



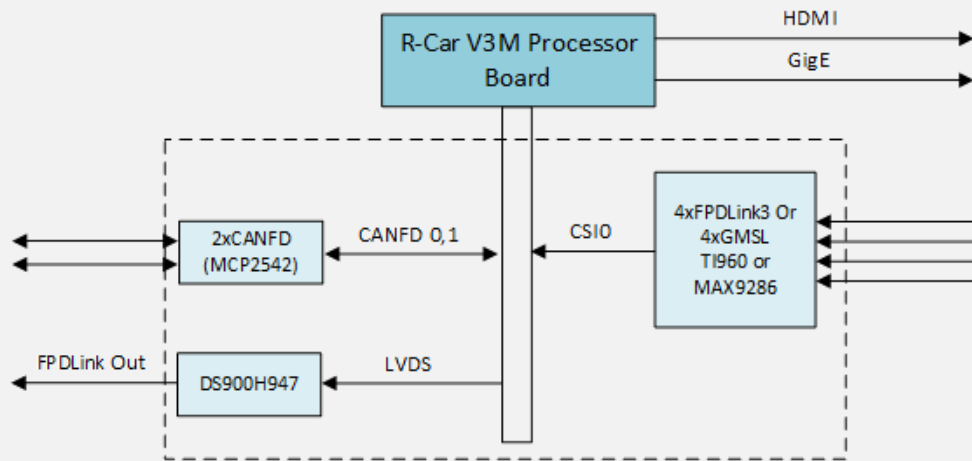
VIDEOBOX(mini) DATASHEET

Hardware Specification

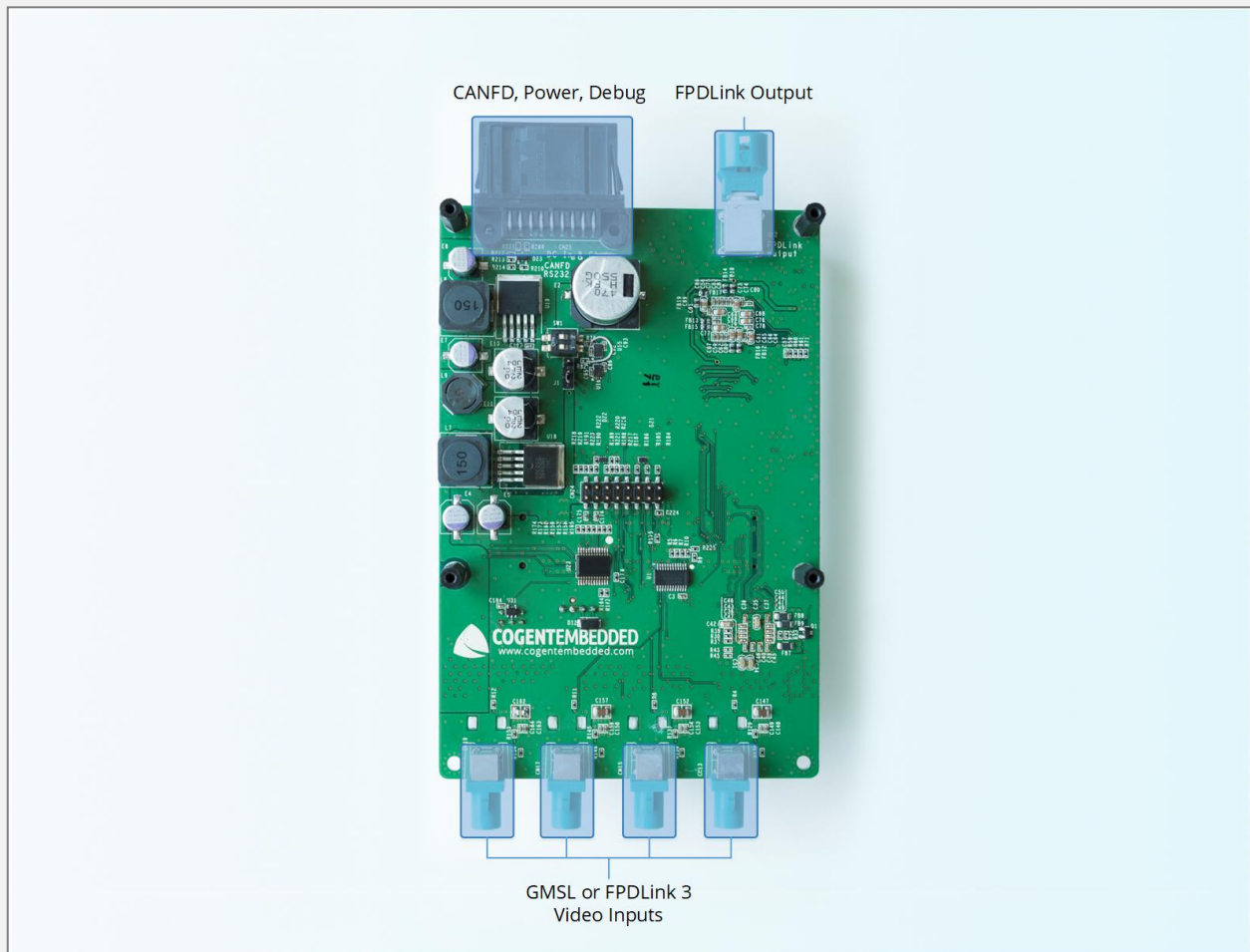
Videobox(mini) Hardware Features

Main SoC (Processing Unit)	<ul style="list-style-type: none">• Renesas R-Car V3M:<ul style="list-style-type: none">○ 2x Cortex-A53 (800-MHz)○ Image recognition engine (IMP-X5-V3M)○ Image signal processor (ISP)○ Image Rendering engine (IMR)○ Hardware accelerators for CNN
RAM	<ul style="list-style-type: none">• DDR3L 2GB
Video Input Interfaces	<ul style="list-style-type: none">• 4x FPDLinkIII (TI960 Deserializer)• or• 4x GMSL (MAX9286)
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 FPDlink3 Output

Videobox(mini) Block Diagram



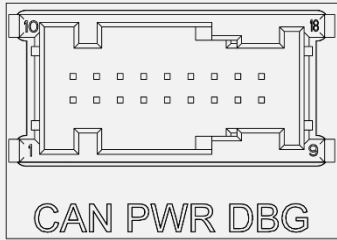
Videobox(mini) Motherboard



Videobox(mini) Connectors Pinout

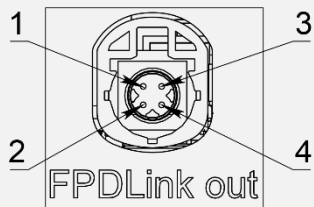
CAN Power Connector

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



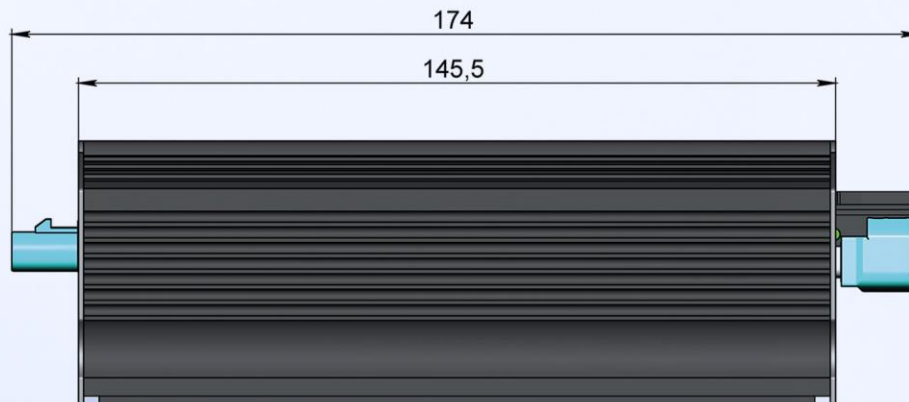
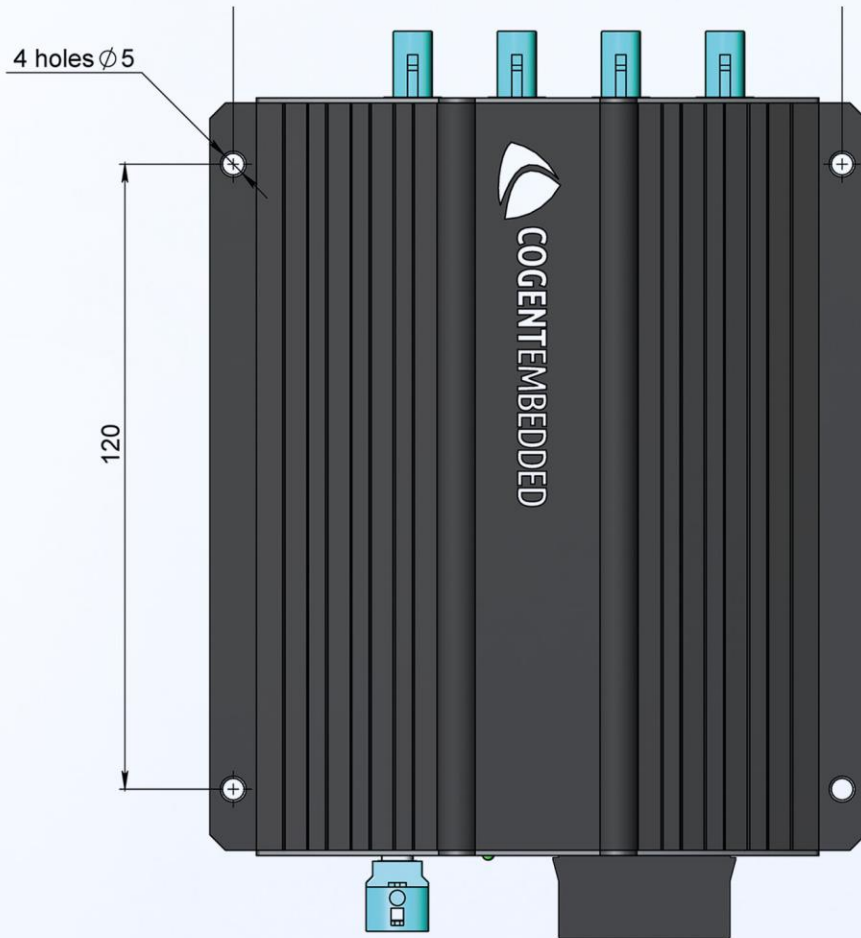
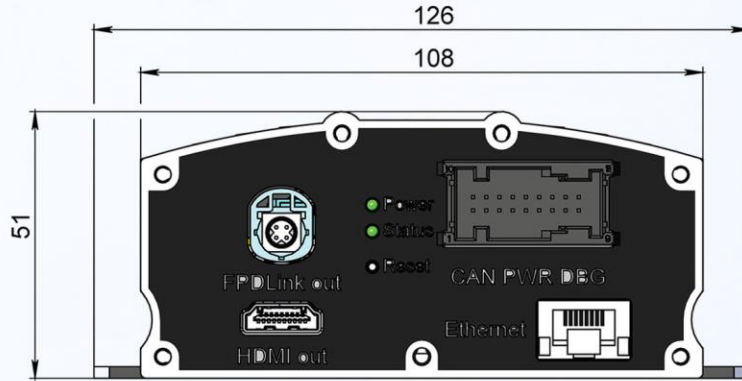
Pin	Connection	Connection	Pin
1	12VDC in	12VDC in	10
2	GND	GND	11
3	SER2_TX	nc	12
4	SER2_RX	nc	13
5	CAN0_H	nc	14
6	CAN0_L	CAN1_H	15
7	WKUP1	CAN1_L	16
8	WKUP0	SER0_TX	17
9	nc	SER0_RX	18

FPDLink-III Display Output Connector



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

Videobox(mini) Dimensions



Videobox(mini) Software

Base OS	<ul style="list-style-type: none">• Linux/Yocto (4.9, 4.14 Linux LTS)• (option) QNX, GHS Integrity
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• Trailer Angle 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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