

Quotation for Reference Hardware

2019.10.10
Panasonic

Quotation Agenda

- Summary of Quotation
- Concept of reference hardware/Device Configuration
- Reference Hardware specification for delivery
- Detail of Quotation (\$)

This quotation is response to the RFQ(AGL_ReferenceHardware_RFQ v0.3.docx) by confirmation of RHSA-EG on 8/7/2019.

Summary of Quotation

- **Hardware Sample**
 - Scheduled to be delivered on 10/31 with specifications meeting RFQ
 - Scheduled to supply 10 units(Quotation is 10 and 20)
 - If the specifications are the same, additional sample can be delivered 2 months after ordering.
- **BSP**

Not included in this quotation
- **Hardware Interface specification documents**

Document will be released 1st version at end of October.
- **Form Factor**

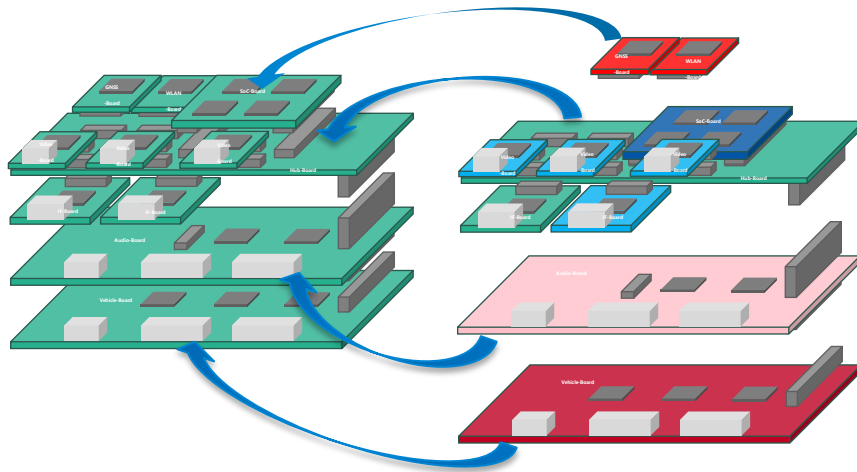
FormFactor can be delivered 2 months after ordering (Included in this quotation)
- **Design Review**

Please ask for an arrangement of design review after the release of this answer.

Concept of reference hardware

Purpose of the reference hardware provided from Panasonic

- This reference hardware supports AGL-UCB and GAP reduction of products from hardware
- This reference hardware can be changed to OEM product specifications by changing the peripheral function board.
- This time, the peripheral function is using product specification of an OEM



Interchangeable image of New Reference hardware

Specification	An OEM Spec	Renesas Reference	RFQ Response
SoC			
WiFi/BT			
GNSS			
Video			
⋮	⋮	⋮	
Audio			
CAN			
Ether UART USB SD-Card			

Device configuration

This table shows the specific devices assigned to achieve the RFQ hardware specification. Connectivity(WiFi/BT/GNSS) device assigned from Product specification device.

Project	Renesas Reference Hard	Device configuration for response to RFQ
SoC	Renesas: R-Car H3	Renesas: R-Car H3
WiFi/BT	TI: WL1837	Qualcomm: QCA6574A
GNSS	U-blox: M8Q	U-blox: M8030
VideoIn	Analog Device: ADV7513	Analog Device: ADV748
VideoOut	Renesas: R-Car H3	Renesas: R-Car H3
Audio	AKM: AK4613	AKM: AK4613
CAN	Renesas: R-Car H3	Renesas: R-Car H3
Ether/UART/USB /SD-Card	Renesas: R-Car H3	Renesas: R-Car H3

Reference Hardware specification for delivery

This table is a response to RFQ Table1(The function arrangement).
Response meet the requirement listed in “The function arrangement”.

Function	Connector type	Child board	
		RFQ	Response
Control Board	SoC(CPU, RAM, ROM)	-	X
	Video In	-	X
	Video Out	X	X
	USB	X	X
	Connectivity(Bluetooth, WiFi)	X	X
	GNSS	X	X
	Network(Ethernet)	X	X
Audio Board	Audio Input	-	X*
	Audio Output	-	X*
	Audio processing (Filtering, Acoustic, Mixing, etc.)	-	-
	Digital-Analog / Analog-Digital conversion processing	-	X*
Vehicle Board	Power input (DC12V)	-	X*
	CAN	-	X*

*: Audio and Vehicle boards will be prepared in one board configuration this time

Reference Hardware specification for delivery

This table is a response to RFQ Table2 (Hardware specifications).
 Response meet the requirement listed in “Hardware specifications”.

Function	Specification	
	AGL-RFQ	Response
SoC	R-Car H3 or equivalent	H3
ROM	32GB	64GB
RAM	4GB	8GB
Video Out	HDMI	HDMI
Video In	HDMI	HDMI
Audio Out	Analog	Analog
Audio In	Analog	Analog
WiFi	IEEE802.11b/11g/11n	IEEE802.11b/11g/11n
BT	Ver4.1 LE	Ver4.1 LE
GNSS	BeiDou, Galileo, GLONASS, GPS / QZSS	BeiDou, Galileo, GLONASS, GPS / QZSS
CAN	CAN-FD	CAN-FD
Ethernet	1000Base-T	1000Base-T
UART	I2C* ,LIN	I2C* ,LIN
USB	3.0Host/OTG/Device/3.1 PD(O.P)	3.0Host/Device
SD Card	SDHC/SDXC	SDHC/SDXC

Reference Hardware specification for delivery

This table is a response to RFQ Table3 (The type of the external connector).
Response meet the requirement listed in “The type of the external connector”.

Function	Connector type	Number	
		RFQ	Response
Video In	Full HDMI	2	2
Video Out	Full HDMI	2	2
Audio Out	Φ3.5 Stereo jack	1	1
Audio In	Φ3.5 Stereo jack	1	1
CAN	Should propose valid type of connector	2	2
Ethernet	RJ-45 (for development and debug)	1	1
UART	Should propose valid type of connector	2	1
USB	Type A (Host/OTG)	2	2
	Micro B (Device)	1	1
	USB C (optional)	1	0
SD Card	Micro SD	1	1
BT / WiFi antenna	Should propose valid type of connector	1-2	1-2
GNSS antenna	Should propose valid type of connector	1	1
Power	2.1mm standard DC jack	1	1

*1
*2

*1; LIN:1/RS485:1

*2; Type A supports only HOST