VOSM6490 System-on-Module



Product Brief

The VOSM6490 is a premium, ready-to-integrate System-on-Module designed to accelerate the development of next-generation, high-performance embedded IoT devices. The module delivers flagship-level computing, artificial intelligence, and connectivity within the compact and scalable OSM (Open Standard Module) form factor. Powered by the Qualcomm® processor, it integrates an octa-core Kryo™ 670 cluster running at up to 2.7 GHz, paired with an Adreno™ 643 GPU and a 12-TOPS Hexagon™ NPU, delivering sufficient raw performance for demanding edge AI workloads while keeping the module within a low-power envelope.

The VOSM6490 supports FHD+ video display, up to 36MP at 30fps camera ISP, alongside the internal Hexagon™ DSP for high-quality multimedia applications. Connectivity is enabled via the carrier board, supporting dual GbE ports, Wi-Fi, and Bluetooth. A comprehensive set of I/O is exposed through the standard OSM edge connector, including USB, PCIe, GPIO, multiple serial interfaces, and audio channels, enabling flexible, high-performance industrial and commercial IoT designs.

With support for Android 15+ and Linux distributions upon request, it offers developers a streamlined path, featuring extended software support and enhanced security from the outset. The VOSM6490 is ideally suited for a wide range of demanding applications, including HMIs, machine vision systems, autonomous mobile robots, advanced digital signage, and patient monitoring devices.

Features and benefits

VOSM6490
High-performance, low-power edge AI processor
Up to 12 TOPS NPU for efficient real-time inference
2160p H.265/H.264 encoder & decoder
36MP@30fps ZSL camera ISP
Rich I/O: USB, UART, SPI, GPIO, PCIe, I^2C, PWM
GbE, Wi-Fi, BT support via carrier board
Android and Linux systems supported
OSM size-L (45mm × 45mm) compliant
Extended service life (7+ years)

Application Scenarios



Smart Cities



Smart Retail



Surveillance System



Home Appliance



Industrial IoT



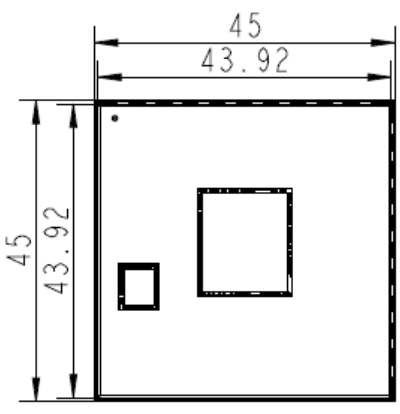
Healthcare

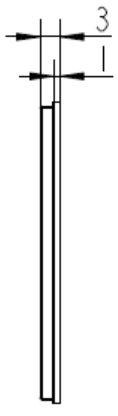
VOSM6490 System-on-Module Datasheet

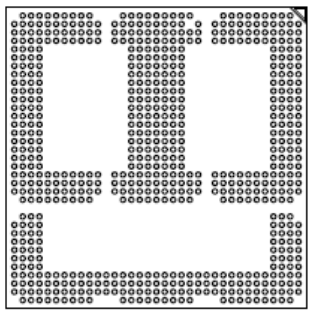
Specifications			
System	CPU	Qualcomm QCS6490 octa-core Kryo 670 processor: 1 × A78@2.7GHz, 3 × A78@2.4GHz, 4 × A55@1.9GHz	
	GPU	Qualcomm Adreno 643 GPU, 812MHz, Support OpenGL ES 3.2, Vulkan 1.x, OpenCL 2.0, DX FL12	
	NPU	Qualcomm Hexagon 770 NPU, up to 12 Dense TOPS	
	Memory	8GB LPDDR5	
	Storage	64GB eMMC 5.1	
Media	Video processing	4K60 decoder for H.265/H.264/VP9	4K30 encoder for H.265/H.264
	Image signal processing	Qualcomm Spectra 570L ISP Single camera resolution: 36MP@30fps ZSL	
	Digital signal processing	Qualcomm Hexagon DSP, 1980 MPPS	
Power	Input	5V/3A DC input	
Software	Operating system	Android 15+, Linux support upon request	
	Device management	BlueSphere MDM (Optional for Android version)	
Mechanical	Dimensions	45mm × 45mm (OSM Size-L)	Packaging: LGA
Miscellaneous	RTC	Integrated RTC	
Environmental Condition	Temperature	Operating: -20℃ ~ +60℃	Storage: -40℃ ~ +80℃
	Humidity	5%~95% RH (Non-condensing)	

I/O		
UFS	1 × UFS 2.2 /UFS3.1, up to 512GB (with power supply)	
Display (Single display output)	1 × 4-Lane MIPI DSI D-PHY V1.2/C-PHY V1.0, up to 2520 × 1080 @144Hz	
	1 × 4-Lane eDP1.4, up to 2520 × 1080 @144Hz	
Camera	1 × 4-Lane MIPI CSI, up to 36MP@30fps ZSL	
Audio	2 × I^2S (support 1 × SDI, 1 × SDO)	
USB	1 × USB 3.1 Type-C, dual-role 5Gbps (non-DP ALT mode)	
	1 × USB 2.0 480Mbps, Host only	
PCIe	1 × 2-Lane PCIe 3.0 (Support NVMe SSD, PCIe Ethernet MAC)	
	1 × 1-Lane PCIe 3.0 (Support WLAN)	
SDIO	1 × 4-Bit SDIO V3.0	
ADC	2 × 10-Bit ADC input	
SPI	3 × SPI (Support 1 x MISO, 1 x MOSI)	
UART	1 × Debug UART (1.8V)	6 × Communication UART (1.8V)
JTAG	Supported	
I^2C	3 × I^2C	
GPIO	32 × GPIO (Max.)	
PWM	5 × PWM	
Key Signal	1 × Power key	1 × Volume + key
	1 × Reset/Volume - key	1 × Home key
	1 × Force USB boot key	1 × 2-Bit boot select switch

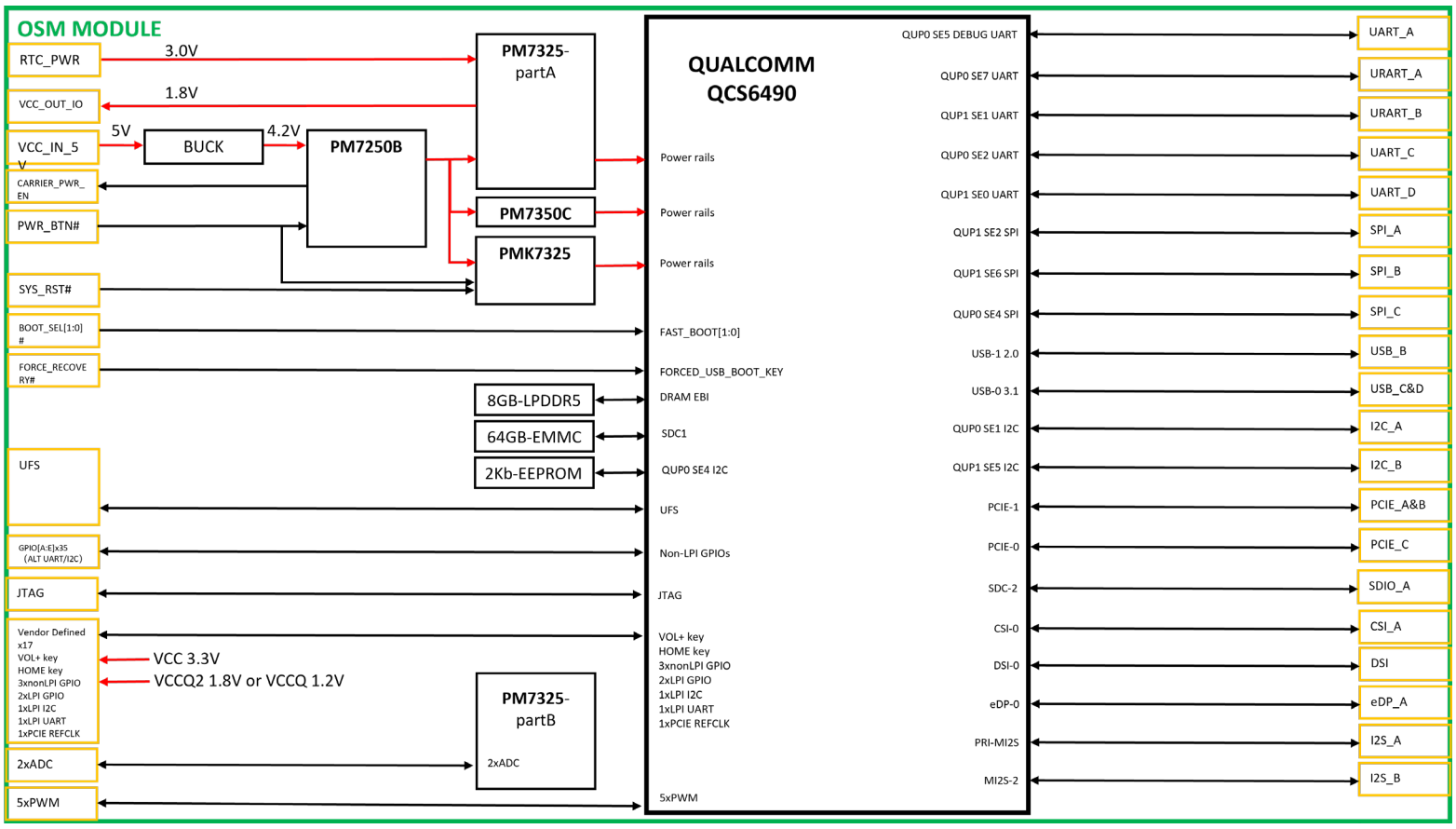
Product Outlines



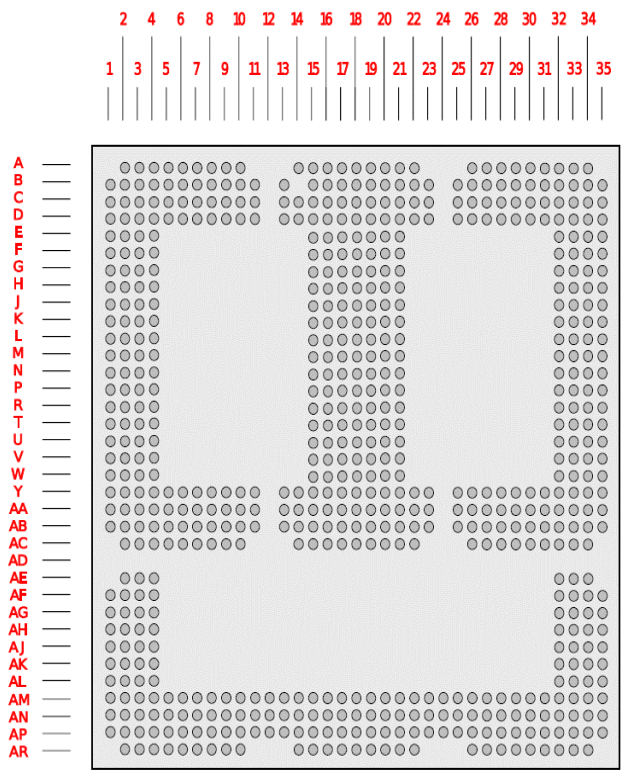




Block Diagram



Pinout



(View from top, through the module)

In the tables below:

*** Pin** refers to the pin number defined by OSM as shown in above figure.

*** Signal** refers to the pin name used by Vantron.

*** CPU Ball #** refers to corresponding designations of the QCS6490 CPU.

***** Certain signals are derived from additional ICs and the corresponding IC names are provided.

***** Unless otherwise explicitly stated, the I/O level is **1.8V**.

Pin*	Signal*	CPU Ball #*	Description
U19	BOOT_SEL0#	BL5	BOOT config[0] BOOT config[1:0]=11=eMMC BOOT config[1:0]=10=UFS
R18	BOOT_SEL1#	BP4	BOOT config[1] BOOT config[1:0]=11=eMMC BOOT config[1:0]=10=UFS
V17	CARRIER_PWR_EN	104 (PM7250B)	Carrier power control 1=ON; 0=OFF (PD 1M)
T17	FORCE_RECOVERY#	BK44	FORCED_USB_BOOT 0=boot from USB; 1=defined by BOOT config [1:0] (PU 10K)
AA9	PWR_BTN#	78 (PM7250B), 23 (PMK7325)	POWER KEY 0=active; 1=inactive (PU 10K)
W17	RTC_PWR	102, 111 (PM7250B)	RTC power input (**3V** voltage)
U17	SYS_RST#	10 (PMK7325)	RESET KEY 0=active; 1=inactive (PU 10K)
AB18, AA18	NC		No connection
M19, Y16, Y20, Y3, C5, AA33	NC		No connection
Y17, Y8, Y9	VCC_IN_5V		**5V** power input for the module

(To be continued…)

Pin	Signal	CPU Ball #	Description
Y10, Y11, Y25, Y26, Y27, Y28, AE4	VCC_IN_5V		**5V** power input for the module
AF4, AG4, AH3, AH4, AJ3, AJ4, AK4	VCC_IN_5V		**5V** power input for the module
B29, Y19	NC		No connection
U18	VCC_OUT_IO	11 (PM7325)	1.8V IO power source output < 100mA
D18, E15, E21, F16, F20, J16, J20, L18	GND		Ground
M16, M20, P18, R16, R20, V16	GND		Ground
V20, AA14, AA17, AA19, AA22, AB15	GND		Ground
Y18, AB21, A7, A10, A4, B2, B5, B8, B9	GND		Ground
C11, D1, D5, D8	GND		Ground
E2, H2, H4, L2, L4, P2, P4, R1, U2, U4	GND		Ground
V1, W3, Y2, AA1, AA4, AA7, AA8	GND		Ground
AA10, AA11, AB3, AB6, AB9, AC4, AC7	GND		Ground
AC10, A26, A29, A32, B27, B28, B30	GND		Ground
B33, C25, C32, C35	GND		Ground
D28, D34, F33, F35, G34, H32, J33	GND		Ground
J35, K34, M35, N34, T34, W34	GND		Ground
AA25, AA26, AE2	GND		Ground
AA27, AA28, AA32, AB28	GND		Ground
AB31, AB34, AC27, AC30, AC33, AE34	GND		Ground
AF35, AG3, AH2, AK3, AL2, AH34	GND		Ground
AJ35, AL34, AM13, AM16, AM19, AN3	GND		Ground
AM22, AM35, AN6	GND		Ground
AN9, AN11, AP2, AN15, AN18, AP5	GND		Ground
AN21, AN33, AP8, AP13, AP16, AP19	GND		Ground
AP22, AP25, AP28, AP31, AP34, AR14	GND		Ground
AR17, AR20, AR26, AR29, AR32, T18	GND		Ground
T19, Y13, Y14, N2, AA13, AA2, J32	NC		No connection
K32, K33, L32, M32, M33, N32 P32, P34	NC		No connection
R32, R33, T32, T33, AB25, AB26, AE32	NC		No connection
AL3, AL4, AM3, AM4, AM5, AM6, AM7, AM8	NC		No connection

Pin	Signal	CPU Ball #	Description
AM9, AM10, AM23, AM24, AM25, AM26	NC		No connection
AM27, AM28, AM29, AM30, AM31, AN2	NC		No connection
AN5, AN7, AN8, AN24 AN25, AN26, AN27	NC		No connection
AN28, AN29, AN30	NC		No connection
AN31, AP10, AP22	NC		No connection
AP25, AP28, AP31, AP34, AR14	GND		Ground
AR17, AR20, AR26, AR29, AR32	GND		Ground
C2	MCLK of camera	AA1	Camera master clock
G3	PWN of camera	BP16	Camera power enable
G4	RESET of camera	BG5	Camera reset
B3	CSI_CLOCK_N	AU5	MIPI CSI 0 differential clock -
B4	CSI_CLOCK_P	AU7	MIPI CSI 0 differential clock +
C1	CSI_DATA0_N	AV4	MIPI CSI 0 differential data 0 -
B1	CSI_DATA0_P	AV6	MIPI CSI 0 differential data 0 +
A2	CSI_DATA1_N	AU3	MIPI CSI 0 differential data 1 -
A3	CSI_DATA1_P	AU1	MIPI CSI 0 differential data 1 +
A5	CSI_DATA2_N	AW3	MIPI CSI 0 differential data 2 -
A6	CSI_DATA2_P	AW1	MIPI CSI 0 differential data 2 +
B6	CSI_DATA3_N	AW7	MIPI CSI 0 differential data 3 -
B7	CSI_DATA3_P	AW5	MIPI CSI 0 differential data 3 +
C4	I2C_CAM_SCL	BB2	I2C serial clock (PU 2.2K)
C3	I2C_CAM_SDA	BC3	I2C serial data (PU 2.2K)
F4	DISP_BL_EN	134 (PM7350C)	Backlight enable for MIPI DSI display (PD 1M)
E18	DISP_BL_PWM	99 (PM7350C)	PWM dimming for MIPI DSI display
F3	DISP_VDD_EN	BA41	VDD logic enable for MIPI DSI display
AB8	DSI0_C1_CLK_M	AC45	MIPI DSI 0 clock -
AB7	DSI0_B1_CLK_P	AC43	MIPI DSI 0 clock +
AB11	DSI0_B0_LN0_M	AG45	MIPI DSI 0 differential data 0 -
AB10	DSI0_A0_LN0_P	AG43	MIPI DSI 0 differential data 0 +
AC9	DSI0_A1_LN1_M	AD44	MIPI DSI 0 differential data 1 -
AC8	DSI0_C0_LN1_P	AE43	MIPI DSI 0 differential data 1 +
AC6	DSI0_B2_LN2_M	AF46	MIPI DSI 0 differential data 2 -
AC5	DSI0_A2_LN2_P	AF44	MIPI DSI 0 differential data 2 +
AB5	DSI0_NC_LN3_M	AD46	MIPI DSI 0 differential data 3 -
AB4	DSI0_C2_LN3_P	AE45	MIPI DSI 0 differential data 3 +
AA3	DSI_TE	AG47	Tearing effect (TE) of MIPI DSI display
M18	ADC_0	52 (PM7325)	ADC input (8-bit recommended to use with NTC)
N18	ADC_1	42 (PM7325)	ADC input (8-bit recommended to use with NTC)

(To be continued…)

Pin	Signal	CPU Ball #	Description
AC18	JTAG_PS_HOLD	5 (PMK7325)	JTAG power supply hold
R19	JTAG_TRST_N	BP28	JTAG test reset, active low
P19	NC		No connection
N17	JTAG_TCK	BR29	JTAG test clock
P17	JTAG_TDI	BN27	JTAG test data in
R17	JTAG_TDO	BN29	JTAG test data out
N19	JTAG_TMS	BM28	JTAG test mode select
C18	NC		No connection
B22	KYPD_VOL_UP_N	100 (PM7325)	Volume + key, active low
C16	KYPD_HOME_N	87 (PM7250B)	Home key, active low
P16	I2S-B_MCLK	AW45	I2S master clock
D6	I2S-B_SCK	AU45	I2S serial clock
D7	I2S-B_LRCK	AV44	I2S left-right clock
Y29	UFS_VCC_3.3V		**3.3V** power supply for UFS
Y30	UFS_VCCQ2_1.8V		**1.8V** power supply for UFS
Y31	UFS_VCCQ2_1.8V		**1.8V** power supply for UFS
AA29	UFS_VCC_3.3V		**3.3V** power supply for UFS
AA30	EXT_GPIO_1	P42	General-purpose 1.8V I/O
AA31	EXT_GPIO_2	R43	General-purpose 1.8V I/O
AK32	EXT_I2C_SDA	G45	I2C serial data for external devices
AK33	EXT_I2C_SCL	H46	I2C serial clock for external devices
AL32	EXT_UART_TX	K46	UART transmit data
AL33	EXT_UART_RX	L47	UART receive data
AM32	PCIE0_REFCLK_P_WCN	R3	PCIe differential reference clock + for wireless module
AM33	PCIE0_REFCLK_M_WCN	T2	PCIe differential reference clock - for wireless module
F18	PWM_1	BA7	Pulse width modulation 1
G18	PWM_2	BH4	Pulse width modulation 2
H18	PWM_3	BH2	Pulse width modulation 3
J18	PWM_4	AU43	Pulse width modulation 4
K18	PWM_5	AU41	Pulse width modulation 5
AB17, AC17	NC		No connection
AB19, AC19	NC		No connection
C14	WCN_BT_UART_CTS	BE5	UART clear to send dedicated to BT
C13	WCN_BT_UART_RTS	BD6	UART request to send dedicated to BT
A14	WCN_BT_UART_RXD	BC5	UART receive data dedicated to BT
B13	WCN_BT_UART_TXD	BD4	UART transmit data dedicated to BT
D16	UART_B_CTS	BF43	UART B clear to send
D15	UART_B_RTS	BG43	UART B request to send
D14	UART_B_RXD	BH44	UART B receive data
D13	UART_B_TXD	BH46	UART B transmit data

Pin	Signal	CPU Ball #	Description
A22	UART_C_RXD	BJ1	UART C receive data
B23	UART_C_TXD	BJ3	UART C transmit data
D22	UART_DEBUG_RXD	BF4	Debug UART receive data
D23	UART_DEBUG_TXD	BF6	Debug UART transmit data
C22	UART_D_RXD	AY42	UART D receive data
C23	UART_D_TXD	BA43	UART D transmit data
V21	MI2S0_DATA0	AB44	MI2S0 data 0
W21	MI2S0_DATA1	AB46	MI2S0 data 1
V19	MI2S2_DATA0	AV46	MI2S2 data 0
W19	MI2S2_DATA1	AW47	MI2S2 data 1
W20	MI2S0_SCK	AA47	MI2S0 serial clock
W18	MI2S0_WS	AH46	MI2S0 word select
V18	PRI_MI2S_MCLK	AA45	Primary MI2S master clock
AB2	PCIE1_RX0_M	BM40	PCIe 1 receive data 0 –
AB1	PCIE1_RX0_P	BP40	PCIe 1 receive data 0 +
AC3	PCIE1_TX0_M	BN39	PCIe 1 transmit data 0 -
AC2	PCIE1_TX0_P	BR39	PCIe 1 transmit data 0 +
V2	PCIE1_RESET_N	AE5	PCIe 1 reset, active low
M34	PCIE1_RX1_M	BN37	PCIe 1 receive data 1 -
L34	PCIE1_RX1_P	BL37	PCIe 1 receive data 1 +
L35	PCIE1_TX1_M	BM38	PCIe 1 transmit data 1 -
K35	PCIE1_TX1_P	BP38	PCIe 1 transmit data 1 +
L33, R2, T1, U1	NC		No connection
W2	PCIE1_CLK_REQ_N	BH6	PCIe 1 clock request, active low
Y1	PCIE1_REFCLK_M	BP36	PCIe 1 reference clock -
W1	PCIE1_REFCLK_P	BM36	PCIe 1 reference clock +
T2	PCIE1_WAKE_N	AE7	PCIe 1 wakeup, active low (PU10K)
D11	USB0_HS_DM	BJ27, 81 (PM7250B)	USB 0 high-speed data -
D10	USB0_HS_DP	BH28, 73 (PM7250B)	USB 0 high-speed data +
C10	USB-C VBUS EN	AF16	USB-C VBUS enable
D9	USB0_CC1	54 (PM7250B)	USB 0 configuration channel 1
C8	USB0_CC2	63 (PM7250B)	USB 0 configuration channel 2
B11	USB0_SS_RX0_M	BK34	USB 0 super-speed receive data 0 -
B10	USB0_SS_RX0_P	BM34	USB 0 super-speed receive data 0 +
A9	USB0_SS_TX0_M	BL33	USB 0 super-speed transmit data 0 -
A8	USB0_SS_TX0_P	BN33	USB 0 super-speed transmit data 0 +
C9	USB0_HS_DM	AG7	USB-C VBUS detection **(5V)** (PD 47K)
D26, D25, C26, D27	NC		No connection
C28, B26, B25, A28	NC		No connection
A27, C27, AB13	NC		No connection
AA15	APPS_I2C_SCL	BN3	I2C serial clock for application processor (PU 2.2K)
AA16	APPS_I2C_SDA	BP2	I2C serial data for application processor (PU 2.2K)
AA20	I2C_SCL_TP	BE45	I2C serial clock for TP (PU 2.2K)
AA21	I2C_SDA_TP	BD44	I2C serial data for TP (PU 2.2K)

(To be continued…)

Pin	Signal	CPU Ball #	Description
AC14, AC16, AB14 AB16, AC21	NC		No connection
AB23	USB1_HS_DM	BJ25	USB 1 high-speed data -
AC22	USB1_HS_DP	BH26	USB 1 high-speed data +
AC20	USB_B_EN	95 (PM7325)	USB-B enable
AB22	USB_B_ID	BJ45	USB-B OTG ID
AB20	USB_B_VBUS	26 (PM7325)	USB-B VBUS **(5V)** (PD 47K)
J21	SD_CARD_DET_N	GPIO91	SD card detection (PU 10K)
F21	SDC2_CLK	K4	SDC 2 clock
E20	SDC2_CMD	AT44	SDC 2 command (PU 10K)
G20	SDC2_DATA_0	AR41	SDC 2 data bit 0
G21	SDC2_DATA_1	AR43	SDC 2 data bit 1
H20	SDC2_DATA_2	AR45	SDC 2 data bit 2
H21	SDC2_DATA_3	AT46	SDC 2 data bit 3
C20	SDC2_VDDIO_3V/1.8V	67 (PM7350C)	SDC 2 VDDIO **(3V/1.8V)**
D21	VREG_L9C_2P96	44 (PM7350C)	Voltage regulator **(3V)** (PU 1K)
D20	SDC2_WP		SDC 2 write protection (PU 10K)
T21, K20, K21, L20, L21, M21	NC		No connection
N20, N21, P20, P21, R21, T20	NC		No connection
U21, U20, AC15	NC		No connection
D17	GPIO/LT8711_RESET	Y46	GPIO/defined on carrier
E17	GPIO/QPS615_1.8V_EN	M3	GPIO/defined on carrier
F17	GPIO/QPS615_0.9V_EN	P2	GPIO/defined on carrier
G17	GPIO/QPS615_RESET	N3	GPIO/defined on carrier
H17	GPIO/QPS615_INT	BG3	GPIO/defined on carrier
J17	GPIO/UPD7202_RESET	BL45	GPIO/defined on carrier
D19	GPIO/RS485-1_UART_CTS	BF2	GPIO/defined on carrier
E19	GPIO/RS485-1_UART_RTS	BE1	GPIO/defined on carrier
F19	GPIO/RS485-1_UART_TX	BE3	GPIO/defined on carrier
G19	GPIO/RS485-1_UART_RX	BD2	GPIO/defined on carrier
H19	GPIO/TP_RESET	BM2	GPIO/defined on carrier
J19	GPIO/TP_INT	BK4	GPIO/defined on carrier
K19	GPIO/SPI to CAN-1 INT	BL43	GPIO/defined on carrier
L19	GPIO/SPI to CAN-1 SOP	BB6	GPIO/defined on carrier
D3	GPIO/M2-M_PWER_EN	BC43	GPIO/defined on carrier
D4	GPIO/FAN_EN	BD42	GPIO/defined on carrier
E3	GPIO/CAMERA_ POWER_ON	BE43	GPIO/defined on carrier
E4	GPIO/eDP_BLK_EN	BJ43	GPIO/defined on carrier
U32	GPIO/SPI to CAN-2 INT	BR11	GPIO/defined on carrier
U33	GPIO/SPI to CAN-2 SOP	BP10	GPIO/defined on carrier
V32	GPIO/WIFI_WAKE_AP	BR9	GPIO/defined on carrier
V33	GPIO/M2-E_PWER_EN	BP8	GPIO/defined on carrier
W32	GPIO/PCIE0_WAKE _N_WCN	BJ9	GPIO/defined on carrier (PU 10K)
W33	GPIO/PCIE0_CLK_ REQ_N_WCN	BL9	GPIO/defined on carrier (PU 10K)

Pin	Signal	CPU Ball #	Description
Y32	GPIO/ WLAN_DISABLE1	BR5	GPIO/definition on carrier
AF32	GPIO/ WLAN_DISABLE2	BL7	GPIO/definition on carrier
AF33	GPIO/BT_WAKE_AP	BM8	GPIO/definition on carrier
AG32	GPIO/AP_WAKE_BT	BP14	GPIO/definition on carrier
AG33	GPIO/ AUDIO_AMP_EN	BA5	GPIO/definition on carrier
AH32	GPIO/EXT_GPIO_3	BK16	GPIO/definition on carrier
AH33	GPIO/EXT_GPIO_4	BM4	GPIO/definition on carrier
AJ32	GPIO/EXT_I2C2_SDA	M2	GPIO/definition on carrier
AJ33	GPIO/EXT_I2C2_SCL	M4	GPIO/definition on carrier
W15, W16, K17	NC		No connection
Y15	SPI_A_CS0#	BB46	SPI_A chip select, active low
U16	SPI_A_SCK	BA45	SPI_A serial clock
U15	SPI_A_SDI	AY46	SPI_A serial data in
V15	SPI_A_SDO	AY44	SPI_A serial data out
AA23	SPI_B_CS0#	BG45	SPI_B chip select, active low
L17, Y33, F15, E16	NC		No connection
Y21	SPI_B_SCK	BG47	SPI_B serial clock
Y22	SPI_B_SDI	BF46	SPI_B serial data in
Y23	SPI_B_SDO	BF44	SPI_B serial data out
C30	SPI_C_CS0#	BD46	SPI_C chip select, active low
D29	SPI_C_SCK	BC45	SPI_C serial clock
C29	SPI_C_SDI	BB44	SPI_C serial data in
D30	SPI_C_SDO	BC47	SPI_C serial data out
F15, E16, R15, M15	NC		No connection
L16, N15, P15, J15	NC		No connection
K16, K15, L15, H15	NC		No connection
G15, H16, G16, N16	NC		No connection
E1, D2, P1, L1, K2	NC		No connection
M1, N1, H1, J2, J1	NC		No connection
K1, G1, F1, G2, F2	NC		No connection
C6, C7, M2, AB35	NC		No connection
AC34, W35, T35	NC		No connection
U34, R35, P35, N35	NC		No connection
V34, V35, U35	NC		No connection
Y35, AA35, Y34	NC		No connection
AA34, R34, N33	NC		No connection
P33, AF3, AE3, AP1	NC		No connection
AL1, AK2, AM1	NC		No connection
AN1, AH1, AJ2, AJ1	NC		No connection
AK1, AF1, AG1, AG2	NC		No connection
AF2, AM2, AR2	NC		No connection
AN4, AN10, AR8	NC		No connection
AR9, AR10, AR5	NC		No connection
AP6, AP3, AP4, AR6	NC		No connection
AR7, AR3, AR4, AP9	NC		No connection
M17, T16, T15	NC		No connection

(To be continued…)

Pin	Signal	CPU Ball #	Description
AP32	PCIE0_RX_M_WCN	U3	PCIe 0 receive data - for wireless module
AP33	PCIE0_RX_P_WCN	U1	PCIe 0 receive data + for wireless module
AP35, AN35, AL35	NC		No connection
AK35, AH35, AG35	NC		No connection
AR33	PCIE0_TX_M_WCN	V2	PCIe 0 transmit data - for wireless module
AR34	PCIE0_TX_P_WCN	V4	PCIe 0 transmit data + for wireless module
AE33	PCIE0_RESET_N_WCN	BN9	PCIe 0 reset for wireless module
AC26	UFS_CLK	B26	UFS reference clock **(1.2V~1.8V)**
AB27	UFS_RESET#	D26	UFS reset, active low **(1.2V~1.8V)**
AC32	UFS_RX0_N	C25	UFS receive lane 0 -
AC31	UFS_RX0_P	B24	UFS receive lane 0 +
AB33	UFS_RX1_N	C23	UFS receive lane 1 -
AB32	UFS_RX1_P	B22	UFS receive lane 1 +
AC29	UFS_TX0_N	D24	UFS transmit lane 0 -
AC28	UFS_TX0_P	E25	UFS transmit lane 0 +
AB30	UFS_TX1_N	D22	UFS transmit lane 1 -
AB29	UFS_TX1_P	E23	UFS transmit lane 1 +

Pin	Signal	CPU Ball #	Description
C34	EDP0_AUX_M	AN45	eDP 0 auxiliary channel - (PU 100K)
C33	EDP0_AUX_P	AN43	eDP 0 auxiliary channel + (PD 100K)
D32	eDP_A_VDD_EN	113 (PM7350C)	eDP A VDD enable (PD 1M)
D31	eDP_A_BL_EN	74 (PM7350C)	eDP A backlight enable (PD 1M)
D33	eDP_A_BL_HPD	BH42	eDP A backlight hot-plug detection (PD 1M)
C31	eDP_A_BL_PWM	99 (PM7350C)	eDP A backlight PWM control
A31	EDP0_TX0_M	AM46	eDP 0 transmit lane 0 -
A30	EDP0_TX0_P	AM44	eDP 0 transmit lane 0 +
B32	EDP0_TX1_M	AL47	eDP 0 transmit lane 1 -
B31	EDP0_TX1_P	AL45	eDP 0 transmit lane 1 +
A34	EDP0_TX2_M	AK46	eDP 0 transmit lane 2 -
A33	EDP0_TX2_P	AK44	eDP 0 transmit lane 2 +
B35	EDP0_TX3_M	AJ45	eDP 0 transmit lane 3 -
B34	EDP0_TX3_P	AJ43	eDP 0 transmit lane 3 +
A20, C21, C19, C17	NC		No connection
A15, A17, A18, A19	NC		No connection
A21, B15, B16, B17	NC		No connection
B18, B19, B21, A16	NC		No connection

* Apart from those specified here, any pins not included in these sheets are not connected.

Ordering Information

Ordering No.	Memory	Storage	Connectivity	Description
VOSM6490	8GB LPDDR5	64GB eMMC	NA	MIPI DSI, eDP, MIPI CSI, SPI, PCIe, UART, USB, I^2C, GPIO
VT-SBC35-VOSM6490	8GB LPDDR5	64GB eMMC 64GB/128GB UFS	GbE, Wi-Fi, Bluetooth	VOSM6490 + Carrier board, MIPI DSI/HDMI/eDP, UART, MIPI CSI, USB, GPIO

Packing List	
VOSM6490 system-on-module	1

Company Profile

Since its establishment in 2002 by two Silicon Valley entrepreneurs, Vantron Technology has been at the forefront of the connected IoT devices and IoT platform solutions. Today, Vantron boasts a global customer base that includes many Fortune Global 500 companies. Its product lines cover edge intelligent hardware, IoT communication devices, industrial displays and BlueSphere cloud platforms.

With over 20 years of experience in R&D of embedded edge intelligent hardware, Vantron has provided users with diverse embedded solutions featuring ARM and X86 architectures. Its offerings range from Linux to Windows, from embedded to desktop level, and from gateway to server. In addition, it provides users with system trimming, driver transplantation and more to cater to the unique needs of its users.

VOSM6490 System-on-module V1.6 © 2026 Vantron Technology, Inc. All rights reserved. This document is subject to change without prior notice.