

NAVIGATION RADIO User Manual

Model Name : LANR21 / LANR22

1. Overview and Specifications

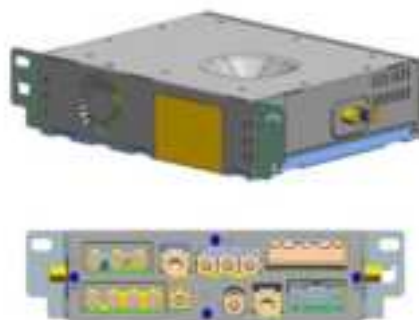
(1) Overview

- 1) The Infotainment system provides infotainment in a car, using the latest technology. See your dealer to have the system or software updated and upgraded.
- 2) The radio can be easily used by registering up to 36 AM, FM or DAB with the PRESET button.
- 3) The Infotainment system can play the USB storage device or iPhone products.
- 4) The Bluetooth phone connection function allows for the use of wireless hands-free Phone calls, as well as a phone music player.
In addition, the WiFi function is provided.

(2) Product Specifications

Item	Categories	Specifications
Specification	Product Name	RECEIVER-NAVIGATION RADIO
	Model	LANR21 LANR22
	Dimensions	Refer to image
	Weight	LANR21 : 0.9kg LANR22 : 0.885kg
	Power source	DC 12V
	Operational temperature range	-40 °C ~ 80 °C

Platform Overview



System	CPU	SA8150P
	RAM	LPDDR4x 8GB
	Storage	UFS 128GB
	OS	Android 10
	MICOM	Infineon
Audio /Radio	DSP	NXP MERCURY
Display	Interface	GMSL2 with Touch

Main Features

Broadcast

- Dual Tuner with TMC (RDS), DAB

Media

- USB

Connectivity

- Bluetooth ver5.0+EDR/LE, WiFi (IEEE 802.11 a/b/g/n/ac)
- CarPlay, Android Auto

In-Vehicle Network

- CAN

Ethernet Network

- CGW (Central GateWay)
- TCU (Telecommunication Control Unit)
- OMC (Occupant Monitoring Camera)

Rear View Camera (*Analog*)

- CVBS

Rear View Camera (Digital) / Around View Monitor

- GMSL1

AR Navigation Camera

- GMSL1

Audio

- Internal AMP or External AMP

Navigation

- Google Map

Platform Overview



System	CPU	SA6145P
	RAM	LPDDR4x 4GB
	Storage	<u>eMMC</u> 32GB
	OS	Android 10
	MICOM	Infineon
Audio /Radio	DSP	NXP MERCURY
Display	Interface	GMSL2 with Touch

Main Features

Broadcast

- Dual Tuner with TMC (RDS), DAB

Media

- USB

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In-Vehicle Network

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Ethernet Network

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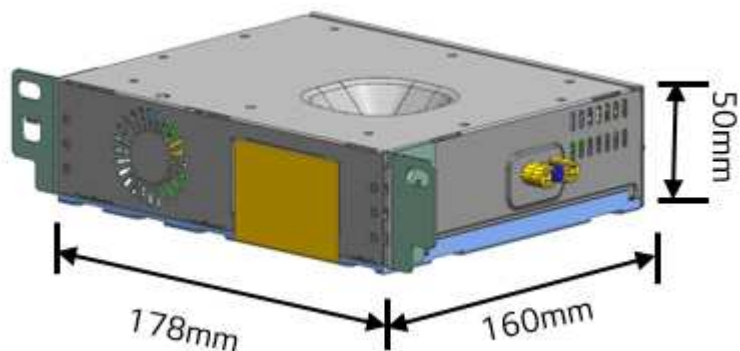
Rear View Camera (Analog)

- CVBS

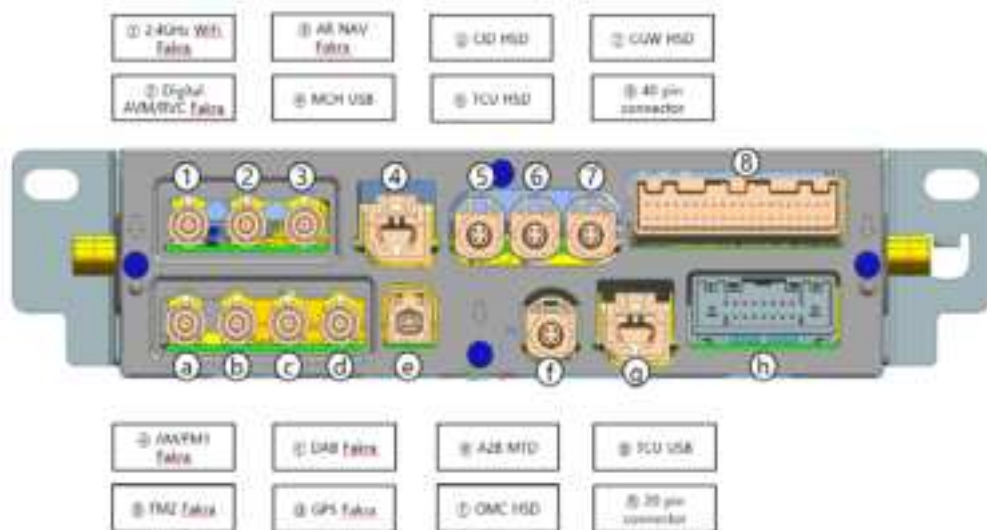
Audio

- Internal AMP

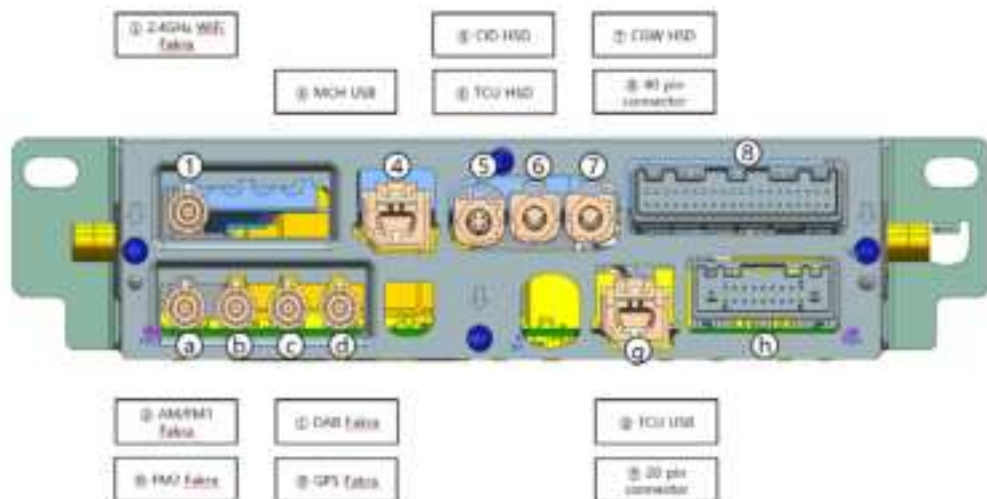
(3) Dimension & Rear connector information



LANR21



LANR22



(4) RF specifications

Radio

Item	Frequency range	Unit
FM	87.5 ~ 108.0	MHz
AM	522 ~ 1611 (MW) 149 ~ 283 (LW)	kHz
DAB	174.928 ~ 239.200	MHz

GNSS

Item	Frequency range	Unit
GPS	1575.42	MHz
GLONASS	1598 ~ 1610	MHz
GALILEO	1575.42	MHz

Bluetooth

Item	Specification	Unit
Frequency	2402 ~ 2480	MHz
Modulation Type	GFSK, $\pi/4$ DQPSK, 8 DPSK	
BT Power	1 (BT Class 2)	dBm
Data rate	1 ~ 3	Mbps
Channel spacing	1 ~ 2	MHz
BT version	Ver 5.0+EDR/LE	

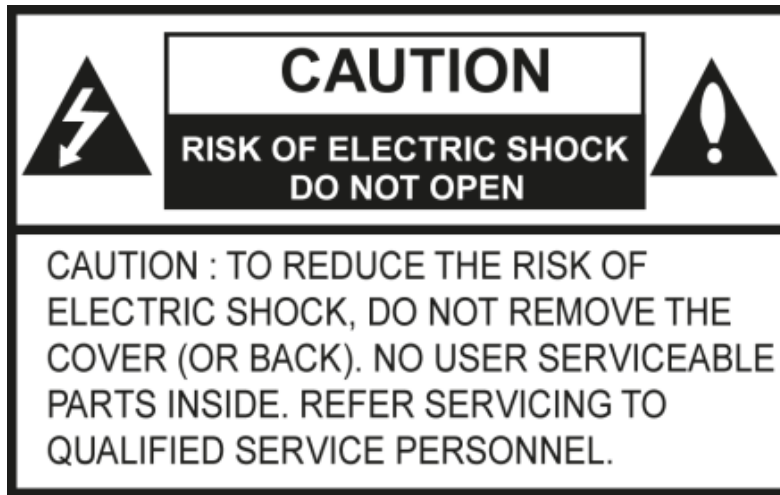
Wifi

Item				Specification	Unit
Standard				IEEE 802.11 a/b/g/n/ac	
Frequency	2.4G			2412 ~ 2472	MHz
	5G			5725 ~ 5875	MHz
Bandwidth				20 / 40 / 80	MHz
Data rate	2.4G	802.11 b	20M	1, 2, 5.5, 11	Mbps
		802.11 g	20M	6, 9, 12, 18, 24, 36, 48, 54	Mbps
		802.11 n	20M	7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2	Mbps
	5G	802.11 a	20M	6,9,12,18,24,36,48,54	Mbps
		802.11 n	20M	7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2	Mbps
		802.11 n	40M	15, 30, 45, 60, 90, 120, 135, 150	Mbps
		802.11 ac	20M	7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2, 86.7	Mbps
		802.11 ac	40M	15, 30, 45, 60, 90, 120, 135, 150, 180, 200	Mbps
		802.11 ac	80M	32.5, 65, 97.5, 130, 195, 260, 292.5, 325, 390, 433.3	Mbps
Modulation				DSSS, CCK, OFDM(64-QAM, 256-QAM)	
Mode				AP, Station	

Item		Max. RF Power	Unit
Power Setting	2.4 GHz	20	dBm
	5 GHz	14	

* Only CE Certified Country

2. Precautions



- 1) Always operate the vehicle in a safe manner. Do not become distracted by the vehicle while driving and always be fully aware of all driving conditions. Do not change settings or any functions. Pull over in a safe and legal manner before attempting such operations. To promote safety, certain functions are disabled unless the parking brake is on.
- 2) To reduce the risk of electric shock, do not remove the cover or back of this product. There are no user-serviceable parts inside. Refer servicing to qualified service personnel.
- 3) To reduce the risk of fire or electric shock, do not expose this product to dripping or splashing water, rain, or moisture.
- 4) When driving your vehicle, be sure to keep the volume of the unit low enough to allow you to hear sounds coming from the outside.
- 5) Do not drop it and avoid heavy impacts at anytime.
- 6) The driver should not watch the monitor while driving. If the driver watches the monitor while driving, it may lead to carelessness and cause an accident.

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, [LG Electronic Inc.] declares that IR12PT is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

<http://www.lg.com/global/support/cedoc/cedoc#>

The antenna(s) must be installed such that a minimum separation distance of at least 20 cm is maintained between the radiator (antenna) and all persons at all times. This device must not be collocated or operating in conjunction with any other antenna or transmitter.

Postal Address:

10, Magokjungang 10-ro, Gangseo-gu, Seoul, 07796, Korea

The use of the 5150 ~ 5350 MHz band is restricted to indoor use only. This restriction will be applied in all member states.

FCC Information

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 interface, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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 correct the interference by one or more of the following measures:

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

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

IMPORTANT NOTE:

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.