TRAVIS Series
Artificial Intelligence
Edge Computer

Embedded System with NVIDIA® Jetson™ TX2

Features

- GMSL camera input x 6
- Mini PCIe - WWAN
- DI x 4 / DO x 4 with isolation circuits
- GPS - optional
- CAN Bus

Datasheet v 1.1

WiBASE
Industrial Solutions Inc.

Specification

	TRAVIS – V	TRAVIS - S
System		
Module	NVIDIA Jetson TX2	NVIDIA Jetson TX2
CPU on Module	ARM Cortex-A57 (quad-core) @ 2GHz + NVIDIA Denver2 (dual-core) @ 2GHz	ARM Cortex-A57 (quad-core) @ 2GHz + NVIDIA Denver2 (dual-core) @ 2GHz
GPU on Module	256-CUDA core Pascal @ 1300MHz	256-CUDA core Pascal @ 1300MHz
DRAM on Module	8GB 128-bit LPDDR4	8GB 128-bit LPDDR4
Storage on Module	32GB eMMC	32GB eMMC
Storage		
Expansion Storage (Optional)	Support by M.2 SSD	Support by M.2 SSD
I/O		
SD Socket	1 x SD Socket	1 x SD Socket
GMSL Camera Input	Support 6 x GMSL(1080P) camera with audio in.	N/A
Display	1 x HDMI-out 1 x FPDLINK Display[1]-out (Optional)	1 x HDMI-out
Audio	1 x Line-in & 1 x MIC-in (3.5mm phone jack)	1 x Line-in & 1 x MIC-in (3.5mm phone jack)
USB	2 x USB3.0 2 x USB2.0 1 x Micro USB 2.0 (Reserve for SW update only)	2 x USB3.0 2 x USB2.0 1 x Micro USB 2.0 (Reserve for SW update only)
Ethernet	2 x GIGA LAN	2 x GIGA LAN
COM	2 x RS232 2 x RS422/RS485	2 x RS232 2 x RS422/RS485
DIO	DI x 4, DO x 4 With isolation circuits	DI x 4, DO x 4 With isolation circuits
Connection		
WWAN (Optional)	**For North America:** -LTE category 4, Max 150Mbps (DL) / 50Mbps (UL) -LTE FDD: B2/B4/B12 -WCDMA: B2/B4/B5 **For Europe:** -LTE category 4, Max 150Mbps (DL) / 50Mbps (UL) -LTE FDD: B1/B3/B5/B7/B8/B20 -WCDMA: B1/B5/B8 -GSM: B3/B8	**For North America:** -LTE category 4, Max 150Mbps (DL) / 50Mbps (UL) -LTE FDD: B2/B4/B12 -WCDMA: B2/B4/B5 **For Europe:** -LTE category 4, Max 150Mbps (DL) / 50Mbps (UL) -LTE FDD: B1/B3/B5/B7/B8/B20 -WCDMA: B1/B5/B8 -GSM: B3/B8
WLAN & BT (Default)	- 2x2 MIMO 802.11ac compliant (backwards compatible with legacy 802.11a/b/g/n) - Bluetooth 4.1 ready	- 2x2 MIMO 802.11ac compliant (backwards compatible with legacy 802.11a/b/g/n) - Bluetooth 4.1 ready

[1] FPDLINK Display are currently available with 4.3”, please contact sales for further information

	TRAVIS – V	TRAVIS - S
WLAN & BT (Optional)	- 2x2 MIMO 802.11ac compliant (backwards compatible with legacy 802.11a/b/g/n) - Bluetooth 4.2 - Adjustable country code / power table for optimal performance	- 2x2 MIMO 802.11ac compliant (backwards compatible with legacy 802.11a/b/g/n) - Bluetooth 4.2 - Adjustable country code / power table for optimal performance
SIM Socket	1 x SIM Socket (used by WWAN module)	1 x SIM Socket (used by WWAN module)
GPS (Optional)	- GNSS supported: BeiDou, Galileo, GLONASS, GPS / QZSS - Untethered Dead Reckoning (UDR) technology included	- GNSS supported: BeiDou, Galileo, GLONASS, GPS / QZSS - Untethered Dead Reckoning (UDR) technology included
CAN Bus	2 x CAN 2.0	2 x CAN 2.0
Power		
Fuse	1	N/A
Power Input	9V ~ 36V DC Power Input @25C	12V DC Power Input (ship with 60W Adaptor)
Input protection tolerance (OVP, OCP, UVP)	Within +/- 5%	Within +/- 5%
UPS	Support external battery	N/A
Environment		
Operating Temperature	-20° C ~ 60° C (Fanless) -20° C ~ 70° C (with Fan Module)	-20C to 50C
Mechanical		
Dimension	77(H) x 200(W)x 216mm(D) (Fanless)	77(H) x 200(W) x 216mm(D) (Fanless)

Verification		Standards
CE	RF	EN 301511 / EN 301908 / EN 300328 /EN 301893 /EN 303413
	EMC	EN 301489-1-17-24-19
		EN 55032/24
	Safety	EN 62368
	MPE	-------
FCC	RF	Part 15C
	EMC	Part 15B
E-Mark	R10	E13 * TRAVIS V only

Accessory

GMSL Camera

Lens		
Resolution		2Megapixel
Aperture		F/2.0
F.O.V.		1) 2.8mm: 120° ±5% (Horizontal) OR 2) 6mm: 54° ±5% (Horizontal)
Image Format		IMX290 is 1/2.8"
Image Sensor		
Chipset		1/2.8" Progressive CMOS For Automotive
Minimum Illumination	Color	0.1Lux
	B/W	0.05Lux
Dynamic Range		Up to 72 dB
ISP		
Chipset		ISP LSI For CMOS Image Sensor For Automotive
White Balance		Auto/ Manual (1800K - 10500K)
WDR		DOL+ATR
S/N Ratio		50dB (AGC OFF)
Serializes		
Transmission Distance		15M
Transmission Audio		I2S / Up to 48kHz Sample Rate
General		
Video Output		MIPI CSI-2 2 LANE YUV422 8 bit
Connector		Rosenberger HSD[4+2]
Audio Input Support		Built-in Mono Microphone x 1
Audio Effective Range		3 meters (Max.)
Power Input		DC 12V ±10% With HSD[4+2]
Power Consumption		4.2W (Max.)
Environment Temperature	Operation	-20~60 ° C
	Storage	-30~70 ° C
Dimensions		61mm(W) x 61mm(H) x 40mm(D)
Cable		
Cable Length		10M / 15M
Connector		Rosenberger HSD Mechanical Life Cycle: 20 times

Display

LCM & Touch	
LCD Type	4.3" TFT
Resolution	480 (RGB) x 272 dots
Display Mode	TN / Transmission
View Angle	Horizontal: 80°
(CR>10)	Vertical: 80°
Luminous Intensity	400 cd/m2 (min.)
Uniformity	80% (typ.)
Contrast Ratio (Center)	400 (min.)
Backlight Color	White
Touch Type	4-Wire Resistive
Touch Response Time	<= 10ms
General	
SerDes Solution	TI FPD-Link III
Transmission Distance	10 meter
Built-in Speaker	Mono, 2 Watt (max.)
Function keys	Power On&Off/Volume Up/Volume Down/ Brightness Up/Brightness Down/Key Backlight On&Off
I/O Connector	Rosenberger HSD 4+2
Power Input	DC 12V ±10% (supplied by system)
Operating Temperature	-20C to 60C
Dimensions (Draft ID)	122.5(W)*105.2(H)*29.2 mm(D)
Weight	TBD

**This spec will be finalized and confirmed after validation.

Camera/Display Cable

General	
Camera Cable	10m & 15m available
4.3” Display Cable	10m available
Rosenberger Cable	
Features	- Rosenberger HSD connector used - Shielded and impedance controlled - Suitable for high speed data application (frequency: DC to 2.0GHz) - Additional pins for camera power delivery