-0.80AZ

Top View

● Pin Numbers and Names (1/4)

	1	2	3	4	5	6	7	8	9
A	A1 DVSSCOM	A2 DVCC1A	A3 SM3/XT2	A4 SM2/XT1	A5 PU3/ND03/ LD3	A6 PU2/ND02 /LD2	A7 PU1/ND01 /LD1	A8 PU0/ND00 /LD0	A9 SE5/A6
B	B1 DVCC3I0	B2 DVSSCOM	B3 PC2/PWE	B4 PC3/ MLDALM/ PWM1OUT	B5 PU7/ND07/ LD7	B6 PU6/ND06/ LD6	B7 PU5/ND05/ LD5	B8 PU4/ND04/ LD4	B9 SF3/A11
C	C1 SP4/RTCK	C2 SP0/TCK	C3 DVSSCOM	C4 PC4F SOUT/ PWM3OUT	C5 PV3/NDCL /LD11	C6 PV2/NDAL /LD10	C7 PV1/NDMEn /LD9	C8 PV0/NDREn LD8	C9 SG0/A16
D	D1 SP5/TDO	D2 SP2/TDI	D3 SP1/TMS	D4 DVSSCOM	D5 PV7/LD15	D6 PV6/NDRB/ LD14	D7 PV5/ NDCE1n/ LD13	D8 PV4/NDCE0n LD12	D9 SG4/A20
E	E1 PG0/ SDC0DAT0	E2 PG2/ SDC0DAT2	E3 SP3/TRSTn	E4 PC6/I2C0CL/ USBPON	E5 DVSSCOM	E6 PL0/ I2S0MS/ SP1FSS	E7 PL1/ I2S0CLK/ SP1CLK	E8 PL4/I2SSCLK	E9 SG7/A23
F	F1 PG1/ SDC0DAT1	F2 PG3/ SDC0DAT3	F3 PG5/ SDC0WP	F4 PF6M2C1C/ U2TXD	F5 PC7/ I2C0DA /INT9/ USB0Cn	F6 DVSSCOM	F7 PL3/ I2S0MCLK/ SP1DI	F8 PL2/ I2S0DATV SP1DO	F9 SK7/ SMCBE3n
G	G1 PG7/ SDC0CLK	G2 PG4/ SDC0CMD	G3 PG6/ SDC0CD	G4 PF7M2C1DA/ INTC/ U2RXD	G5 ST0/LD0	G6 ST1/LD1	G7 DVSSCOM	G8 DVCC3I0	G9 DVCCM
H	H1 ST2/LD2	H2 ST3/LD3	H3 ST4/LD4	H4 ST5/LD5	H5 ST6/LD6	H6 ST7/LD7	H7 DVCC3LCD	H8 DVSSCOM	H9 DVSSCOM
J	J1 SU0/LCLCP	J2 SU1/LCLAC	J3 SU3/LCLFP	J4 SU4/LCLLP	J5 PK0/LD16/ CMSD0	J6 PK1/LD17/ CMSD1	J7 DVCC3LCD	J8 DVSSCOM	J9 DVSSCOM

● Pin Numbers and Names (2/4)

	10	11	12	13	14	15	16	17
A	A10 SE4/A4	A11 SE3/A3	A12 SE2/A2	A13 SE1/A1	A14 SE0/A0	A15 DVCCM	A16 DVCC1A	A17 DVSSCOM
B	B10 SF2/A10	B11 SF1/A9	B12 SF0/A8	B13 SE7/A7	B14 SE6/A6	B15 DVCCM	B16 DVSSCOM	B17 DVCC1B
C	C10 SF7/A15	C11 SF6/A14	C12 SF5/A13	C13 SF4/A12	C14 DVCCM	C15 DVSSCOM	C16 SL2/DMCAP	C17 SL1/ DMCCLKN
D	D10 SG3/A19	D11 SG2/A18	D12 SG1/A17	D13 DVCCM	D14 DVSSCOM	D15 SK2/ DMCSDQM2	D16 SK0/ DMCSDQM0/ DMCDDM0	D17 SL0/ DMCCLKP/ DMCCLK
E	E10 SG6/A22	E11 SG5/A21	E12 DVCCM	E13 DVSSCOM	E14 SK4/SMCMEEn	E15 SK3/ DMCSDQM3	E16 SK1/ DMCSDQM1/ DMCDDM1	E17 SL6/ DMCCLKIN
F	F10 SK6/ SMCBE2n	F11 DVCCM	F12 DVSSCOM	F13 SK5/SMCBE1n	F14 SD7/D31	F15 SD6/D30	F16 SB7/D15	F17 SB6/D14
G	G10 DVCCM	G11 DVSSCOM	G12 SJ6/DMCCKE	G13 SJ5/DMCBA1	G14 SD5/D29	G15 SD4/D28	G16 SB5/D13	G17 SB4/D12
H	H10 DVSSCOM	H11 DVCCM	H12 SJ4/DMCBA0	H13 SJ3/ DMCCASn	H14 SD3/D27	H15 SD2/D26	H16 SB3/D11	H17 SB2/D10
J	J10 DVSSCOM	J11 DVCCM	J12 SJ1/DMCMEEn	J13 SJ2/ DMCRASn	J14 SD1/D25	J15 SD0/D24	J16 SB1/D9	J17 SB0/D8

● Pin Numbers and Names (3/4)

K	K1 PJ0/LD8	K2 PJ1/LD9	K3 PJ2/LD10	K4 PJ3/LD11	K5 PK2/LD18/C MSD2	K6 PK3/LD19/C MSD3	K7 DVCC3LCD	K8 DVSSCOM	K9 DVSSCOM
L	L1 PJ4/LD12/ CMS/PC/K	L2 PJ5/LD13/C MSH/SY	L3 PJ6/LD14/C MSH/BK	L4 PJ7/LD15/C MSV/SY	L5 PK4/LD20/C MSD4	L6 PK5/LD21/C MSD5	L7 DVSSCOM	L8 DVCC3I0	L9 DVCC3I0
M	M1 AVCC3AD	M2 VREFH	M3 VREFL	M4 PK6/LD22/C MSD6	M5 PK7/LD23/C MSD7	M6 DVSSCOM	M7 PA0/K0	M8 PA1/K1	M9 PA2/K2
N	N1 PD0/AN0	N2 PD1/AN1	N3 PD2/AN2	N4 AVSS3AD	N5 DVSSCOM	N6 DVCC1A	N7 PN6/U0DTRn/ INTF	N8 PN7/ U0RTSn/ INTG	N9 PA3/K3
P	P1 PD3/AN3	P2 PD4/AN4/ MX	P3 PD5/AN5/ MY	P4 DVSSCOM	P5 DVCC1A	P6 PN2/ U0CTSn	P7 PN3/U0DCCn	P8 PN4/U0DSRn/ INTD	P9 PN5/U0RIn/ INTE
R	R1 PD6/ INTA(INTTSI)/ AN6	R2 PD7/MNTB/ AN7	R3 DVSSCOM	R4 DVCC1A	R5 PN0/ U0TXD/ SIR0OUT	R6 PN1/ U0RXD/ SIR0IN	R7 SM7/AM1	R8 AVSS3C	R9 AVDD3T1
T	T1 DVCC1B	T2 DVSSCOM	T3 DVCC1A	T4 SM6/AMD	T5 DVCC1C	T6 DVSS1C	T7 AVDD3C	T8 SR3/REXT	T9 AVSS3T2
U	U1 DVSSCOM	U2 DVCC1A	U3 SM4/ RESETh	U4 SM0/X1	U5 SM1/X2	U6 DVCC1C	U7 SR4/VBNS	U8 AVSS3T3	U9 SR1/DDM
	1	2	3	4	5	6	7	8	9

● Pin Numbers and Names (4/4)

K	K10 DVSSCOM	K11 DVCCM	K12 SH7/DMCCSn	K13 SJD/SMC0En	K14 SC7/D23	K15 SC6/D22	K16 SL5/ DMCDDQS1	K17 SL4/ DMCDDQS0
L	L10 DVCC3I0	L11 DVSSCOM	L12 SH3/SMCCS0n	L13 SH4/SMCCS1n	L14 SC5/D21	L15 SC4/D20	L16 SA7/D7	L17 SA6/D6
M	M10 SN2/SELJTAG	M11 SN1/SELDVCCM	M12 DVSSCOM	M13 SH2/SMCBE0n	M14 SC3/D19	M15 SC2/D18	M16 SA5/D5	M17 SA4/D4
N	N10 PB3/K03	N11 PM3/M2S1MCLK	N12 PM2/M2S1DATO	N13 DVSSCOM	N14 SC1/D17	N15 SC0/D16	N16 SA3/D3	N17 SA2/D2
P	P10 PB2/K02	P11 PB1/K01/LCLAC	P12 PM1/M2S1CLK	P13 PM0/M2S1WS	P14 DVSSCOM	P15 PR2/MNTH	P16 SA1/D1	P17 SA0/D0
R	R10 SN0/SELMEMC	R11 PB0/K00	R12 PT2/SR0D0	R13 PT1/SR0CLK	R14 PT0/ SPOFSS	R15 DVSSCOM	R16 PR0/ RESETOUTn	R17 PR1/ OFDOUTn/ FCOUT
T	T10 AVSS3T1	T11 AVDD3T0	T12 PT6/AU1CTSn	T13 PT5/AU1RXD	T14 PT4/ U1TXD	T15 PT3/SR0D1	T16 DVSSCOM	T17 DVCC1B
U	U10 SR0DDP	U11 AVSS3T0	U12 PT7/X1USB	U13 AVCC3H	U14 SN7/HDM	U15 SN6/HDP	U16 DVCC1A	U17 DVSSCOM
	10	11	12	13	14	15	16	17

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