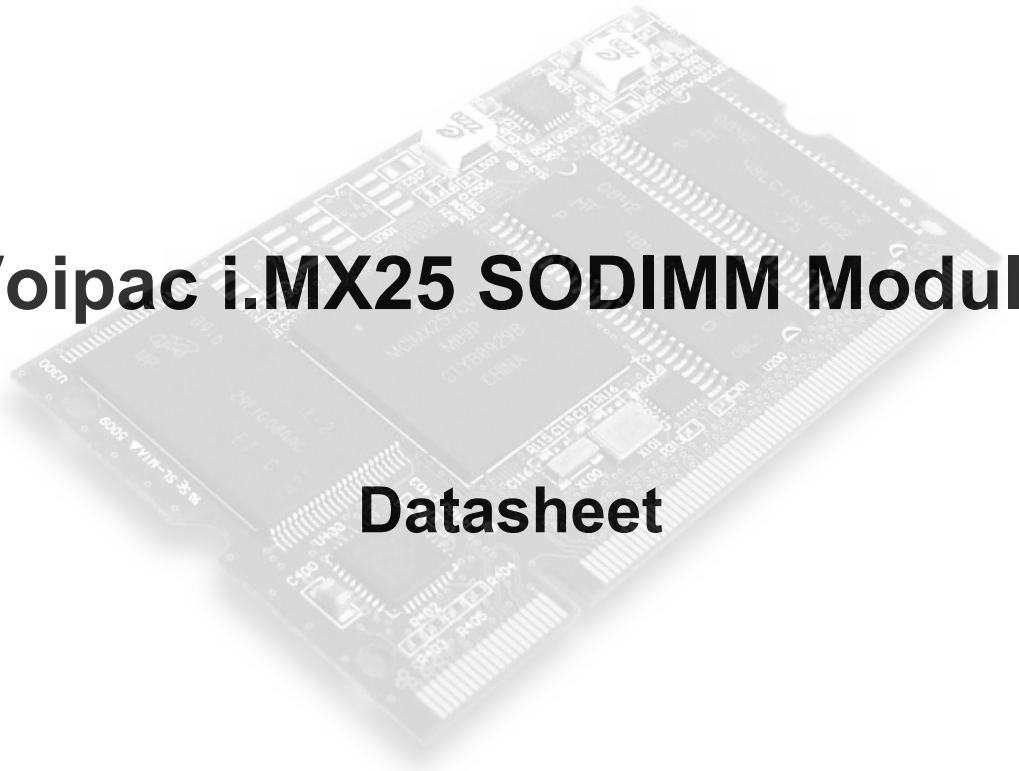




Voipac i.MX25 SODIMM Module

Datasheet

Date	Revision	Changes
15. July 2010	1.0	Initial Release
12. January 2011	1.1	Modified Operating System Table in Chapter 1.2 Added Power Consumption Table in Chapter 5.1 Modified Temperature Range Table in Chapter 5.5
15. February 2011	1.2	Modified Pin-out Description Table in Chapter 3.2
11. May 2011	1.3	Modified Electrical – DC Characteristics Table in Chapter 5.2

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1. Introduction

1.1. Hardware

The i.MX25 SODIMM Module is a small circuit board which belongs to the group of COMs (Computer On Module). Central component is the i.MX25 processor from Freescale that provides the module with enough computing power to cover majority of the industrial applications requirements. The module can be plugged into a standard 200pin SODIMM socket which allows base board components to be placed even beneath the module. This 1 mm thick 8-layer microcontroller board includes all of the technologically and development demanding parts, saving many man-months of the high-frequency PCB design, complex prototyping, debugging and OS porting, thus minimizing the time-to-market of the customers' own projects.

For the customers' safety, the module is compatible with the main competitor's solution, providing the necessary flexibility and a guarantee of the second source availability. Above the specification of the currently available i.MX25 based SODIMM solutions, Voipac's i.MX25 SODIMM module provides: higher maximum memory configuration, SD switch, I2C EEPROM, SPI FLASH and microSD socket soldered right on the module in order not to limit the customers' future memory requirements.

The i.MX25 SODIMM Module is available in 3 standard hardware configurations: BASIC / PROfesional / MAXimum. Upon request, any other possible configuration can be manufactured for no surcharge, minimum batch size is 10pcs. The operating temperature range of a standard unit is -20 / 70°C. Upon request, the module is available in -40 / 85°C operating temperature range for a surcharge, excluding the microSD socket with only -20 / 70°C maximum operating temperature range. The standard i.MX25 SODIMM Module is equipped by i.MX258 CPU, thus supporting all of the available CPU features.

1.2. Software

Various operating systems are available for the Voipac i.MX25 SODIMM module provided by Voipac and the third parties. In case of unsupported operating system, necessary documentation for all hardware peripherals is freely available.

Voipac fully supports Linux operating system with drivers for all basic interfaces. Custom additional drivers for specific applications can be developed upon request.

Operating system	Description
Linux	Linux 2.6 with drivers for most common interfaces
Android	Android Gingerbread 2.3 (UNDER DEVELOPMENT)
Windows CE	Windows CE 6.0 (UNDER DEVELOPMENT)

1.3. Features Summary

Feature	Description
CPU	i.MX25 (Freescale) up to 400 MHz, ARM9
SDRAM	Up to 128MB 32bit
NAND FLASH	Up to 128Gb
I2C EEPROM	Up to 1Mb
SPI FLASH	Up to 64Mb
STORAGE	MMC/SD/microSD Card on module
LCD	LCD controller supporting SVGA 800x600px
AUDIO/TOUCH	Digital Audio IN/OUT, 4-wire touch controller
VIDEO CAPTURE	Still-Picture camera interface
ETHERNET	LAN8700 10/100Mbps
USB	High-Speed USB 2.0 OTG, Full-Speed USB 2.0 HOST
OTHER I/O	I2C/SPI, PWM, UART, CAN, Configurable Serial Peripheral Interface

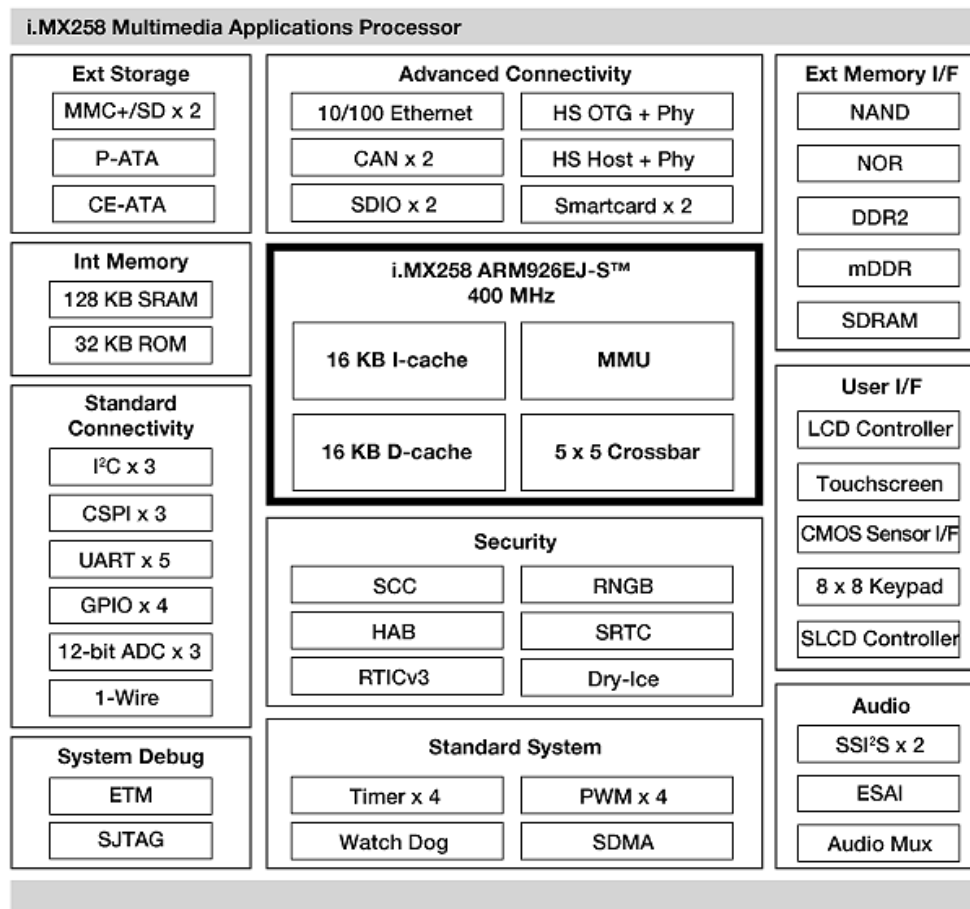
1.4. Reference Documents

For more detailed technical information about the i.MX25 SODIMM module components, please refer to the web resources and documents listed below.

Component	Description
i.MX25 (Freescale) Processor	Freescale_data_sheet_IMX25CEC.pdf
MICRON NAND Flash Memory	micron_partscatalog_nand_flash/mass_storage.html
MICRON SDRAM Memory	micron_sdram_256MSDRAM.pdf
SMSC LAN8700 Ethernet Controller	smcsc_LAN8700.pdf
TPS65053 POWER MGMT IC	ti_tps65053.pdf
I2C EEPROM	atmel AT24C512BN-SN-TCT
SPI FLASH	sst/products/SST25VF016B , sst/products/SST25VF032B

2. Functional Processor Description

2.1. Block Diagram



More information in interactive table on [Freescale's webpage](#)

Freescale's ARM926EJ-S™ based multimedia application processors target several application areas:

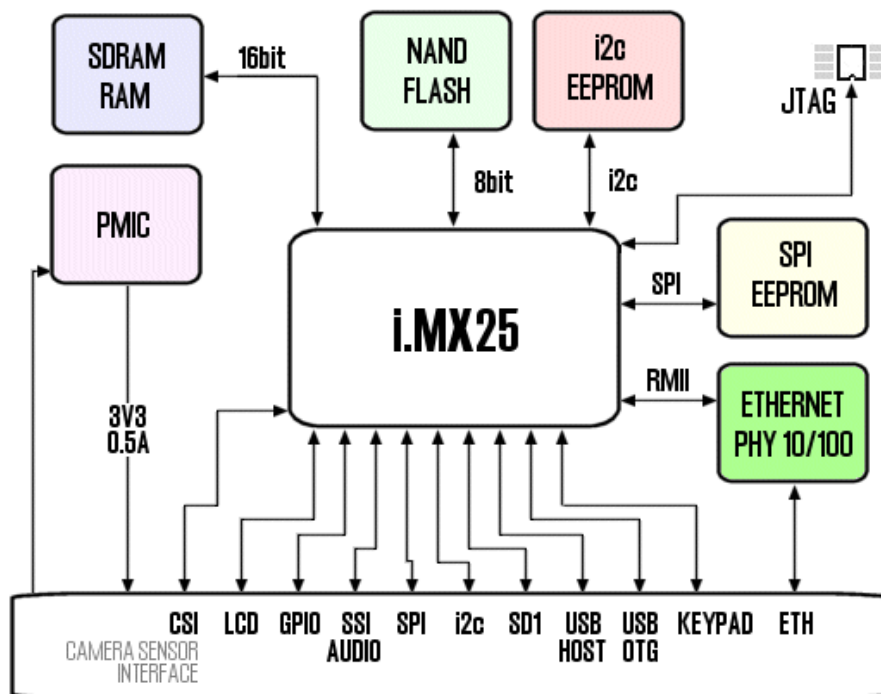
1. **i.MX251** Ideal for automotive audio connectivity.
2. **i.MX253** Ideal for industrial and general embedded applications, packed with multiple connectivity options and LCD controller.
3. **i.MX255** i.MX251 features, plus LCD controller, resistive touchscreen controller, two smartcard interfaces and camera sensor interface.
4. **i.MX257** i.MX253 features, plus resistive touch screen controller, camera sensor interface, two smartcard interfaces, two CAN interfaces and ESAI interface for audio applications.
5. **i.MX258** i.MX257 features, plus hardware-enabled security for secure system boot and tamper detection.

More information in interactive table on [Freescale's webpage](#)

3. SODIMM Signal Description

This chapter describes the signals of the Voipac i.MX25 SODIMM module. Some pins have dedicated functionality, but most are highly multiplexed, so that the same pin can have up to 6 different roles and the same functionality is sometimes available alternatively on different pins. Each of these multiplexed pins is additionally also usable as a General Purpose Input/Output pin (GPIO). Additionally each GPIO pin can be used as interrupt source.

3.1. SODIMM Module Block Diagram



3.2. IO Types Notation

Signal	Description
3V3	Digital Signal Voltage Level
ANALOG	Analog Signal
NVDD_DRYICE	
GND	Ground
NC	Not Connected
PWR	Power supply

3.3. Pin-out Description

Pin	Function	Pin Name	Type	Description
1	VIN		PWR	Module power supply input (3.6V-5.5V)
2	VIN		PWR	
3	VIN		PWR	
4	VIN		PWR	
5	VOUT		PWR	3.3V power supply output (up to 0.2A)
6	VOUT		PWR	
7	VOUT		PWR	
8	BOOT_MODE		3V3	Boot mode select H: External (direct) Boot / L: Internal Boot
9	VOUT		PWR	3.3V power supply output (up to 0.2A)
10	VOUT		PWR	
11	VOUT		PWR	
12	VOUT		PWR	
13	VBACKUP	VBACKUP	PWR	DRYICE backup power supply input (max. 1.55V)
14	POWER_ON	POWER_ON		Pull low to disable module power supply
15	#RESET_OUT	VSTBY_ACK	3V3	"Pulse" indication on finish of internal system reset, by visibility of "hreset_b" signal. After reset, this pin can be used for other purposes.
16	#POR		3V3	Power On Reset - active low input signal. Typically a push button reset. Pull low to force a reset. Leave unconnected or connect to 3V3 if unused. 63.5kΩ pull-up resistor.
17	RESET_IN_B	RESET_IN_B	3V3	Master Reset - external active low Schmitt trigger input signal. When this signal goes active, all modules (except the reset module, SDRAMC module, and the clock control module) are reset.
18	GND		GND	

Pin	Function	Pin Name	Type	Description
19	ETN_TXN		ANALOG	Transmit Data Negative: 100Base-TX or 10Base-T differential transmit output to magnetics.
20	#ETN_LINKLED		3V3	Active low LINK ON indication: Active indicates that the link is on.
21	ETN_TXP		ANALOG	Transmit Data Positive: 100Base-TX or 10Base-T differential transmit output to magnetics.
22	ETN_3V3		PWR	+3.3V analog power supply output to magnetics
23	ETN_RXN		ANALOG	Receive Data Negative: 100Base-TX or 10Base-T differential receive input from magnetics.
24	#ETN_ACTLED		3V3	Active low ACTIVITY indication: Active indicates that there is Carrier sense (CRS) from the active PMD.
25	ETN_RXP		ANALOG	Receive Data Positive: 100Base-TX or 10Base-T differential receive input from magnetics.
26	GND		GND	
27	USBH_VBUSEN	D9	3V3	Active high external 5V supply enable. This pin is used to enable the external VBUS power supply.
28	#USBH_OC	D8	3V3	Active low over-current indicator input connected to a GPIO. This signal can be used as an input only. 10kΩ pull-up resistor.
29	USBH_DM	USBPHY2_DM	DATA	D- pin of the USB cable
30			NC	Not Connected
31	USBH_DP	USBPHY2_DP	DATA	D+ pin of the USB cable
32	GND		GND	
33	USBOTG_ID	USBPHY1_UID	3V3	ID pin of the USB cable. For an A-Device ID is grounded. For a BDevice ID is floated.
34	USBOTG_VBUSEN	GPIO_A	3V3	Active high external 5V supply enable. This pin is used to enable the external VBUS power supply.
35	USBOTG_DM	USBPHY1_DP	DATA	D- pin of the USB cable
36	#USBOTG_OC	GPIO_B	3V3	Active low over-current indicator input connected to a GPIO. 10kΩ pull-up resistor.
37	USBOTG_DP	USBPHY1_DP	DATA	D+ pin of the USB cable
38	USBOTG_VBUS	USBPHY1_VBUS	ANALOG	VBUS pin of the USB cable. This pin is used for the VBUS comparator inputs.
39		GND	GND	
40	I2C_DATA	I2C1_DAT	3V3	I2C Data
41	I2C_CLK	I2C1_CLK	3V3	I2C Clock
42	PWM	PWM	3V3	PWM Output
43	OWDAT	RTCK	3V3	1-Wire bus. Requires an external pull-up resistor. The recommended resistor is specified by the generic 1-Wire device used in a given system.
44	CSPI_SS0	CSPI1_SS0	3V3	Slave Select (Selectable polarity) signal
45	CSPI_SS1	CSPI1_SS1	3V3	Slave Select (Selectable polarity) signal
46	CSPI_MOSI	CSPI1_MOSI	3V3	Master Out/Slave In signal
47	CSPI_MISO	CSPI1_MISO	3V3	Master In/Slave Out signal
48	CSPI_SCLK	CSPI1_SCLK	3V3	Serial Clock signal
49	CSPI_RDY	CSPI1_RDY	3V3	Serial Data Ready signal
50	GND		GND	

Pin	Function	Pin Name	Type	Description
51	SD1_CD	BCLK	3V3	SD Card Detect – connected to a GPIO
52	SD1_D[0]	SD1_DATA0	3V3	SD Data bidirectional signals—If the system designer does not want to make use of the internal pull-up, via the Pull-up enable register, a 50 K–69 K external pull up resistor must be added.
53	SD1_D[1]	SD1_DATA1	3V3	
54	SD1_D[2]	SD1_DATA2	3V3	
55	SD1_D[3]	SD1_DATA3	3V3	
56	SD1_CMD	SD1_CMD	3V3	SD Command bidirectional signal
57	SD1_CLK	SD1_CLK	3V3	SD Output Clock.
58	GND		GND	
59	UART1_TXD	UART1_TXD	3V3	Transmit Data output signal
60	UART1_RXD	UART1_RXD	3V3	Receive Data input signal
61	UART1_RTS	UART1_RTS	3V3	Request to Send input signal
62	UART1_CTS	UART1_CTS	3V3	Clear to Send output signal
63	UART2_TXD	UART2_TXD	3V3	Transmit Data output signal
64	UART2_RXD	UART2_RXD	3V3	Receive Data input signal
65	UART2_RTS	UART2_RTS	3V3	Request to Send input signal
66	UART2_CTS	UART2_CTS	3V3	Clear to Send output signal
67	UART3_TXD	UART3_TXD	3V3	Transmit Data output signal (physically UART5)
68	UART3_RXD	UART3_RXD	3V3	Receive Data input signal (physically UART5)
69	UART3_RTS	UART3_RTS	3V3	Request to Send input signal (physically UART5)
70	UART3_CTS	UART3_CTS	3V3	Clear to Send output signal (physically UART5)
71	GND		GND	
72	KP_COL[0]	KPP_COL0	3V3	Keypad Column selection signals.
73	KP_COL[1]	KPP_COL1	3V3	
74	KP_COL[2]	KPP_COL2	3V3	
75	KP_COL[3]	KPP_COL3	3V3	
76	TXCAN	KPP_COL4	3V3	Module specific function
77	KP_ROW[0]	KPP_ROW0	3V3	Keypad Row selection signals.
78	KP_ROW[1]	KPP_ROW1	3V3	
79	KP_ROW[2]	KPP_ROW2	3V3	
80	KP_ROW[3]	KPP_ROW3	3V3	
81	RXCAN	KPP_ROW4	3V3	Module specific function
82	GND		GND	
83	SSI1_INT	SSI1_INT	3V3	GPIO
84	SSI1_RXD	AUD4_RXD	3V3	Receive serial data
85	SSI1_TXD	AUD4_TXD	3V3	Transmit serial data
86	SSI1_CLK	AUD4_TXC	3V3	Serial clock
87	SSI1_FS	AUD4_TXFS	3V3	Frame Sync
88	GND		GND	
89	SSI2_INT	SSI2_INT	3V3	GPIO
90	SSI2_RXD	AUD7_RXD	3V3	Receive serial data

Pin	Function	Pin Name	Type	Description
91	SSI2_TXD	AUD7_TXD	3V3	Transmit serial data
92	SSI2_CLK	AUD7_TXC	3V3	Serial clock
93	SSI2_FS	AUD7_TXFS	3V3	Frame Sync
94	GND		GND	
95			NC	
96	SD2_D[0]	SD1_DATA0		SD Data bidirectional signals—If the system designer does not want to make use of the internal pull-up, via the Pull-up enable register, a 50 K–69 K external pull up resistor must be added.
97	SD2_D[1]	SD1_DATA1		
98	SD2_D[2]	SD1_DATA2		
99	SD2_D[3]	SD1_DATA3		
100	SD2_CMD	SD1_CMD		SD command bidirectional signal
101	SD2_CLK	SD2_CLK		SD Output Clock
102	GND		GND	
103	CSI_D0	CSI_D2	3V3	Sensor port data
104	CSI_D1	CSI_D3	3V3	Sensor port data
105	CSI_D2	CSI_D4	3V3	Sensor port data
106	CSI_D3	CSI_D5	3V3	Sensor port data
107	CSI_D4	CSI_D6	3V3	Sensor port data
108	CSI_D5	CSI_D7	3V3	Sensor port data
109	CSI_D6	CSI_D8	3V3	Sensor port data
110	CSI_D7	CSI_D9	3V3	Sensor port data
111	GND		GND	
112	CSI_HSYNC	CSI_HSYNC	3V3	Sensor port horizontal sync
113	CSI_VSYNC	CSI_VSYNC	3V3	Sensor port vertical sync
114	CSI_PIXCLK	CSI_PIXCLK	3V3	Sensor port data latch clock
115	CSI_MCLK	CSI_MCLK	3V3	Sensor port master clock
116	GND		GND	
117	LCD_D0/GPIO	CLKO	3V3	Clock out pin from CRM, clock source is controlable and can also be used for debug.
118	LCD_D1/CONTRAST	CONTRAST	3V3	
119	LCD_D2	DISP1_DAT0	3V3	LCD Data Bus
120	LCD_D3	DISP1_DAT1	3V3	LCD Data Bus
121	LCD_D4	DISP1_DAT2	3V3	LCD Data Bus
122	LCD_D5	DISP1_DAT3	3V3	LCD Data Bus
123	LCD_D6	DISP1_DAT4	3V3	LCD Data Bus
124	LCD_D7	DISP1_DAT5	3V3	LCD Data Bus
125	LCD_D8/GPIO	A13	3V3	
126	LCD_D9/GPIO	A15	3V3	
127	LCD_D10	DISP1_DAT6	3V3	LCD Data Bus
128	LCD_D11	DISP1_DAT7	3V3	LCD Data Bus
129	GND		GND	
130	LCD_D12	DISP1_DAT8	3V3	LCD Data Bus

Pin	Function	Pin Name	Type	Description
131	LCD_D13	DISP1_DAT9	3V3	LCD Data Bus
132	LCD_D14	DISP1_DAT10	3V3	LCD Data Bus
133	LCD_D15	DISP1_DAT11	3V3	LCD Data Bus
134	LCD_D16/GPIO	A16	3V3	
135	LCD_D17/GPIO	A14	3V3	
136	LCD_D18	DISP1_DAT12	3V3	LCD Data Bus
137	LCD_D19	DISP1_DAT13	3V3	LCD Data Bus
138	LCD_D20	DISP1_DAT14	3V3	LCD Data Bus
139	LCD_D21	DISP1_DAT15	3V3	LCD Data Bus
140	LCD_D22/GPIO	D15	3V3	
141	LCD_D23/GPIO	D14	3V3	
142	GND		GND	
143	HSYNC	HSYNC	3V3	Line Pulse or HSync
144	VSYNC	VSYNC	3V3	Frame Sync or Vsync—This signal also serves as the clock signal output for gate; driver (dedicated signal SPS for Sharp panel HRTFT)
145	OE_ACD	OE_ACD	3V3	Alternate Crystal Direction/Output Enable
146	LSCLK	LSCLK	3V3	Shift Clock
147	GND		GND	
148	GPIO	A10	3V3	
149	GPIO	A17	3V3	
150	GPIO	A18	3V3	
151	GPIO	A19	3V3	
152	GPIO	A20	3V3	
153	GPIO	A21	3V3	
154	GPIO	A22	3V3	
155	GPIO	A23	3V3	
156	GPIO	A24	3V3	
157	GPIO	A25	3V3	
158	GPIO	CS0	3V3	
159	GPIO	CS1	3V3	
160	GND		GND	
161	D[0]	NANDF_D[0]	3V3	
162	D[1]	NANDF_D[1]	3V3	
163	D[2]	NANDF_D[2]	3V3	
164	D[3]	NANDF_D[3]	3V3	
165	D[4]	NANDF_D[4]	3V3	
166	D[5]	NANDF_D[5]	3V3	
167	D[6]	NANDF_D[6]	3V3	
168	D[7]	NANDF_D[7]	3V3	
169	A[0]	A[0]	3V3	
170	A[1]	A[1]	3V3	

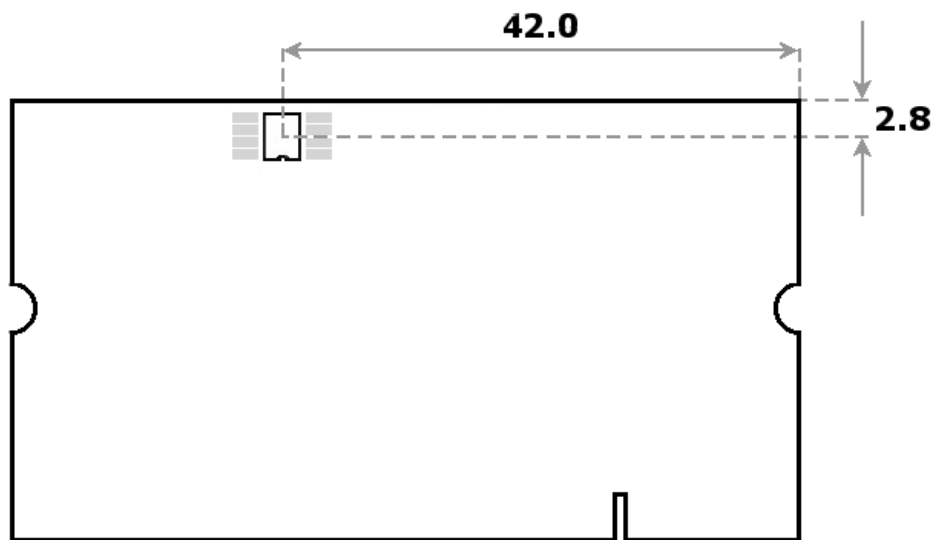
Pin	Function	Pin Name	Type	Description
171	GND		GND	
172	TAMPER_A	TAMPER_A	NVDD_DRYICE	DRYICE external tamper detect pins, active high. If either TAMPER_A or TAMPER_B asserted, then external tampering is detected. Should be tied to pull-down if no tamper detection is required on board.
173	TAMPER_B	TAMPER_B	NVDD_DRYICE	
174	MESH_C	MESH_C	NVDD_DRYICE	Wire-mesh tamper detect pins which can be routed at the PCB board to detect attempted tampering of a protected wire. MESH_C is active high and should be connected to an on-board pull-down if no tamper detection is required. MESH_D is active low and should be connected to an on-board pull-up if no tamper detection is required.
175	MESH_D	MESH_D	NVDD_DRYICE	
176	A[2]	A[2]	3V3	
177	A[3]	A[3]	3V3	
178	A[4]	A[4]	3V3	
179	A[5]	A[5]	3V3	
180	A[6]	A[6]	3V3	
181	A[7]	A[7]	3V3	
182	A[8]	A[8]	3V3	
183	GND		GND	
184	REF	REF	ANALOG	Touchscreen ADC External reference voltage (2.5 V). REF may be left floating if the internally generated 2.5 V supply is enabled. Use of an external reference is recommended.
185	XN	XN	ANALOG	Touchscreen ADC input channels
186	XP	XP	ANALOG	
187	YN	YN	ANALOG	
188	YP	YP	ANALOG	
189	WIPER	WIPER	ANALOG	
190	INAUX0	INAUX0	ANALOG	General purpose measurements channels
191	INAUX1	INAUX1	ANALOG	
192	INAUX2	INAUX2	ANALOG	
193	NVCC_DRYICE	NVCC_DRYICE	PWR	DRYICE power supply output. Source can be SoC supply or backup supply. This pin can be used to power external tamper detect components.
194	A [9]	A [9]	3V3	
195	A [11]	A [11]	3V3	
196	A [12]	A [12]	3V3	
197			NC	Not Connected
198			NC	Not Connected
199			NC	Not Connected
200	GND		GND	

4. Voipac i.MX25 SODIMM module Connectors

4.1. Physical Locations

Along with the main 200pin SODIMM connector the Voipac i.MX25 SODIMM module is equipped with pads for board-to-board pitch compression JTAG connector. The position is shown in the figure below.

Dimensions (in millimeters)



4.2. JTAG

Connector: Molex 47041-0001 www.molex.com

Pin#	Pin Name	Type	Description
1	+3V3	PWR	JTAG interface I/O voltage detect
2	GND	PWR	Ground
3	TMS	IN	JTAG mode select
4	nTRST	IN	JTAG reset
5	TCK	IN	JTAG clock
6	TDO	OUT	JTAG Data output
7	TDI	IN	JTAG Data input
8	nSRST	OUT	System reset

5. Technical Specifications

5.1. Electrical - Power Consumption

Table Part 1

Parameter	VIN	VIO	3V3	
	Pin	Pout	Pout	Pmod
State	[mW]	[mW]	[mW]	[mW]
Barebox	1777.42	-397.2	-108.9	1271.32
Linux	1713.59	-3.31	-630.3	1079.98
Linux (backlight off)	1453.36	0	-521.4	931.96
Memtest	1944.36	0	-521.4	1422.96

Table Part 2

Test Point	TP100	TP100-101		TP103	TP102-103		TP105	TP104-105	
	U	U	I	U	U	I	U	U	I
State	[V]	[mV]	[mA]	[V]	[mV]	[mA]	[V]	[mV]	[mA]
Barebox	4.91	36.2	362	3.31	-12	-120	3.3	-3.3	-33
Linux	4.91	34.9	349	3.31	-0.1	-1	3.3	-19.1	-191
Linux (backlight off)	4.91	29.6	296	3.31	0	0	3.3	-15.8	-158
Memtest	4.91	39.6	396	3.31	0	0	3.3	-15.8	-158

5.2. Electrical – DC Characteristics

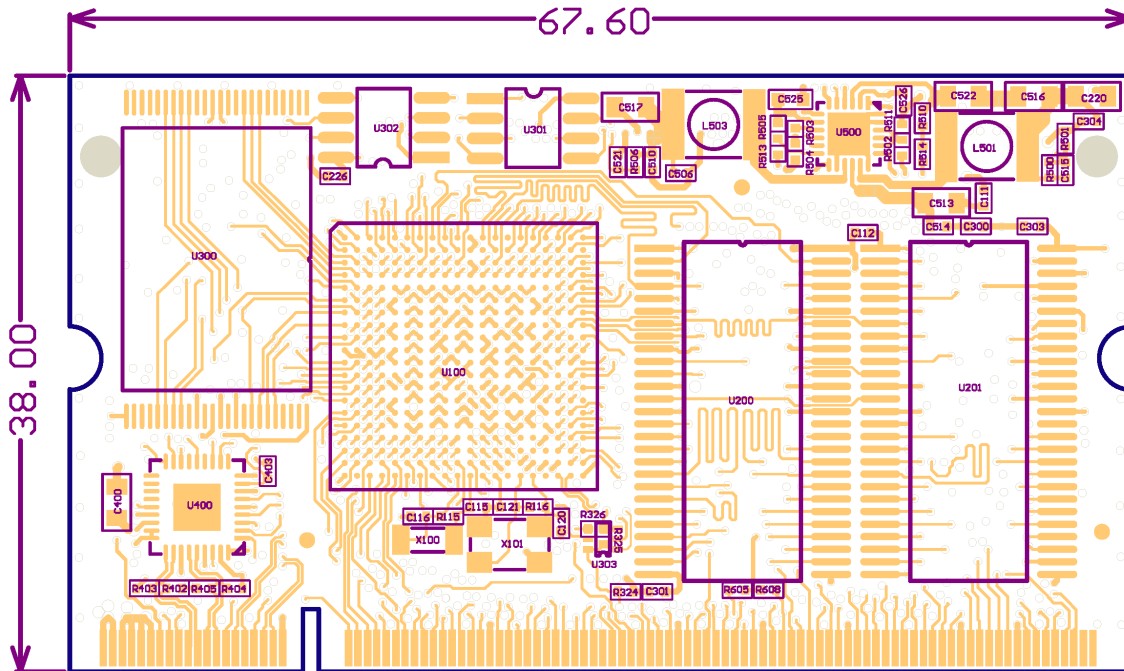
Symbol Description	Min	Typ	Max	Unit
VCC Power supply voltage	3.6	5.0	5.5	V
IDD_400 Operating current at 400MHz (at 5V)	140	180	250	mA
VIH Digital input high voltage	2.31	-	3.3	V
VIL Digital input low voltage	-0.3	-	0.99	V

5.3. Layer Structure

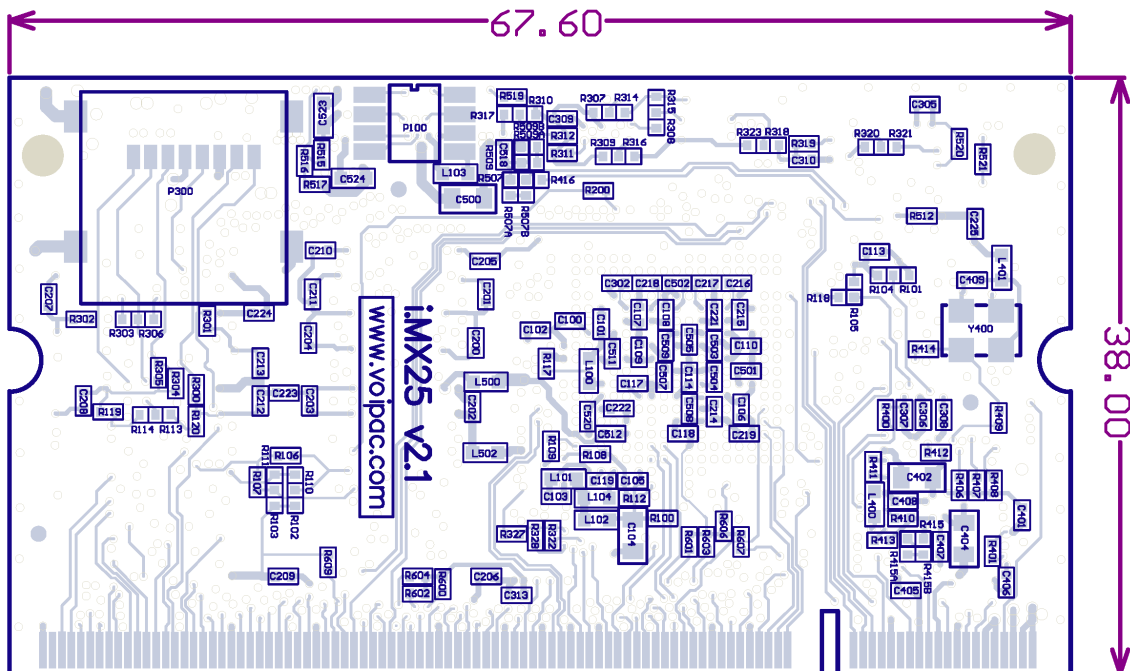
Layer		Base Material	CU	Prepreg Type	Thickness (um)
Top	Cu Hoz	Cu Foil	18um		18
	Prepreg, 0.11mm	Prepreg		1 x 2116	110
2	Cu 1oz	Cu Foil	35um		35
	FR-4, 0.1mm	FR-4			100
3	Cu Hoz	Cu Foil	35um		35
	Prepreg, 0.11mm	Prepreg		1 x 2116	110
4	Cu 1oz	CU Foil	35um		35
	FR-4, 0.1mm	FR-4			100
5	Cu 1oz	Cu Foil	35um		35
	Prepreg, 0.11mm	Prepreg		1 x 2116	110
6	Cu 1oz	CU Foil	35um		35
	FR-4, 0.1mm	FR-4			100
7	Cu 1oz	Cu Foil	35um		35
	Prepreg, 0.11mm	Prepreg		1 x 2116	110
Bottom	Cu Hoz	Cu Foil	18um		18
					986
Final Board Thickness: 1.0mm					

5.4. Mechanical

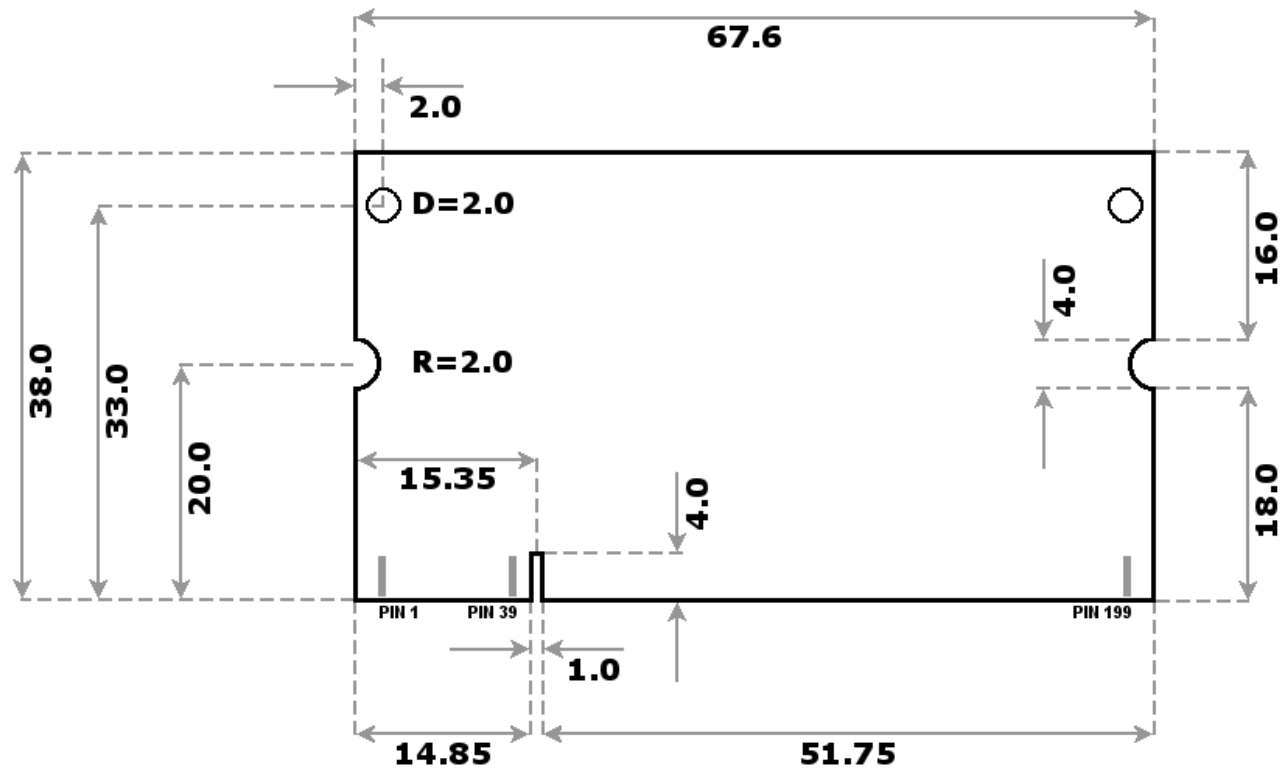
Top Layer (in millimeters)



Bottom Layer (in millimeters)



Dimensions (in millimeters)



5.5. Socket for the Voipac i.MX25 SODIMM module

The Voipac i.MX25 SODIMM module fits into a regular 2.5V DDR1 SODIMM memory socket. More details are available in [Manufacturer's Datasheet](#) or [3D View](#).

5.6. Temperature Range

Symbol	Description	Min	Max	Unit	Standard Unit Range
T_AMB	Operating temperature range - COMMERCIAL	0	70	°C	
T_AMB	Operating temperature range - EXTENDED	-20	70	°C	X
T_AMB	Operating temperature range - INDUSTRIAL*	-40	85	°C	

* Excluding microSD socket, available upon request

5.7. RoHS and WEEE Compliance

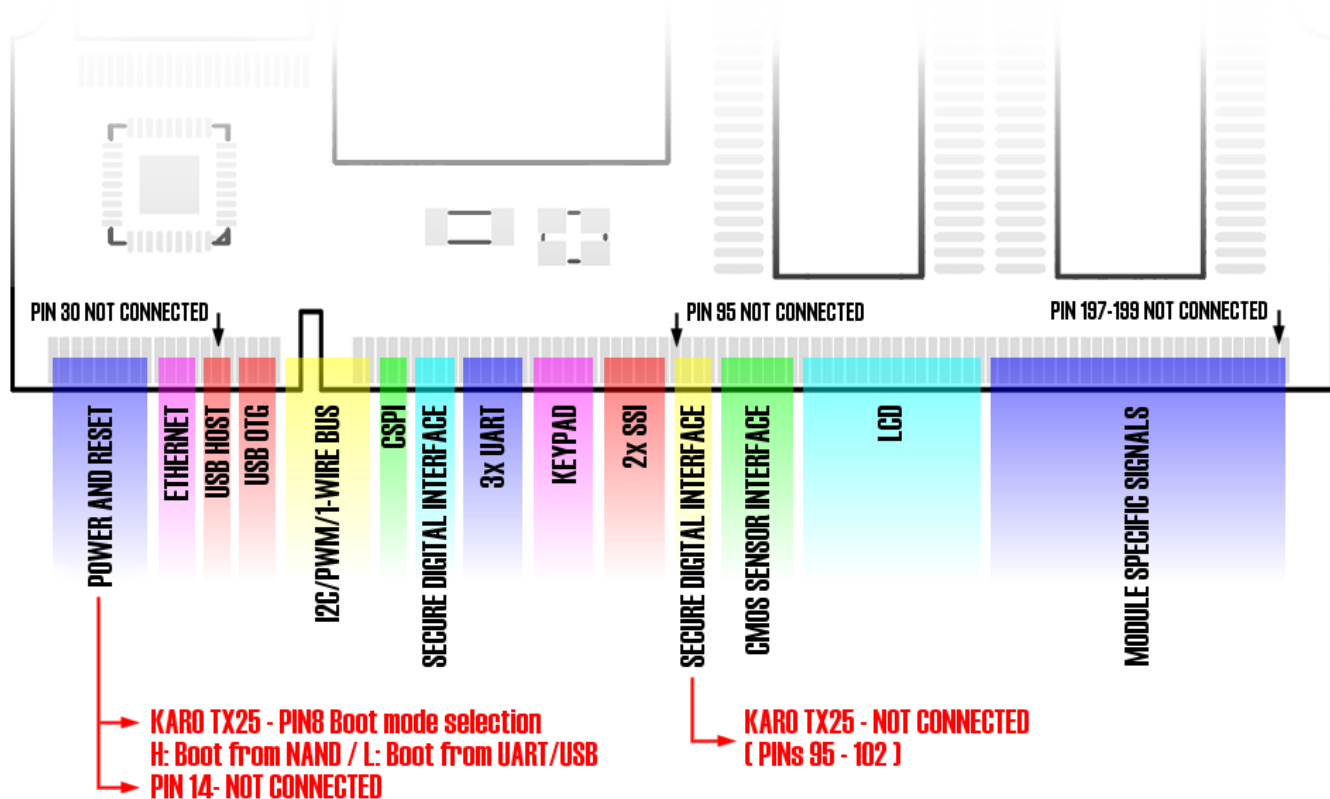
All of the products designed and manufactured by Voipac Technologies are classified as Electrical and Electronic Equipment (EEE) under the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment 2002/95/EC (RoHS). To comply with the RoHS directive, the restricted use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr 6+), Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ethers (PBDE) must be ensured. Voipac Technologies guarantees that products ordered after July 1, 2006 are assembled in full compliance with the RoHS directive from the European Parliament and Counsel. The company procedures also complies with the Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE) .

6. Compatibility

Voipac i.MX25 SODIMM module can be used as a replacement for KARO Electronics TX25 Module. This chapter points out the differences for a smooth transition.

6.1. KARO Electronics TX25 Module

Voipac i.MX25 SODIMM Module and TX25 from KaRo share the same pin mapping of all SODIMM pins, besides the General Purpose IOs and Module specific signals that may differ. For more details, see the picture below.



7. Support

All the relevant communication should be executed via e-mails preferably. Response time is up to 48 hours, except state holidays and weekends. Voipac Technologies working hours are: 8:00 - 17:00, Monday – Friday.

To claim warranty and RMA number assignment, please fill in this [protocol/problem description form](#) and send it to: reclamations@voipac.com.

Board warranty without the protocol/problem description will not be processed.

For more information, see our [General Terms and Conditions](#).

Besides the free-of-charge support, we provide support for your new designs when it comes to the special drivers for the peripherals not included in the Voipac development kits, design of your own base boards, prototyping, or even new products development, please contact: support@voipac.com for more info.

By [registering on Voipac's Internet Customer Details site](#), you will be granted to access the [Voipac Ticketing System](#), where you can post support request tickets and receive e-mail notifications upon any change of your ticket's status.

8. Distributors

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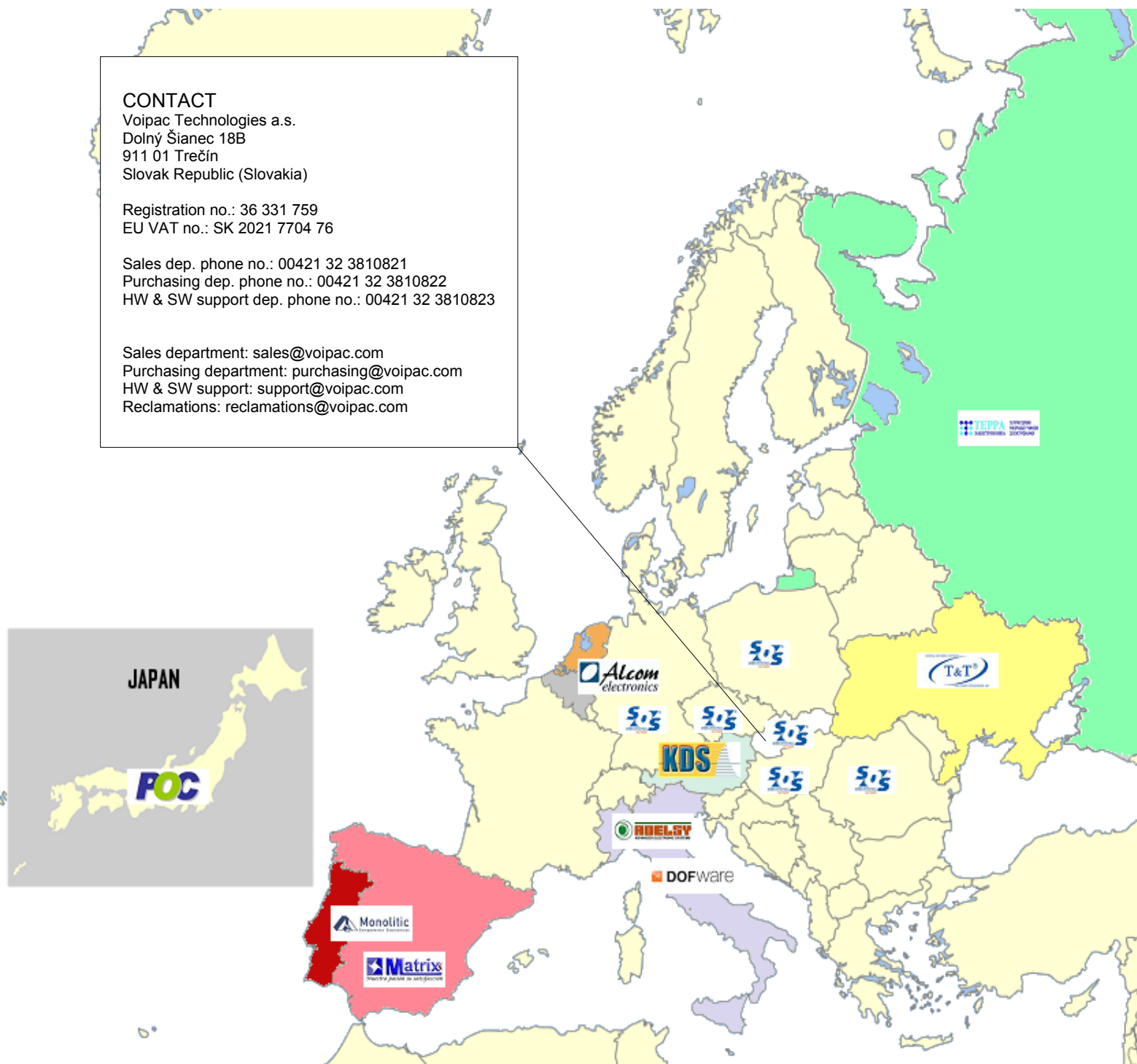
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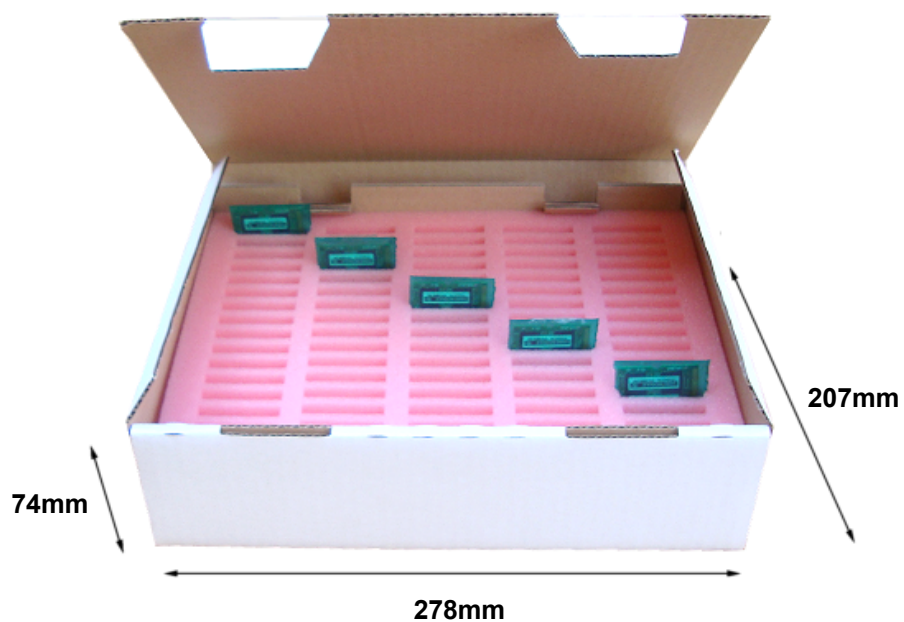
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9. Ordering Information



The standard box includes 75pcs of modules, each of them sealed in ESD plastic bag.

Warranty:

Voipac Technologies a.s. Does Not Bear Responsibility for the Following:

- Failure of a product resulting from misuse, accident, modification, unsuitable operating environment, or improper maintenance by user
- Unless otherwise agreed in written, a product does not include technical support and the customer may be able to purchase technical support under separate agreement
- Any technical or other support provided under warranty by Voipac Technologies a.s. such as assistance, set-up and installation is provided WITHOUT WARRANTY OF ANY KIND.

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