

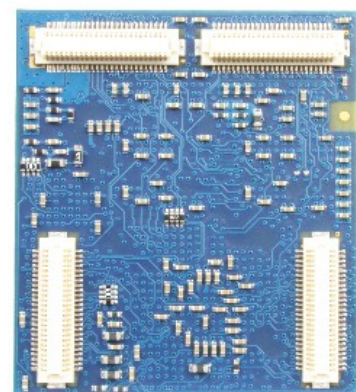
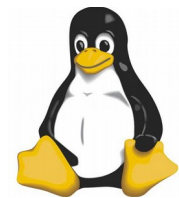
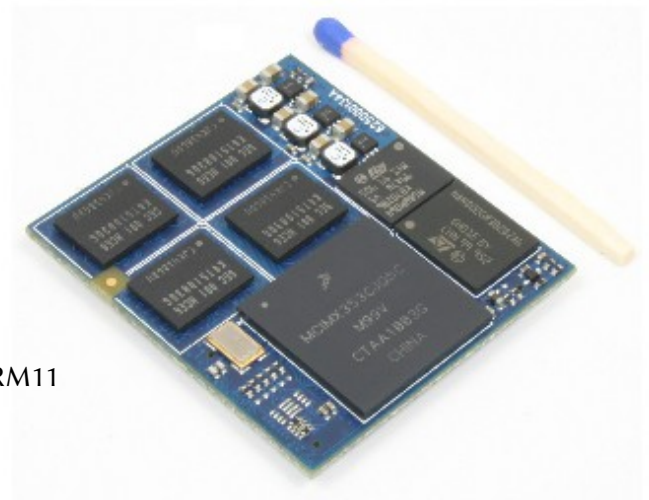
ICnova i.MX353 OEM Module

Cost-efficient, high performance, reliable

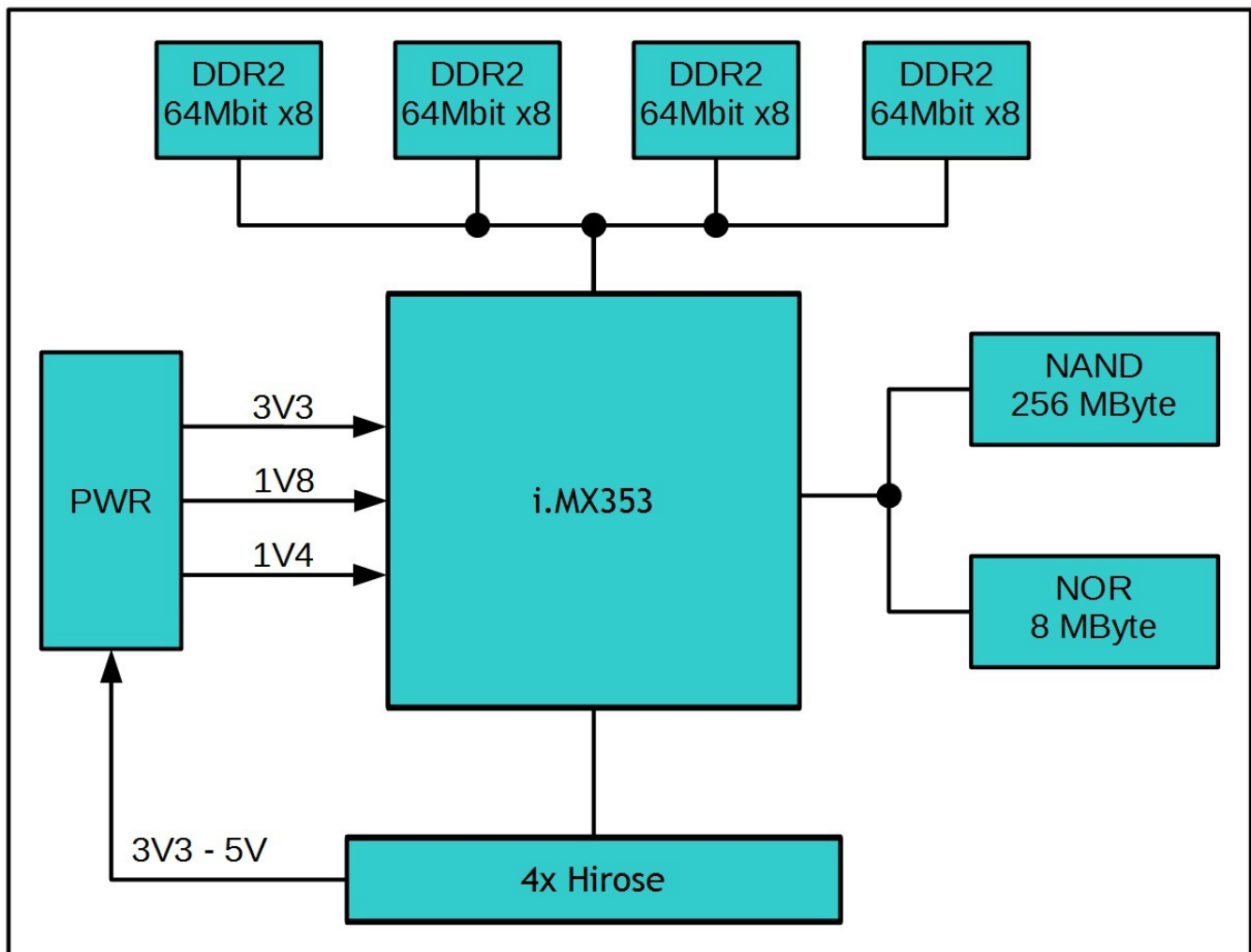
- Guaranteed availability >5 years
- Easy design-in at low risk
- Cost saving by short development cycles
- Development board and starter kit available

Features

- Freescale i.MX353 processor with 533MHz and ARM11 architecture
- On-Board memory:
 - 256 MByte DDR2 RAM
 - 8 MByte NOR Flash
 - 256 MByte NAND
- Available interfaces:
 - 1x LCD max. 1024x1024 pixel
 - 1x Image Sensor Interface (ISI)
 - 1x 10/100MBit Ethernet MAC Controller (MII)
 - 1x USB 2.0 Host with integrated full speed PHY
 - 1x USB 2.0 OTG (480 MBit)
 - 3x UART
 - 2x SPI
 - 3x I²C
 - 2x CAN
 - 1x JTAG Interface
 - 2x SDIO/MMC
 - 2x Synchronous Serial Interface (SSI)
 - 1x AC'97 Sound CODEC Interface
- Access to all available GPIOs
- Only one 3.3V to 5V power supply required
For proper operation the Vin rise time to 3,3V should not exceed 100ms.
For a reliable boot procedure POR_B needs to be held low until all supply voltages are stable.
- Generated On-Board:
 - 3.3V (IO)- 1.8V (DDR2)
 - 1.4V(Core)
 - Power consumption max. 1W
- Dimensions:
 - 35x 40x 6.3mm, 3.0mm distance board – board
 - Default temperature range: -20°C to +70°C
 - Extended temperature range: -40°C to +85°C



Block diagram



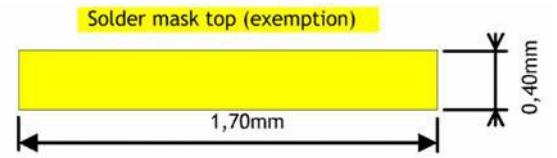
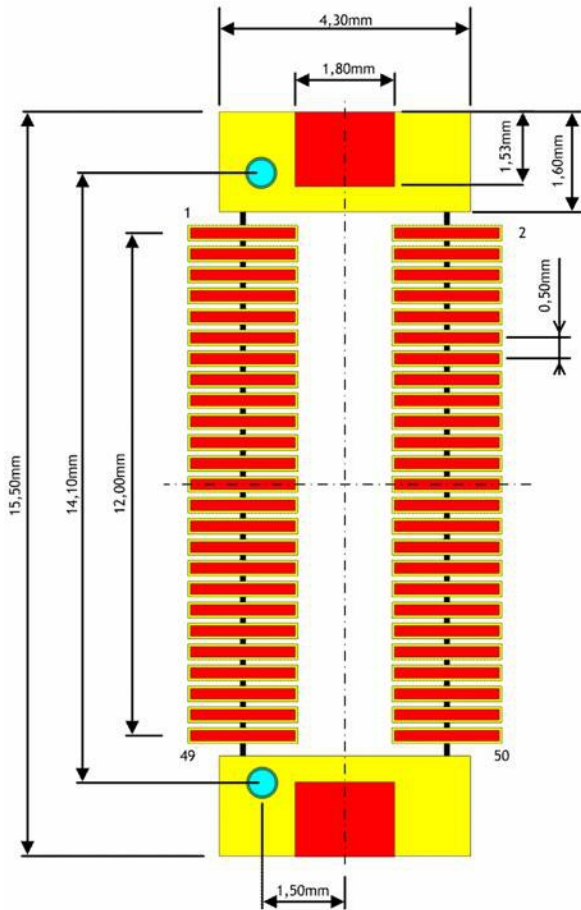
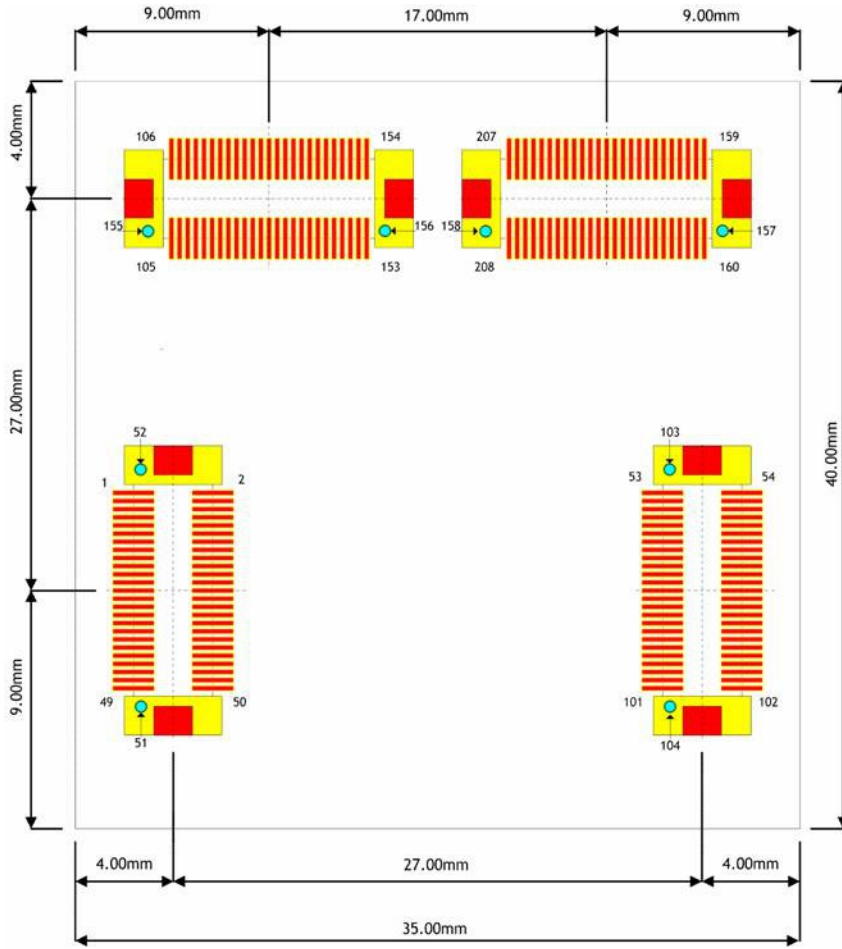
The ICnova iMX353 OEM Module unifies the following features:

- High processor speed at low power consumption
- High bandwidth 256MByte DDR2 RAM on a dedicated memory bus (EBI)
- Large capacity Flash (8MByte NOR + 256MByte NAND) on a dedicated memory bus
- Very compact dimensions of only 35mm x 40mm

Achieving high data rate communication using 100MBit Ethernet or 480MBit USB2.0 is easily possible as well as controlling TFT or LCD displays or accessing periphery via SPI, I2C, UART and many others.

Nearly all signals of the i.MX353 are available at the connectors on the bottom side of the module. The memory interfaces are not provided in order to assure signal integrity. A detailed description of the pins can be found on the following pages.

Recommended footprint for ICnova module use 4x Hirose DF12(3.0)-50DP-0.5V

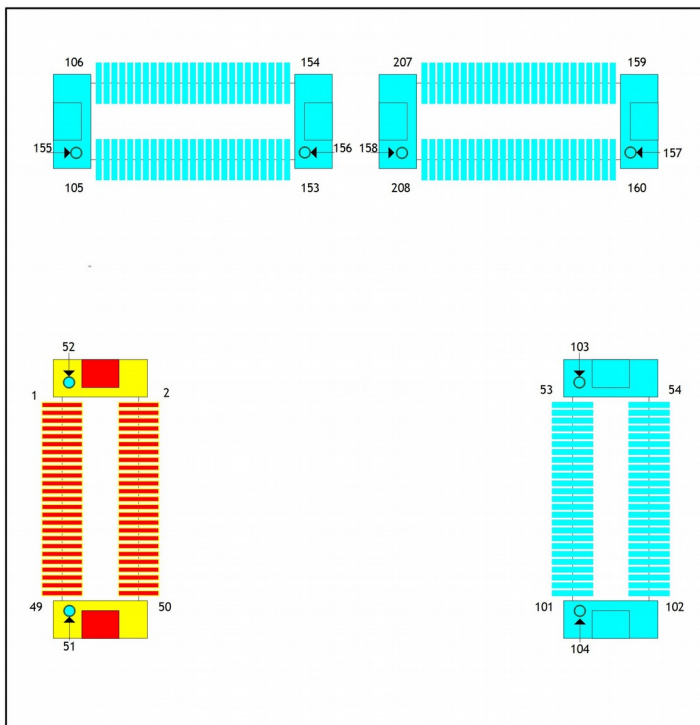


Drill size non platet hole 0,65mm

Solder mask bottom 0,75mm

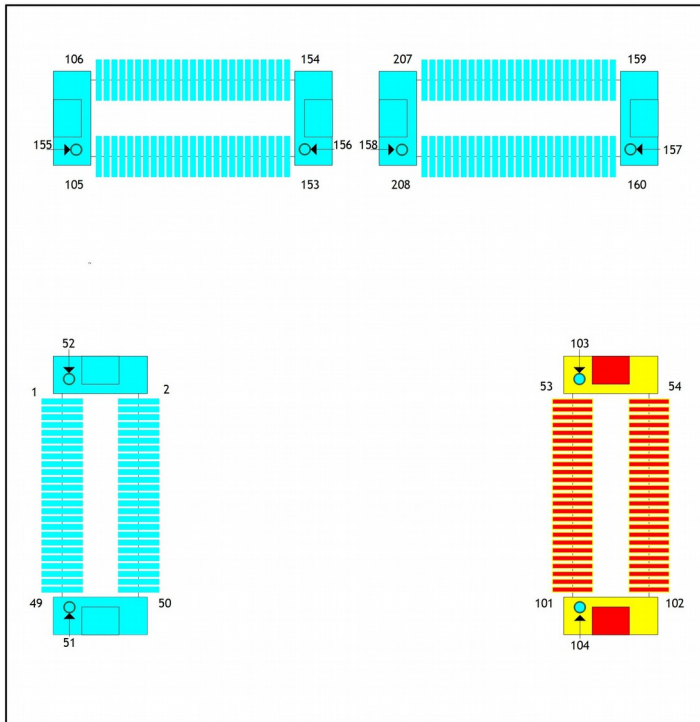
solder mask clearance is required, solder resist must not flow into the hole and reduce hole size

Pinout



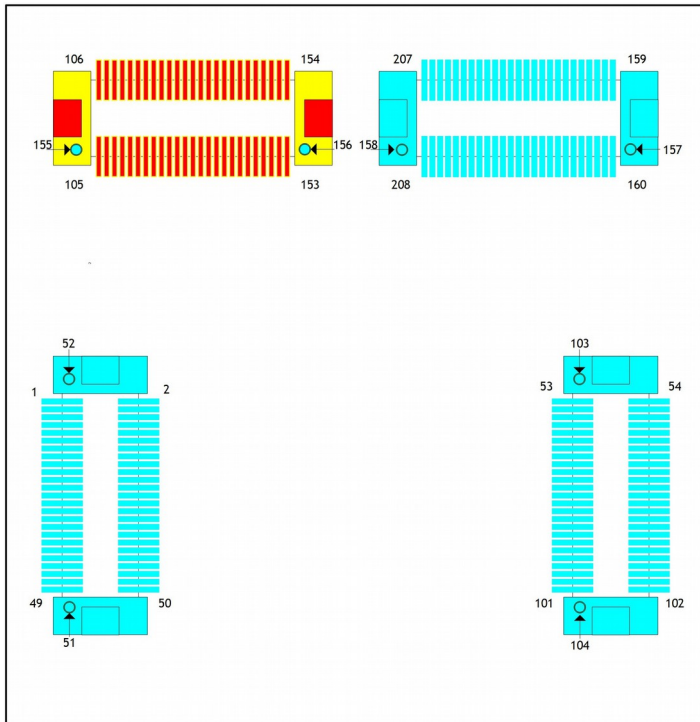
PIN Hirose connector	iMX BALL	ICnova iMX353 OEM	
1	GND		
2	P5	FEC_TDATA0	P3.11
3	W7	USBOTG_PWR/USBPHY_PWR	P3.14
4	M4	FEC_TDATA1	P3.19
5	U7	USBOTG_PWR/ISBPHY_PWR	P3.15
6	N5	FEC_CRCS	P3.17
7	GND		
8	K3	SCKR	P1.4
9	GND		
10	P3	FEC_COL	P3.9
11	Y16	CSI_D15	P1.27
12	J2	TX3_RX2	P1.12
13	U14	CSI_D14	P1.26
14	J3	TX5_RX0	P1.10
15	V15	CSI_D13	P1.25
16	N4	FEC_TX_ERR	P3.15
17	GND		
18	M5	FEC_TDATA2	P3.11
19	W7	USBOTG_PWR/USBPHY_PWR	P3.14
20	L6	FEC_TDATA3	P3.23
21	U7	USBOTG_OC	P3.15
22	T1	FEC_TX_EN	P3.17
23	W7	USBOTG_PWR/USBPHY_PWR	P3.14
24	P4	FEC_TX_CLK	P3.6
25	U7	USBOTG_OC	P3.15
26	P2	FEC_RDATA0	P3.10
27	GND		
28	N2	FEC_RDATA1	P3.18
29	Y18	USBPHY2_DP	
30	M3	FEC_RDATA2	P3.20
31	Y17	USBPHY2_DM	
32	N1	FEC_RDATA3	P3.22
33	GND		
34	N3	FEC_RX_ERR	P3.16
35	Y18	USBPHY2_DP	
36	R2	FEC_RX_CLK	P3.7
37	Y17	USBPHY2_DM	
38	T2	FEC_RX_DV	P3.8
39	GND		
40	P1	FEC_MDIO	P3.14
41	Y18	USBPHY2_DP	
42	R1	FEC_MDC	P3.13
43	Y17	USBPHY2_DM	
44	GND		
45	GND		
46	GND		
47	Y11	PWM0	P1.1
48	P18	USBPHY1_VBUS	
49	GND		
50	N18	USBPHY1_UID	

Pinout



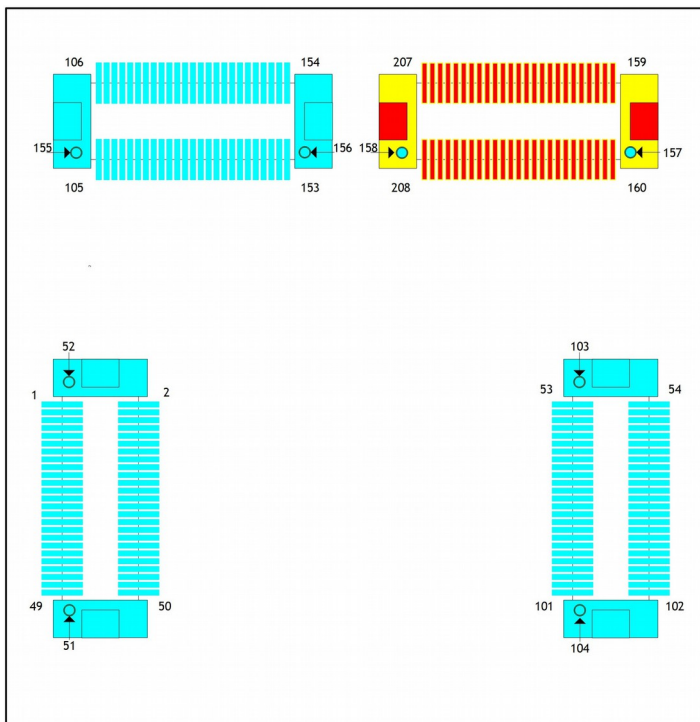
PIN Hirose connector	iMX BALL	ICnova iMX353 OEM	
53	L2	STXFS4	P2.31
54	GND		
55	M2	STXD4	P2.28
56	N19	USBPHY1_DM	
57	L4	SCK4	P2.30
58	P19	USBPHY1_DP	
59	L1	SRXD4	P2.29
60	GND		
61	W16	CSI_D12	P2.24
62	GND		
63	W15	CSI_MCLK	P2.28
64	GND		
65	GND		
66	GND		
67	GND		
68	P15	TDI	
69	T15	CSI_D11	P1.23
70	T16	TRSTB	
71	V16	CSI_D10	P1.22
72	NC		
73	W17	CSI_D9	P1.21
74	U10	RESET_IN_B	
75	U15	CSI_D8	P1-20
76	R16	TMS	
77	Y15	CSI_PIXCLK	P1.31
78	R15	TDO	
79	T14	CSI_VSYNC	P1.29
80	R17	TCK	
81	V14	CSI_HSYNC	P1.30
82	GND		
83	U12	SD2_DATA3	P2.5
84	GND		
85	Y14	SD2_DATA2	P2.4
86	GND		
87	T13	SD2_DATA1	P2.3
88	K4	SRXD5	
89	V13	SD2_DATA0	P2.2
90	K1	STXD5	
91	W14	SD2_CLK	P2.1
92	J6	STXFS5	P1.3
93	U13	SD2_CMD	P2.0
94	GND		
95	J1	FST	P1.8
96	L5	SCK5	P1.2
97	J4	SCKT	P1.7
98	J5	HCKT	P1.9
99	GND		
100	K2	HCKR	P1.6
101	GND		
102	GND		

Pinout



PIN Hirose connector	iMX BALL	ICnova iMX353 OEM	
105	L19	LD23	P3.29
106	GND		
107	K15	LD22	P3.28
108	K14	LD16	P2.16
109	K17	LD21	P3.27
110	J20	LD15	P2.15
111	K16	LD20	P3.26
112	J17	LD14	P2.14
113	GND		
114	J19	LD13	P2.13
115	K20	LD19	P3.25
116	J16	LD12	P2.12
117	K18	LD18	P3.24
118	J18	LD11	P2.11
119	K19	LD17	P2.17
120	H20	LD10	P2.10
121	GND		
122	H19	LD9	P2.9
123	GND		
124	H17	LD8	P2.8
125	M1	I2C2_DAT	P2.27
126	G20	LD7	P2.7
127	L3	I2C2_CLK	P2.26
128	H18	LD6	P2.6
129	GND		
130	H16	LD5	P2.5
131	V10	CLKO	P1.8
132	G19	LD4	P2.4
133	G4	TX0	P1.15
134	G16	LD3	P2.3
135	H5	TX2_RX3	P1.13
136	G17	LD2	P2.2
137	GND		
138	G18	LD1	P2.1
139	T6	ATA_RESET_B	P2.11
140	F20	LD0	P2.0
141	V6	ATA_DMACK	P2.10
142	M18	D3_SPL	P1.5
143	W6	ATA_DIOW	P2.9
144	M17	D3_REV	P1.3
145	GND		
146	L20	D3_DRDY	P1.0
147	Y6	ATA_DIOR	P2.8
148	M19	D3_VSYNC	P1.2
149	Y4	ATA_DATA4	P2.17
150	L15	D3_FPSHIFT	P3.31
151	U5	ATA_DATA3	P2.16
152	L18	D3_HSYNC	P3.30
153	GND		
154	L16	CONTRAST	P1.1

Pinout



PIN Hirose connector	iMX BALL	ICnova iMX353 OEM	
159		PWR_EN	
160	VCC	3.3 V – 5 V	
161	VCC	3.3 V – 5 V	
162	VCC	3.3 V – 5 V	
163	VCC	3.3 V – 5 V	
164	VCC	3.3 V – 5 V	
165	VCC	3.3 V – 5 V	
166	VCC	3.3 V – 5 V	
167	GND		
168	GND		
169	GND		
170	GND		
171	GND		
172	GND		
173	GND		
174	GND		
175	W11	POR_B	
176	GND		
177	U10	RESET_IN_B	
178	V12	CAPTURE	P1.4
179	T12	COMPARE	P1.5
180	H3	RXD2	P3.10
181	V3	ATA_DATA10	P2.23
182	H2	TXD2	P3.11
183	GND		
184	G5	CTS2	P3.13
185	Y2	ATA_DATA11	P2.24
186	G1	RTS2	P3.12
187	U4	ATA_DATA8	P2.21
188	GND		
189	W3	ATA_DATA9	P2.22
190	V4	ATA_DATA6	P2.19
191	GND		
192	Y3	ATA_DATA7	P2.20
193	U2	RXD1	P1.16
194	N17	I2C1_DAT	P2.25
195	R6	TXD1	P3.7
196	M20	I2C1_CLK	P2.24
197	V9	CSPI1_MISO	P1.17
198	V18	SD1_CLK	P1.7
199	W9	CSPI1_MOSI	P1.16
200	Y19	SD1_CMD	P1.6
201	W8	CSPI1_SCLK	P3.4
202	R14	SD1_DATA0	P1.8
203	Y8	CSPI1_SS0	P1.18
204	U16	SD1_DATA1	P1.9
205	U8	CSPI1_SS1	P1.19
206	W18	SD1_DATA2	P1.10
207	H1	TX1	P1.14
208	V17	SD1_DATA3	P1.11

Ordering Information

Part	Ordering Code	MOQ	Package
ICnova i.MX353 OEM	901.200	1	ESD-bag, air cushion

Evaluation boards are available for the ICnova i.MX353 OEM module.

We also offer:

- Hardware Design of base boards optimized for your application
- Prototype and mass production using our in-house production lines
- Adaptation / assembly options of our standard products
- Linux driver development and adaptation



Contact

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Change history

Version	Date	Changes	Editor
A	2012/06/25	First version	Träger
	2017/02/06	Minor Update	Grünig