



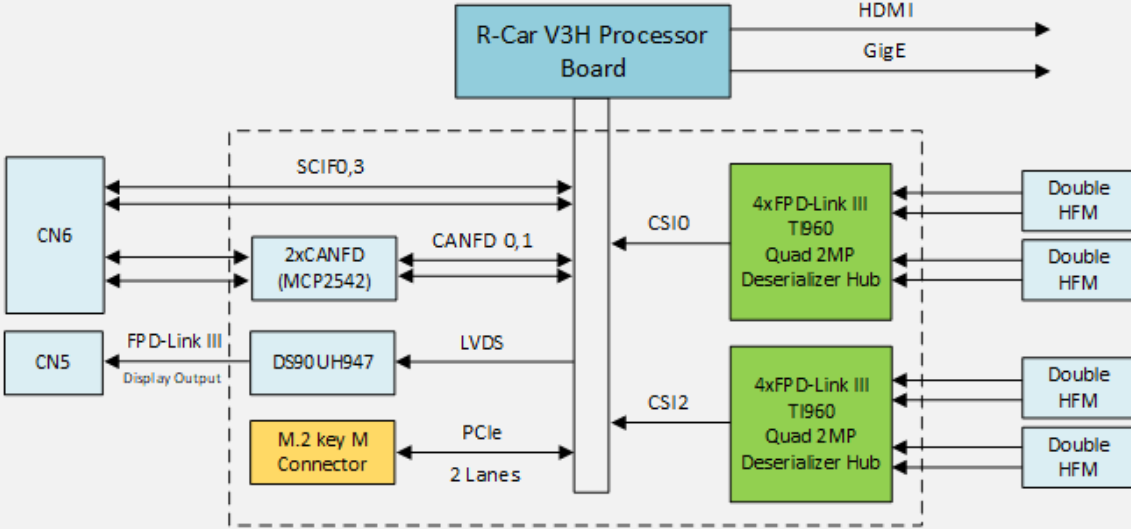
VIDEOBOX(MINIPLUS) DATASHEET

Hardware Specification

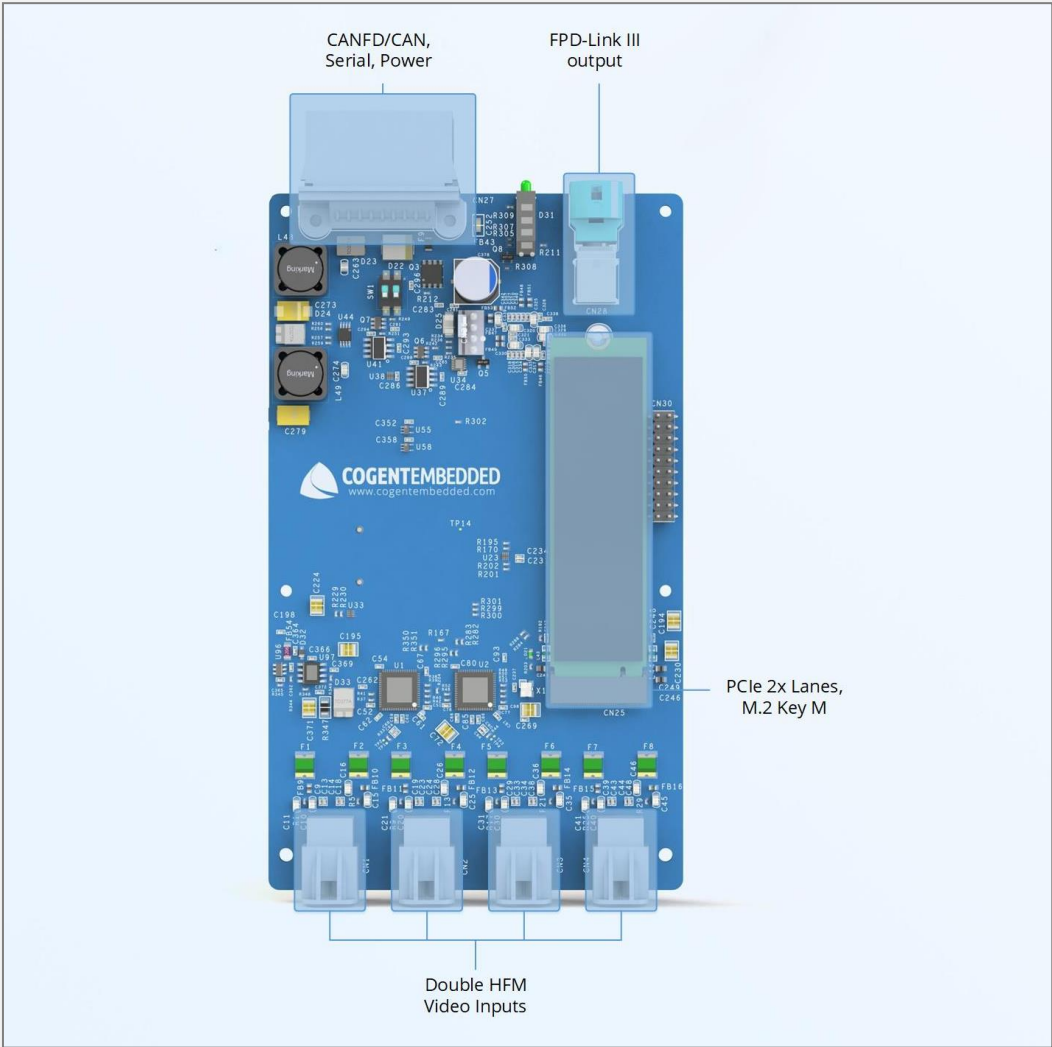
Videobox(miniPLUS) Hardware Features

Main SoC (Processing Unit)	<ul style="list-style-type: none">• Renesas R-Car V3H:<ul style="list-style-type: none">○ 4x 1.0-GHz ARM® Cortex®-A53 cores○ Image recognition engine (IMP-X5-V3H)○ 2x Image signal processors (ISPs)○ Image Rendering engine (IMR)○ Hardware accelerators for CNN, Dense Optical Flow, Stereovision and Object Classification
RAM	<ul style="list-style-type: none">• LPDDR4 2GB
Video Input Interfaces	<ul style="list-style-type: none">• 8x FPD-Link III Video Inputs (2x TI960 Deserializer Hubs)
Ethernet	<ul style="list-style-type: none">• 1x GigE or (optional) Broad-R Ethernet output
CANFD/CAN	<ul style="list-style-type: none">• 2x CANFD/CAN
Storage	<ul style="list-style-type: none">• On-board eMMC (32GB)
Video Output	<ul style="list-style-type: none">• 1x HDMI Output• or• 1x FPD-Link III Output

Videobox(miniPLUS) Block Diagram



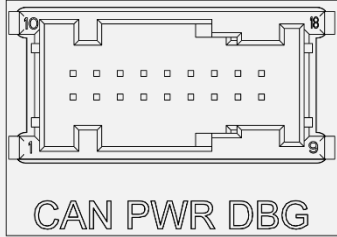
Videobox(miniPLUS) Motherboard



Videobox(miniPLUS) Connectors Pinout

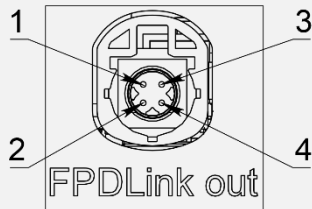
CAN Power Connector

Power, CAN, wakeup. TE Connectivity: 1-1355154-1



Pin	Connection	Connection	Pin
1	DC in	DC in	10
2	GND	GND	11
3	SCIF3 TXD	nc	12
4	SCIF3 RXD	nc	13
5	CAN0_H	nc	14
6	CAN0_L	CAN1_H	15
7	WKUP0	CAN1_L	16
8	WKUP1	SCIF0 TXD	17
9	nc	SCIF0 RXD	18

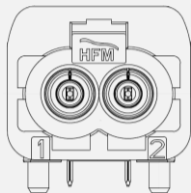
FPD-Link III Display Output Connector



Pin	Connection
1	A-
2	B-
3	A+
4	B+

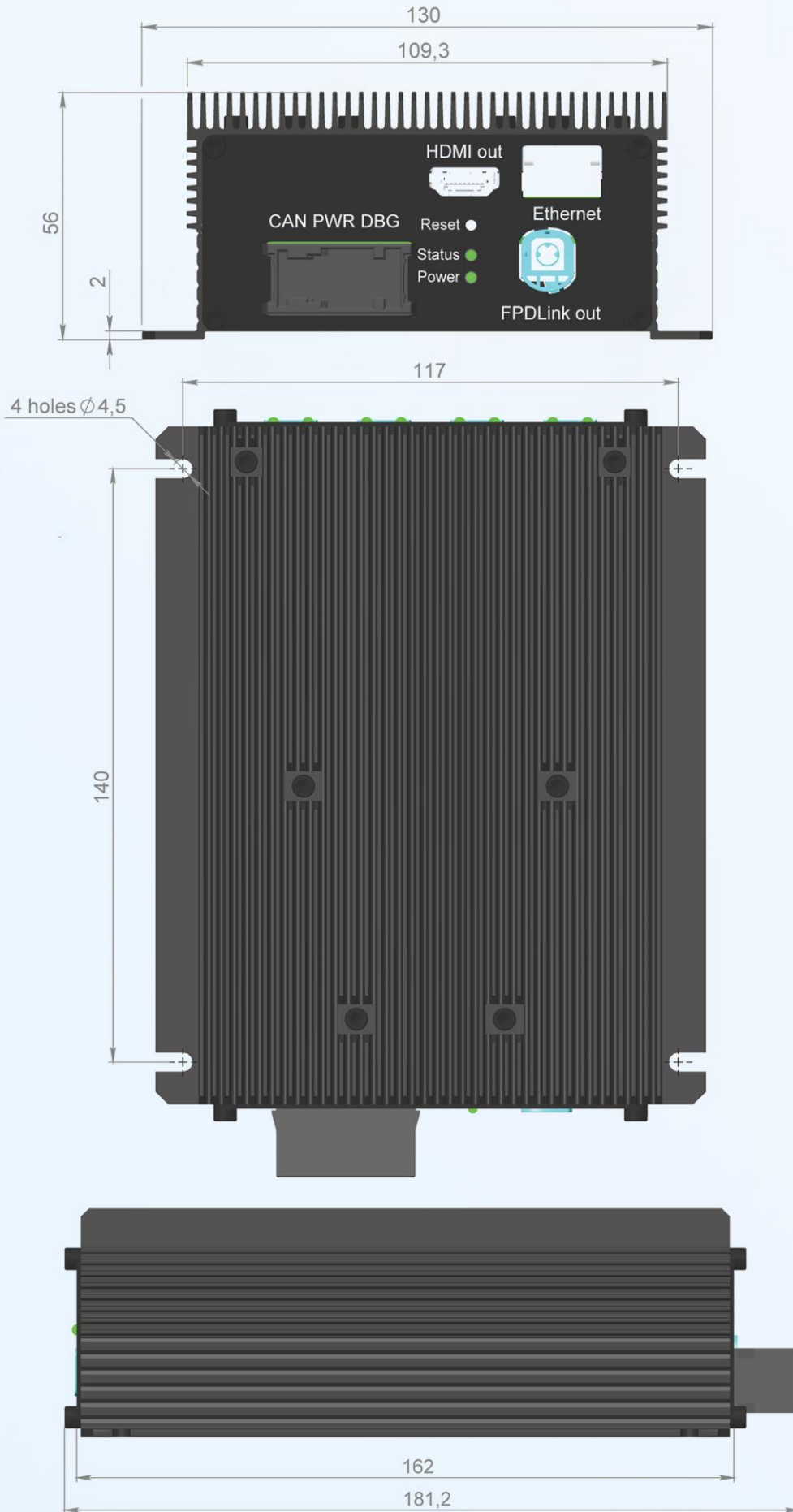
Camera Input Connector

Rosenberger HFM mini dual: AMS22B-40MZ5-Z



Ref. Des.	Pin	Camera Number
CN1	1	1
	2	2
CN2	1	3
	2	4
CN3	1	5
	2	6
CN4	1	7
	2	8

Videobox(miniPLUS) Dimensions



Videobox(miniPLUS) Software

Base OS	<ul style="list-style-type: none"> • Linux/Yocto (4.9, 4.14 Linux LTS) • (option) QNX, GHS Integrity
Recording Software Suite	<ul style="list-style-type: none"> • Camera and Sensors recording: <ul style="list-style-type: none"> ○ Up to 4x 2MP 30fps Camera streams (raw), vehicle data (CANFD/CAN, Ethernet), sensors (Ethernet, CANFD/CAN) ○ Time synchronization ○ Recording and Playback modes ○ Cloud synchronization/upload
Camera Calibration Software	<ul style="list-style-type: none"> • Cogent Intrinsic Calibration Suite • Cogent Extrinsic Calibration Suite
Surround View Software	<ul style="list-style-type: none"> • Cogent 3D Surround View SDK: <ul style="list-style-type: none"> ○ 2D/3D projections, fixed and free viewpoints ○ UI overlays (vehicle 3D model, projected path/guidelines, obstacles, objects) ○ Color harmonization ○ Historical view ○ Dynamic/adaptive mesh and blend zones ○ Factory calibration ○ Online calibration (autocalibration)
Vision Functions	<ul style="list-style-type: none"> • Cross Traffic Alert • Moving Objects Detection • Pedestrian Detection • Trailer Angle Detection • Dirt & Blockage Detection
Ethernet AVB	<ul style="list-style-type: none"> • Cogent Ethernet AVB Stack <ul style="list-style-type: none"> ○ AVDECC (IEEE1722.1) ○ MSRP/MVRP (IEEE802.1Q) ○ gPTP (AS master capable) ○ AV payload (IEEE1722, IEEE1733) ○ Traffic shaping



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