

TCU User Manual

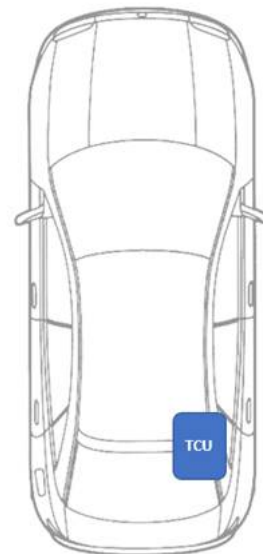
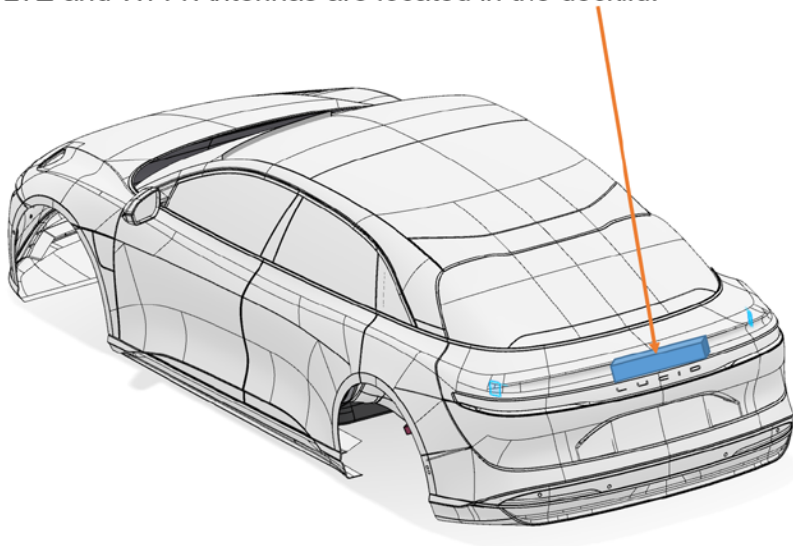
TCU (Telematics Control Unit) **P11-K290G0** is manufactured by **ASKEY Corp.** for **Lucid USA, Inc** (aka Lucid Motors) and provides wireless connectivity to LTE/UMTS and Wi-Fi networks for vehicle's Infotainment and Telematics systems. The device also provides location-based services and is capable to download OTA software updates for different functional units of the vehicle.

TCU is installed in the vehicle during manufacturing as a fully pre-configured device, which starts working as soon as power the power is turned on. The device is completely hidden from the vehicle user and does not require any additional configuration.

TCU is mounted in the rear right location of the vehicle and is connected to the vehicle's wiring harness (an assembly of electric cables used for transmission of electric signals and electric power in a vehicle). The device can be accessed for repair and maintenance purposes only by qualified technical service personnel.

TCU location in the vehicle is shown on the drawing below.

LTE and Wi-Fi Antennas are located in the decklid:



FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **22cm** between the radiator & your body.

For Outdoor access point operating in the band 5.15-5.25 GHz

Professional Installation instruction

1. **Professional installer:** this product is designed for specific application and needs to be installed by trained personnel. The general user shall not attempt to install or change the setting.
2. **External Antenna:** use only the antenna(s) that have been approved by the manufacturer. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power that may lead to the violation of FCC limit and is prohibited.

Warning: Please carefully select the installation position and ensure that the final output power does not exceed the limit set forth in relevant rules.

This radio transmitter FCC ID: 2AXZJ-CTX0710 has been approved by FCC to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Ant.	Brand	Model Name	Antenna Type	Connector
1	Amphenol	L: UDB332-04-000-C	FPC	FARKA
2	Amphenol	R: UDB332-04-100-C	FPC	FARKA
3	Amphenol	L :UDB331-04-000-C-SHT180	FPC	FARKA
4	Amphenol	R: UDB331-04-100-C-SHT180	FPC	FARKA

Ant.	Port	2.4G Gain (dBi)						Remark (Note. 1)
		2400	2420	2440	2460	2480	2500	
1	1	4.07	3.64	2.57	4.07	3.24	3.28	w/o cable
		-0.88	-1.31	-2.38	-0.88	-1.71	-1.67	with cable

Ant.	Port	5G Gain (dBi)						Remark (Note. 2)
		5150	5200	5250	5700	5750	5800	
1~2	1~2	4.04	4.05	3.53	3.52	3.62	4.16	w/o cable
		-3.35	-3.34	-3.86	-4.36	-4.26	-3.72	with cable

Ant.	Port	WWAN 2G/3G Gain (dBi)					Remark (Note. 3)
		GSM 850	PCS 1900	WCDMA Band 2	WCDMA Band 4	WCDMA Band 5	
3~4	1~2	5.41	4.47	4.47	4.2	5.41	w/o cable
		0.57	-0.37	-0.37	-0.64	0.57	with cable

Ant.	Port	WWAN 4G Gain (dBi)						Remark (Note. 3)
		LTE Band 2	LTE Band 4/66	LTE Band 5	LTE Band 7	LTE Band 12	LTE Band 13	
3~4	1~2	4.47	4.2	5.41	1.5	5.7	6.9	w/o cable
		-0.37	-0.64	0.57	-3.34	0.86	2.06	with cable

Note 1: WLAN 2.4G cable loss = 4.95 dB.

Note 2: WLAN 5GHz Band 1 cable loss = 7.39 dB, and 5GHz Band 4 cable loss = 7.88 dB.

Note 3: WWAN cable loss = 4.84 dB.

Note 4: The EUT has four antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

For 5GHz function:

For IEEE 802.11 a/n/ac mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For WWAN function (1TX/2RX):

Ant. 3 (port 1) could transmit, and Ant. 3 (port 1) and Ant. 4 (port 2) could receive simultaneously.