Rugged HMI
iW-G39RH Series HMI
Datasheet



iWave
Embedding Intelligence

Revision History

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Email : support.hmi@iwavesystems.com
Website : www.iwavesystems.com
Address : iWave Systems Technologies Pvt. Ltd.
7/B, 29th Main, BTM Layout 2nd Stage,
Bangalore, Karnataka,
India – 560076

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1 Introduction

1.1 Purpose

The document is a datasheet of the Rainbow series Robust HMI solution based on i.MX8M Mini application processor. This solution is fully supported by iWave Systems Technologies Pvt Ltd. This datasheet provides information on overall hardware specification, software specification, mechanical dimension and subjected pre-compliance test cases.

1.2 Overview

HMI is based on iWave Systems Technologies Pvt Ltd i.MX8M Mini SODIMM SOM. The HMI support i.MX8M Mini ARM™ Cortex Core-A53 based CPU and ARM Cortex-M4 core.

HMI support 7” and 10.1” display solution with PCAP touch interface.

HMI BSP provided will be a collection of Tools, Binary, Source code and support files, these deliverables can be used to create a Linux Kernel Image and Android/Linux Root file system for our HMI solution.

2 Technical Details

This section provides technical details of the hardware, software and mechanical aspect of HMI.

2.1 Block Diagram

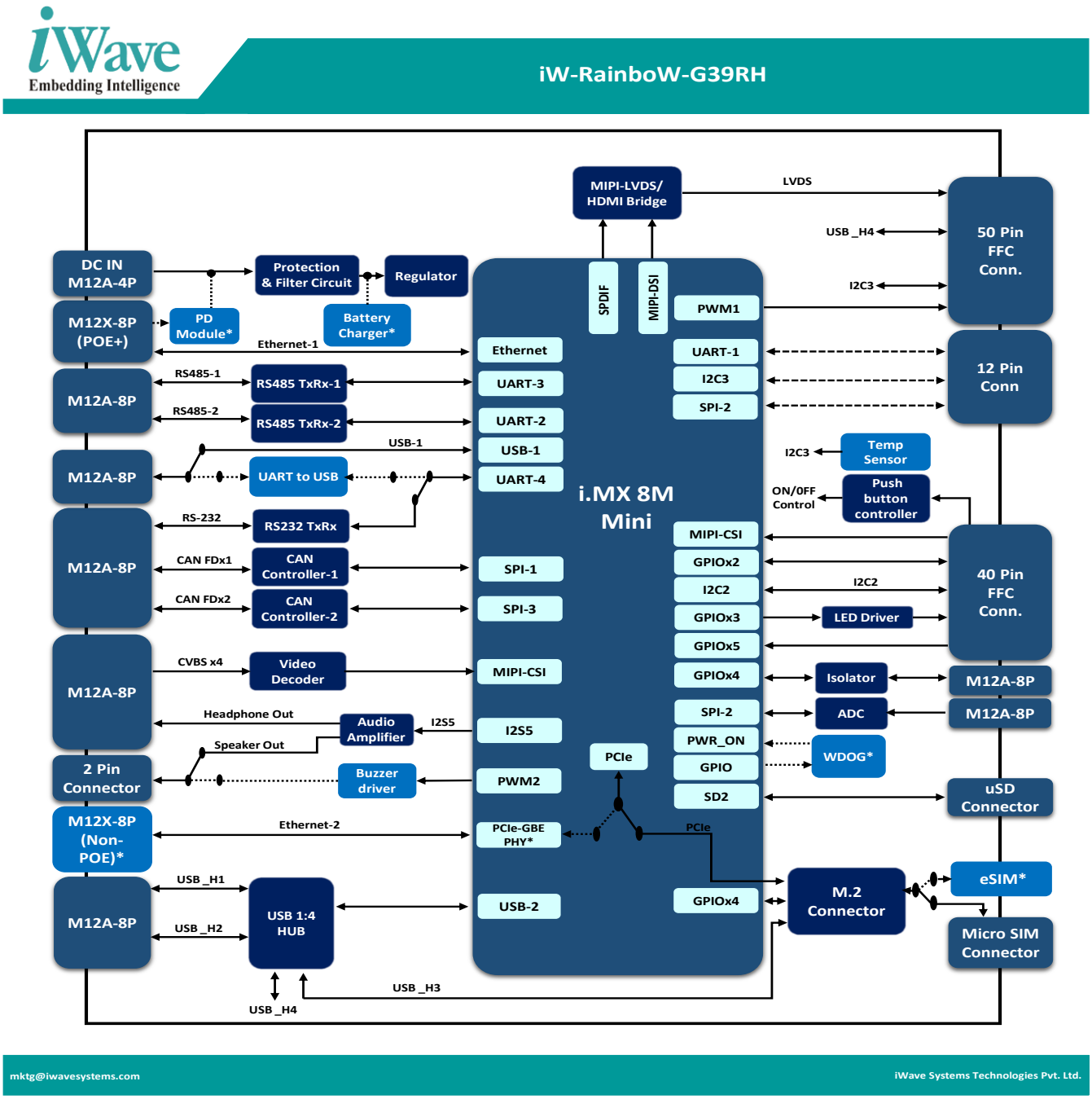


Figure 1 : Block Diagram

Note:

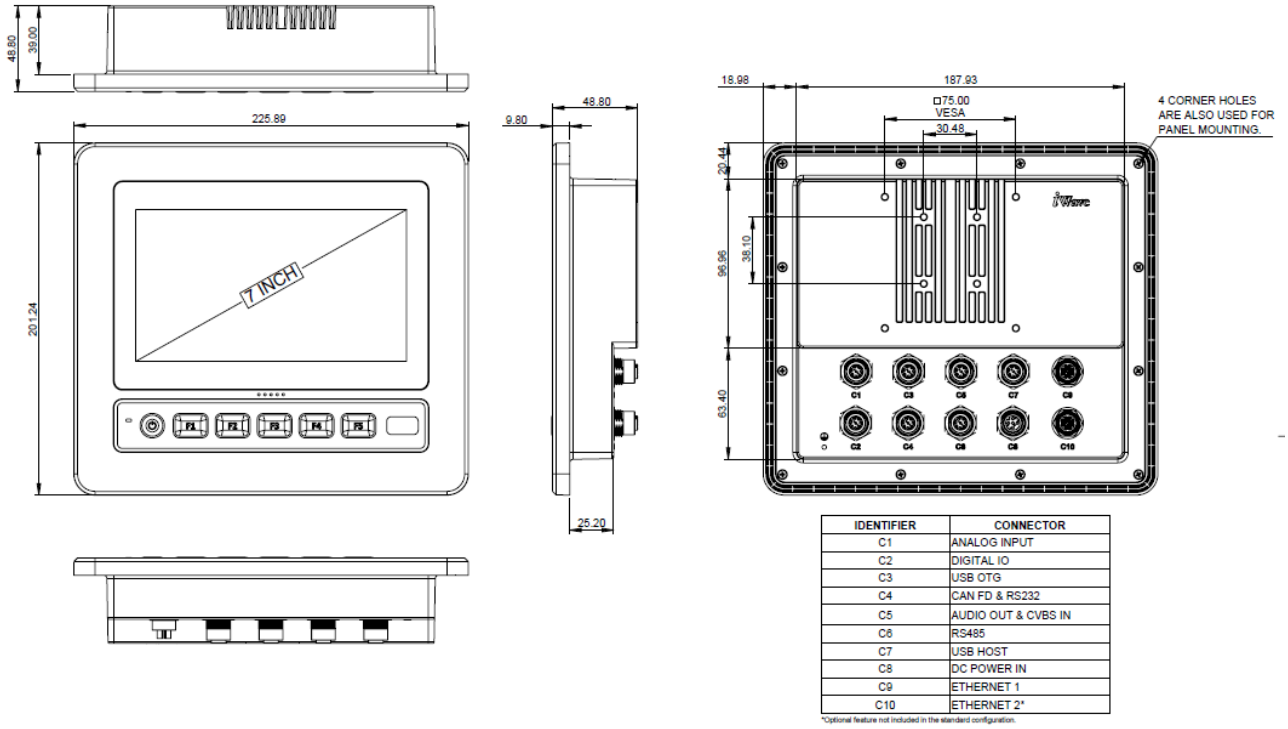
*Optional Features will not be populated in the standard configuration. Please contact iWave Systems

1. 2 PIN Connector is shared between buzzer and speaker by default is speaker is connected.
2. UART 4 is shared between UART to USB converter & USB OTG by default USB OTG is supported.
3. UART1 is shared between 12 PIN connector and Bluetooth Module, by default it will be connected to Bluetooth Module

2.2 HMI Mechanical detail

This chapter contains illustrations of the HMI Mechanical Dimension.

2.2.1 7” display HMI Dimension

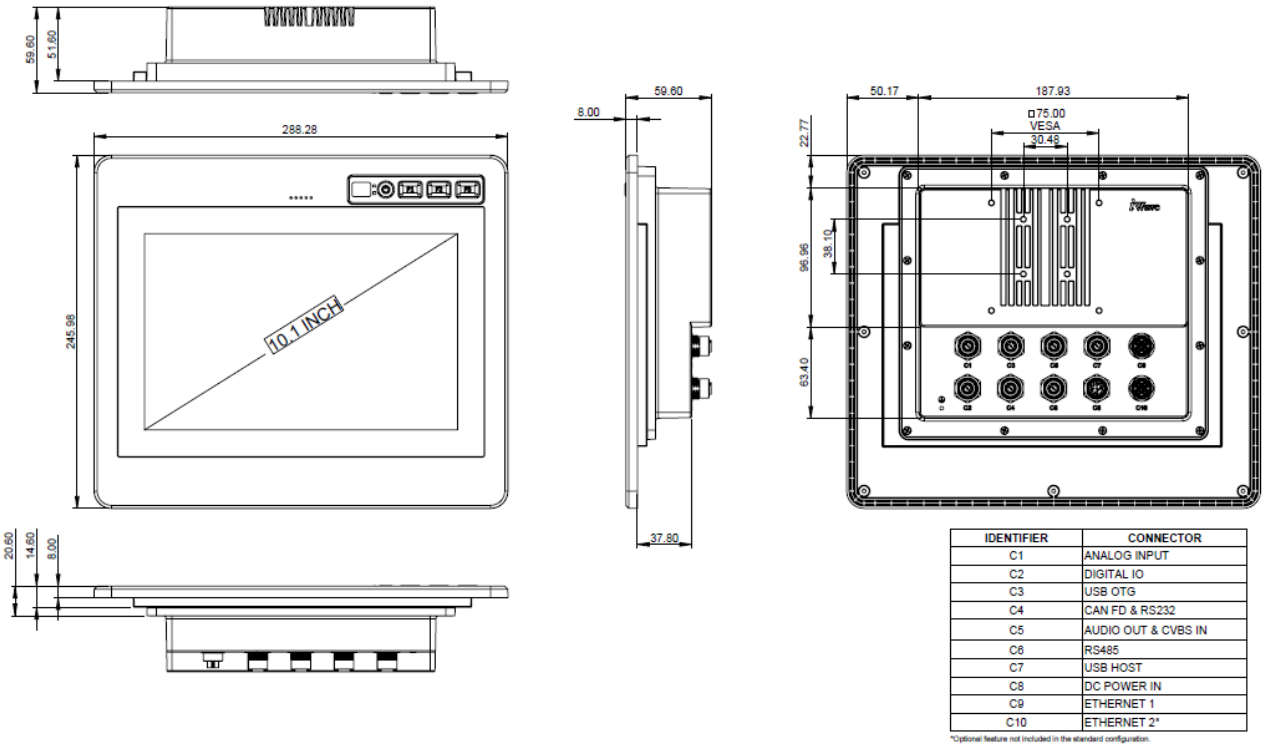


IDENTIFIER	CONNECTOR
C1	ANALOG INPUT
C2	DIGITAL IO
C3	USB OTG
C4	CAN FD & RS232
C5	AUDIO OUT & CVBS IN
C6	RS485
C7	USB HOST
C8	DC POWER IN
C9	ETHERNET 1
C10	ETHERNET 2*

*Optional feature not included in the standard configuration.

Figure 2 : 7” HMI Drawing

2.2.2 10.1” display HMI Dimension



IDENTIFIER	CONNECTOR
C1	ANALOG INPUT
C2	DIGITAL IO
C3	USB OTG
C4	CAN FD & RS232
C5	AUDIO OUT & CVBS IN
C6	RS485
C7	USB HOST
C8	DC POWER IN
C9	ETHERNET 1
C10	ETHERNET 2*

*Optional feature not included in the standard configuration.

Figure 3 : 10.1” HMI Drawing

Note:
All the dimensions are in mm
Enclosure design feature can change without any notice for improving product Feature.

2.3 HMI Specification

Table 1 : HMI Specification

CPU	i.MX8M Mini Quad Core	
Core Class & CPU Clock	Arm Cortex A53 & Cortex®-M4	
Memory		
Flash Memory	8GB eMMC Flash	
RAM	1GB/2GB –LPDDR4	
Micro SD card slot	4-bit MMC/SDIO/SD	
Operating System		
Supported OS	Linux 5.4.70 & Android 11.0*	
Communication Interfaces		
Ethernet-1(PoE)	1x10/100/1000 Mbps Ethernet (M12 X-code 8P)	
Ethernet-2	1x10/100/1000 Mbps Ethernet (M12 X-code 8P) *	
USB 2.0	2xUSB Host (M12 A-code 8P)	
USB OTG	1xUSB OTG (M12 A-code 8P)	
CAN FD	2x CAN up-to 5Mbps data rate	(M12 A-code 8P)
RS232	1xRS232	
RS485	2xRS485 (M12 A-code 8P)	
Digital Input	Isolated Digital Input x 2 upto 36V (sinking)	(M12 A-code 8P)
Digital Output	Isolated Digital output x 2 upto 36V (sinking)	
Analog Input	Analog Input x 4: 4-20mA or +/-12V (M12 A-code 8P)	
Camera	MIPI Camera*	
RTC	RTC with Coin cell battery	
Watchdog	External Watchdog Timer	
Keypad	Software configurable Keypad	
Buzzer or speaker	Buzzers Indicator,3V,15mA,78 dB SPL	
Battery	Battery for emergency data Backup*	
Wireless Communication interfaces		
WIFI	IEEE 802.11 a/b/g/n/ac	
Bluetooth	Bluetooth 5.0	
Audio-Video		
Audio	Line Out	(M12 A-code 8P)
Video In	CVBS Video Input	
M.2 Expansion Slot		
M.2 Connector Key B*(for LTE & positioning or SSD)		
PCIe	PCIe 2.0 ×1	

USB	USB 2.0 ×1
SIM	Micro SIM Connecter /eSIM
Peripheral Expansion	
Module Expansion connector	UART/i2C/SPI interface for Plug and Play wireless module & Sensor
Enclosure	
Front Bezel	Aluminum
Back cover, heat Sink & Connector Plate	Aluminum
Ingress Protection	Full IP67
7” HMI Weight	1.5 Kg (Approx)
10.1” HMI Weight	1.9 Kg (Approx)
Power Supply	
Power Input	9V/24V DC external Supply (M12 A-code 4P)
	Load Dump Protection (-36V -90V) & PoE+ (IEE802.3at) *
Typical Environment condition	
Storage Temperature	-20°C to +70°C
Operating Temperature	-20°C to 65°C
Humidity	95% @ 40°C

* Optional Features will not be populated in the standard design and may have MOQ requirement. Please contact iWave Systems.

Table 2 : LCD Specification

LCD Specification		
Size	10.1”	7”
Resolution	1280 x 800	1024 x 600
Aspect Ratio	16:10	16:9
Brightness	800 cd/m^2	
Backlight Life	Min 70K Hrs	Min 50K Hrs
Touch	PCAP with Multi touch	
LCD Type	IPS transmissive type	

Table 3 : LCD and Touch Panel Specification

2.4 HMI Connectors

This section describes the Connectors of HMI.

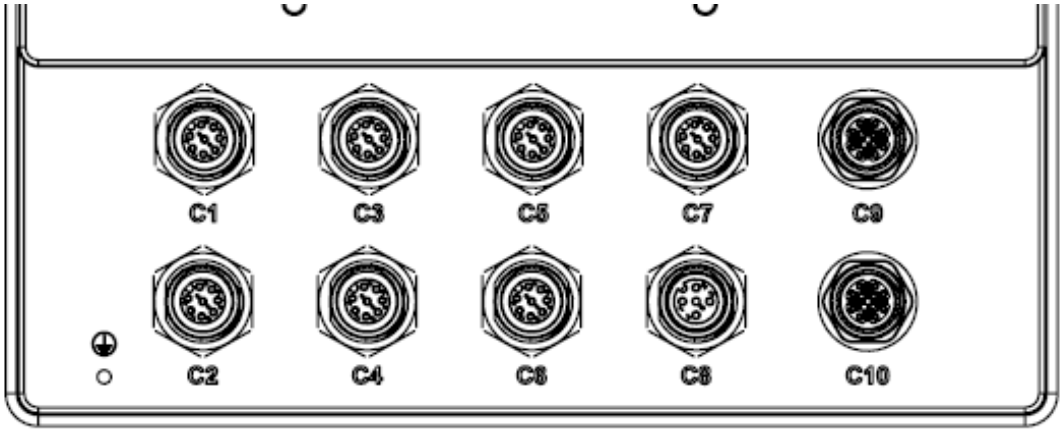


Table 4 : HMI Connector Details

Position	Description
C1	Digital Input Connector
C2	Digital Output Connector
C3	USB OTG Connector
C4	CAN FD & RS232 Connector
C5	Audio Out & CVBS IN connector
C6	RS485 Connector
C7	USB Host Connector
C8	DC Power IN Connector
C9	Ethernet 1 Connector
C10	Ethernet 2 Connector*

** Optional feature not included in the standard configuration.*

2.4.1 Power Input Connector

Connector: M12 A-code 4P, Female
Mating connector: M12 A-code 4P, Male

Table 5 : Power Input Connector Pin Detail

Pin No	Signal Name	Signal Type	Signal Description
1	VCC	Power	12-24V DC Supply.
2	VCC	Power	12-24V DC Supply.
3	GND	Power	Ground
4	GND	Power	Ground

2.4.2 RS485 Connector

Connector: M12 A-code 8P Female
Mating connector: M12 A-code 8P Male

Table 6 : RS485 Connector Pin Details

Pin No	Signal Name	Signal	Signal Description
1	UART_3_RS485_RXA1	Differential	Positive Differential Input of Transceiver 1.
2	UART_3_RS485_TXZ1	Differential	Negative Differential Output of Transceiver 1.
3	UART_3_RS485_TXY1	Differential	Positive Differential Output of Transceiver 1.
4	UART_2_RS485_RXA2	Differential	Positive Differential Input of Transceiver 2.
5	UART_2_RS485_RXB2	Differential	Negative Differential Input of Transceiver 2.
6	UART_2_RS485_TXZ2	Differential	Negative Differential Output of Transceiver 2.
7	UART_2_RS485_TXY2	Differential	Positive Differential Output of Transceiver 2.
8	UART_3_RS485_RXB1	Differential	Negative Differential Input of Transceiver 1.

Note:

- By default, both RS485 interfaces will be configured as Full-Duplex.
- Both the RS485 can be configured as Half-duplex also. To configure RS485_1 as half-duplex, externally connect PIN 1 & 3 and PIN 2 & 8. Similarly, for RS485_2 connect externally PIN 4 & 7 and PIN 5 & 6 to configure it as half-duplex.

2.4.3 RS232&CAN Connector

Connector: M12 A-code 8P Female
Mating connector: M12 A-code 8P Male

Table 7 : RS232 & CAN Connector Pin Details

Pin No	*Signal Name*	*Signal Type*	*Signal Description*
1	UART_4_RS232_TXD	Output	RS232 Transmitter output.
2	UART_4_RS232_RXD	Input	RS232 Receiver Input.
3	GND	Power	Ground.
4	SPI_2_CAN_H2	Differential	Differential Low signal of Transceiver 2.
5	SPI_2_CAN_L2	Differential	Differential High signal of Transceiver 2.
6	SPI_1_CAN_H1	Differential	Differential Low signal of Transceiver 1
7	SPI_1_CAN_L1	Differential	Differential High signal of Transceiver 1
8	GND	Power	Ground

2.4.4 USB Host Connector

Connector: M12 A-code 8P, Female
Mating connector: M12 A-code 8P, Male

Table 8 : USB Host Connector Pin Details

Pin No	*Signal Name*	*Signal Type*	*Signal Description*
1	VBUS_1	Power	USB1 5V Power.
2	VBUS_2	Power	USB2 5V Power.
3	USB2_D+	Differential	USB2 Data Signal Positive.
4	USB2_D-	Differential	USB2 Data Signal Negative.
5	USB1_D+	Differential	USB2 Data Signal Positive.
6	USB1_D-	Differential	USB2 Data Signal Negative.
7	GND	Power	Ground
8	GND	Power	Ground

2.4.5 Digital Input Output Connector

Connector: M12 A-code 8P, Female
Mating connector: M12 A-code 8P, Male

Table 9 : Digital input output Connector Pin Details

Pin No	Signal Name	Signal Type	Signal Description
1	DIO_VCC	Power	Digital Output Power.
2	DOUT2	Output	Sinking digital output 2
3	DOUT1	Output	Sinking digital output 1
4	DIO_GND	Power	Digital IO Ground
5	DIN1	Input	Sinking digital Input 1
6	DIN2	Input	Sinking digital Input 2
7	DIO_GND	Power	Digital IO Ground
8	DIO_GND	Power	Digital IO Ground

2.4.6 Analog Input Connector

Connector: M12 A-code 8P, Female
Mating connector: M12 A-code 8P, Male

Table 10 : Analog Input Connector Pin Details

Pin	Signal Name	Signal Type	Signal Description
1	IN_AIN0	Input	Analog Input 0
2	IN_AIN1	Input	Analog Input 1
3	IN_AIN2	Input	Analog Input 2
4	ANALOG_VCC_-VE	Power	Analog Input -ve Supply
5	ANALOG_VCC_+VE	Power	Analog Input +ve Supply
6	IN_AIN3_P	Input	Analog Input 3 / Differential Analog input +Ve
7	IN_AIN3_N	NC/ Differential	NC / Differential Analog input -Ve
8	AGND	Power	Analog Signal GND

2.4.7 USB OTG Connector

Connector: M12 A-code 8P, Female
Mating connector: M12 A-code 8P, Male

Table 11 : USB OTG Connector Pin Details

Pin	Signal Name	Signal Type	Signal Description
1	VBUS_OTG	Power	USB OTG 5V Power.
2	USB_OTG_D-	Differential	USB OTG Data Signal Negative.

3	USB_OTG_D+	Differential	USB OTG Data Signal Positive.
4	USB_OTG_ID	Input	USB OTG ID.
5	GND	Power	Ground
6	NC	NC	No Connection
7	NC	NC	No Connection
8	NC	NC	No Connection

2.4.8 Audio-Video In Connector

Connector: M12 A-code 8P, Female
Mating connector: M12 A-code 8P, Male

Table 12 : Audio-Video In Connector Pin Details

Pin	Signal Name	Signal Type	Signal Description
1	CVBS_IN2	Input	CVBS Input 2
2	CVBS_IN1	Input	CVBS Input 1
3	HP_L	Output	Headphone/ Line out Left signal
4	HP_R	Output	Headphone/ Line out Right signal
5	AGND_Audio	Power	Ground
6	CVBS_IN4	Input	CVBS Input 4
7	CVBS_IN3	Input	CVBS Input 3
8	GND	Power	No Connection

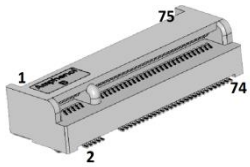
2.4.9 Ethernet Connector

Connector: M12 X-code 8P, Female
Mating connector: M12 X-code 8P, Male

Table 13 : Ethernet Connector Pin Details

Pin	Signal Name	Signal Type	Signal Description
1	ENET1_A_P	Differential	Ethernet Pair 1 Positive
2	ENET1_A_N	Differential	Ethernet Pair 1 Negative
3	ENET1_B_P	Differential	Ethernet Pair 2 Positive
4	ENET1_B_N	Differential	Ethernet Pair 2 Negative
5	ENET1_D_P	Differential	Ethernet Pair 4 Positive
6	ENET1_D_N	Differential	Ethernet Pair 4 Negative
7	ENET1_C_N	Differential	Ethernet Pair 3 Negative
8	ENET1_C_P	Differential	Ethernet Pair 3 Positive

2.4.10 M.2 Connector Details



Connector Part No: 2199230-3.

M.2 Connector supports PCIe /USB 2.0/UIM interfaces.

M.2 is primarily targeted for board types 2242 and 3042 board sizes and Supports PCIe based SSDs, USB or PCIe based WWAN (LTE, GPS).

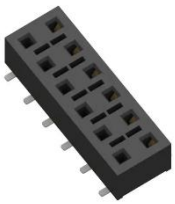
Table 14 :M.2 Connector Pin Detail

Pin No	Signal Name	Signal Type	Signal Description
1	NC	No Connection	No Connection
2	VCC_3V3	Power	3.3V Power Input
3	GND	Power	Ground
4	VCC_3V3	Power	3.3V Power Input
5	GND	Power	Ground
6	FULL_CARD_POWER_OFF#	IO, 3.3V CMOS	Card On-Off
7	USB_D+	Differential	USB Data Positive.
8	W_DISABLE1# (O)(0/3.3V)	IO, 3.3V CMOS	LTE Disable
9	USB_D-	Differential	USB Data Negative.
10	NC	No Connection	No Connection
11	GND	Power	Ground
12	Key	No Connection	No Connection
13	Key	No Connection	No Connection
14	Key	No Connection	No Connection
15	Key	No Connection	No Connection
16	Key	No Connection	No Connection
17	Key	No Connection	No Connection
18	Key	No Connection	No Connection
19	Key	No Connection	No Connection
20	I2S_CLK	No Connection	No Connection
21	CONFIG_0	No Connection	No Connection
22	I2S_RX	No Connection	No Connection
23	NC	No Connection	No Connection
24	I2S_TX	No Connection	No Connection
25	NC	No Connection	No Connection
26	W_DISABLE_2	I, 1.8V	GNSS Disable
27	GND	Power	Ground
28	I2S_WS	No Connection	No Connection
29	NC	No Connection	No Connection
30	UIM-RESET (I)	I,1.8V	UIM clock RESET.

Pin No	Signal Name	Signal Type	Signal Description
31	NC	No Connection	No Connection
32	UIM-CLK (I)	I,1.8V	UIM clock signal.
33	GND	Power	Ground
34	UIM-DATA (I/O)	IO,1.8V	UIM clock signal.
35	NC	No Connection	No Connection
36	UIM-PWR (I)	I,1.8V	Power source for the
37	NC	No Connection	No Connection
38	NC	No Connection	No Connection
39	GND	Power	Ground
40	NC	No Connection	No Connection
41	PERN0	Differential	PCEI Receive Negative
42	NC	No Connection	No Connection
43	PERP0	Differential	PCEI Receive Positive
44	NC	No Connection	No Connection
45	GND	Power	Ground
46	NC	No Connection	No Connection
47	PETN0	Differential	PCIe Transmit Negative
48	NC	No Connection	No Connection
49	PETP0	Differential	PCIe Transmit Positive
50	PERST#	I,3.3V	PCIe RESET
51	GND	Power	Ground
52	CLKREQ#	IO,3.3V	PCIe Clock Request
53	REFCLKN	Differential	PCIe Reference Clock
54	PEWAKE#	IO, 3.3V CMOS	PCIe Wake
55	REFCLKP	Differential	PCIe Reference Clock
56	NC	No Connection	No Connection
57	GND	Power	Ground
58	NC	No Connection	No Connection
59	NC	No Connection	No Connection
60	NC	No Connection	No Connection
61	NC	No Connection	No Connection
62	NC	No Connection	No Connection
63	NC	No Connection	No Connection
64	NC	No Connection	No Connection
65	NC	No Connection	No Connection
66	SIM_DETECT (I)	I,1.8V	SIM card Detection
67	RESET#	O,1.8V	Card Reset
68	NC	No Connection	No Connection

Pin No	Signal Name	Signal Type	Signal Description
69	NC	No Connection	No Connection
70	VCC_3V3	Power	3.3V Power Input
71	GND	Power	Ground
72	VCC_3V3	Power	3.3V Power Input
73	GND	Power	Ground
74	VCC_3V3	Power	3.3V Power Input
75	NC	No Connection	No Connection

2.4.11 Peripheral module interface Connector details



Connector Part No: HLE-106-02-F-DV.

Module Connector supports SPI, I2C and UART interfaces for Plug and Play wireless module and sensor connection.

Max Peripheral Module size (L x W): 32mm x 53mm.

Table 15 : Module Connector Pin Detail

Pin No	Signal Name	Signal Type	Signal Description
1	ECSPI2_SS0	Output	SPI Chip select
2	ECSPI2_MOSI	Output	SPI Master Out Slave In
	UART1_TXD	Output	UART Transmitter
3	I2C3_SCL	Clock	I2C Clock
	ECSPI2_MISO	Input	SPI Master In Slave Out
	UART1_RXD	Input	UART Transmitter
4	I2C3_SDA	IO	I2C Data
	ECSPI2_SCLK	Clock	SPI Clock
5	GND	Power	Ground
6	VCC_3V3_CC	Power	3.3V Power Input
7	UART1_RXD	Input	UART Receiver
8	UART1_TXD	Output	UART Transmitter
9	I2C3_SCL	Clock	I2C Clock
10	I2C3_SDA	IO	I2C Data
11	GND	Power	Ground
12	VCC_3V3_CC	Power	3.3V Power Input

2.4.12 Standard Connectors

In this section, the standard connector's part numbers are mentioned. All connector pinouts are as per standards.

Table 16 : Standard Connectors Detail

Interface	Connector Description	Connector Part No
Micro SD	Push-Push type 10pin Connector	GTFP08431BEU
Micro SIM	Hinged Micro SIM Connector	78800-0001

3 Software Specification

iWave HMI deliverables include BSP for Linux/Android and libraries for GUI development.
Linux is a family of free and open-source software operating systems. Yocto framework is used for Linux-based HMI. Linux 5.4.70 kernel and 2020.04 Uboot loader versions are used in Linux BSP. iWave's HMI is based on Android version 11.0

As our BSP comes with pre-integrated Open-source GUI libraries and SDK which helps the user to build a rich and interactive GUI on iWave's HMI platform

3.1 BSP Contents and Features

BSP offers flexibility to incorporate Industrial protocols, open-source protocols and applications for any automated GUI Applications. Depending on customer OS requirement (Linux/Android) corresponding Linux BSP or Android BSP will be provided.

Table 17 : BSP Contents

Items	Name	Description
Kernel	Linux 5.4.70	Linux Source code based on 5.4.70 version
Boot loader	U-Boot 2020.04	Primary Boot Loader program
File System	Yocto 3.0 Zeus	Linux file system
Tool Chain	GCC Version 9.2.0 (GCC)	Cross Compiler Tool
Tool	UUU Tool	Flashing Tool
Binaries for Linux	Flash.bin, Image & DTB Rootfs	U-Boot Image, Kernel images and Device Tree Binaries, Linux File System
Binaries for Android	U-Boot, Boot Image, Recovery Image, System Boot Image, User Data image	U-Boot Image, Kernel Image & Device Tree, Factory Reset or Reset the Original OS Version, Android File System Application Data Storage for the system application.

Table 18 : BSP Features

Items	Name	Description
Boot loader	U-Boot 2020.04	Primary Boot Loader Program.
OS	Linux 5.4.70 Android 11.0	Linux OS. Android OS
Drivers supported in Linux and Android	USB	USB driver with Host and OTG support.
	Ethernet	Ethernet Driver with TCP/IP protocol support.
	SDHC	SDHC driver.

Items	Name	Description
	Wi-Fi (SPI/SDIO)	802.11 a/b/g/n/ac Wi-Fi Host-Client support.
	Bluetooth (UART)	BLE 5.0 with GAP, GATT & ObexFTP profile.
	Touch	Capacitive Multi Touch driver.
	UART	RS232, RS485 (full/half duplex).
	SPI	SPI driver.
	I2C	I2C driver.
	PWM	PWM Brightness Control & Buzzer driver provided
	GPIO	GPIO driver.
	Watchdog	System watchdog driver.
	Audio	Audio line-out support.
	LVDS	LVDS display driver.
	DIO	Digital Input and Digital Output driver
	ADC	Analog Input
	MIPI Camera	MIPI CSI Driver support
	Keypad	Software configurable keypad
	Buzzer	PWM-Buzzer driver support
	Speaker	Stereo Headphone & Mono Class-D speaker support
	PCIe	NVM Express block device driver support
	GPS	GNSS support
	4G	LTE support
	CVBS input/Video IN	adv7280-m Driver support
	CAN FD	TCAN4X5X driver support
Linux Library/Packages/ Applications	QT OPEN-Source Libraries	XWayland with QT 5.15 Libraries
	Web Browsers	HTML5 feature is provided.
	PDF Viewer	PDF viewer is provided.
	Python	Python language feature is provided
	JRE	Java Run Time is provided.
	Node.js	Java script run time environment feature is provided.
	Multimedia Applications	Multimedia Applications like GThumb, VLC, Gstreamer and Image viewer are supported.
	Email	SMTP, POP3 & IMAP Protocol supported
	PHP	PHP feature is provided.
	Apache server	Apache server feature is provided.

Items	Name	Description
	VNC viewer	VNC Viewer Application is provided.
	Mosquitto MQTT	Mosquitto MQTT broker feature is provided.
	RabbitMQ/AMQP	RabbitMQ/AMQP feature is provided
	OpenSSL Libraries	OpenSSL library is provided.
	OpenCV Libraries	OpenCV library is provided.
	OpenCL Libraries	OpenCL Libraries is provided.
	OpenGL ES Libraries	OpenGL ES library is provided
	OpenVG Libraries	OpenVG library is provided
Android Library/Packages/ Applications	Android 11.0 Standard Library/package/Applications	Library/package/Application Supported in Android version 11.0 is provided.
Tool Chain	GCC Version 9.2.0	A cross compiler tool to develop Application
Protocols	Supported Protocols	CAN J1939, CAN ISO- 15765-4 & CAN 11898 Modbus TCP/IP & RTU Ethernet TCP/UDP/IP MQTT & AMQP
Security	Security Features	Secure Storage WPA2 Security Secure File system Secure IOT (cloud Communication) AHAB (Secure & encrypted boot) OPTEE (Arm TrustZone architecture) CAAM

4 Pre-Compliance Test Specification

iWave HMIs are engineered to meet the below Pre-Compliance test standard.

Table 19 : Pre-Compliance Test Spec

Test Type	Test	Test Standard
Immunity Test	Electrostatic Discharge (ESD)	IEC 61000-4-2
	Electrical Fast Transient (EFT)	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Voltage Dips and Interruption	IEC 61000-4-11
	RF Electromagnetic Field	IEC 61000-4-3
	Power Frequency magnetic field	IEC 61000-4-8
	Conducted Disturbance Induced by	IEC 61000-4-6
Emission Test	Conducted Emission	EN55032/ CISPR32
	Radiated Emission	EN55032/ CISPR32

Note: The above Pre-Compliance tests are in plan.

5 Ordering Information

Part Number	Description
iW-G39RH-04CI-4L01G-E008G-10CA-ACAC-L-B	10.1" Display Rugged HMI with Capacitive touch, i.MX 8M mini-QUAD, ***1GB LPDDR4***, 8GB eMMC, Aluminium enclosure, WiFi and 1X Ethernet, Linux, Industrial Grade, IP67
iW-G39RH-04CI-4L02G-E008G-10CA-ACAC-L-B	10.1" Display Rugged HMI with Capacitive touch, i.MX 8M mini-QUAD, ***2GB LPDDR4***, 8GB eMMC, Aluminium enclosure, WiFi and 1X Ethernet, Linux, Industrial Grade, IP67
iW-G39RH-04CI-4L01G-E008G-07CA-ACAC-L-B	7" Display Rugged HMI with Capacitive touch, i.MX 8M mini-QUAD, ***1GB LPDDR4***, 8GB eMMC, Aluminium enclosure, WiFi and 1X Ethernet, Linux, Industrial Grade, IP67
iW-G39RH-04CI-4L02G-E008G-07CA-ACAC-L-B	7" Display Rugged HMI with Capacitive touch, i.MX 8M mini-QUAD, ***2GB LPDDR4***, 8GB eMMC, Aluminium enclosure, WiFi and 1X Ethernet, Linux, Industrial Grade, IP67

Note: Some Product Part Numbers are subject to MOQ & for different CPU and memory configurations, contact iWave systems.

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