

User Manual

Model Name: WN9722NAX22-E7(AIOS6.5 Type-V)

Brand Name : Arcadyan

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1. SPECIFICATION

	HDMI	1.4	1
	USB	2.0	1
Supply Voltage	5V		

1-1 Basic Specification

2. Item	Contents				
Manufacture	Arcadyan				
Product Name	HEOS 6.5 Platform Module				
Chip	SOC		Vendor	Model name	
	CPU		Mediatek		
	2.4GHz MAC/BB/RF		Mediatek		
	2.4GHz PA(Tx)		Mediatek		
	2.4GHz LNA(Rx)		Mediatek		
	2.4GHz BPF(Rx)		2.4G/5G DIPLEXER		
	5GHz MAC/BB/RF		Mediatek		
	5GHz PA(Tx)		Mediatek		
	5GHz LNA(Rx)		Mediatek		
	5GHz BPF(Rx)		2.4G/5G DIPLEXER		
	PHY	WAN		None	
		LAN		Realtek	
OS					
FW	ODM		Arcadyan		
	FW spec				
Driver/Utility	Driver		Utility		
	ODM		Arcadyan		
Support Band	Refer wireless spec				
Interface	Item	Link Rate	Number of ports		
	LAN	10/100Mbps	1		

Power	9W (maximum)		
Weight	Under 78g		
Dimensions	87 x 74 x 1.6mm		
Design life time	5years at 25 degrees		
Made in	China		

2. Detail Specification

2-1 Product Specification

Items		Contents
CPU	Vendor	Mediatek
	Parts number	
	Operation	1.7GHz
RAM	Type	PCDDR3
	Width	16bit
	Operation Freq	1866MHz
	Capacity	512MB
eMMC	Type	eMMC
	I/O speed	5ns
	Capacity	8GB

2-2 WLAN Specification

Item	Specification	Remark
Chip		
Interface	SDIO	
Frequency	2400~2483.5MHz(FCC, CE, JP) 2471~2497MHz(JP) 5150~5250MHz(W52, U-NII-1, Band 1) 5250~5350MHz(W53, U-NII-2A, Band 2) 5470~5725MHz(W56, U-NII-2C, Band 3) 5725~5850MHz(W58, U-NII-3, Band 4) DFS support	
Data Rate	IEEE 802.11b: 11, 5.5, 2, 1Mbps IEEE 802.11a 54, 48, 36, 24, 18, 12, 9, 6Mbps IEEE 802.11n HT20 Up to 144Mbps IEEE 802.11n HT40 Up to 300Mbps IEEE 802.11ac VHT80 Up to 866.7Mbps IEEE 802.11ax HE80 Up to 1200Mbps	
MIMO	2T2R	
Antenna Port	U.FL compatible connector	

2-3 Bluetooth Specification

Item	Specification	Remark
Chip		
Interface	SDIO	
Operating Frequency	2.4 - 2.4835 GHz	
Modulation	GFSK 250kHz Adaptive Frequency Hopping, 24bit CRC 128bit AES CCM	

Channel Spacing	1MHz	
Receive Sensitivity	-86dBm at 0.1% BER	
Antenna	External U.FL connector Impedance: 50 Ohm	

FCC Statement

Federal Communication Commission 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 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.

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

This device is restricted for indoor use.

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 20cm between the radiator & your body.

This module is intended for OEM integrator only. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.

Additional testing and certification may be necessary when multiple modules are used.

OEM integrators are responsible for ensuring that the end-user has no manual instructions to remove or install module

The module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at

least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

If the labelling area is small than the palm of the hand, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: RAXAIOS65V ".

If the labelling area is larger than the palm of the hand, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

Antenna Information

Ant.	Port		Brand	Model Name	Type	Connector	Gain(dBi)		Cable Loss (dBi)		Net Gain (dBi)		Cable Length (mm)
	WLAN 2.4GHz /BT	WLAN 5GHz					WLAN 2.4GHz /BT	WLAN 5GHz	WLAN 2.4GHz /BT	WLAN 5GHz			
1	1/2	-	Airgain	N2420DG3-T2L-PK1-G30U	Dipole	I-PEX	3.1	2.8	0.11	0.15	3	2.65	30
2	-	-	Airgain	N2420DG3-T2L-PK1-G100U	Dipole	I-PEX	3.1	2.8	0.35	0.49	2.75	2.31	100
3	-	-	Airgain	N2420DG3-T2L-PK1-G600U	Dipole	I-PEX	3.1	2.8	2.10	2.94	1	-0.14	600
4	-	-	Airgain	N2420DG3-T2L-PK1-G400U	Dipole	I-PEX	3.1	2.8	1.40	1.96	1.7	0.84	400
5	-	-	Airgain	N2420DG3-T2L-PK1-G300U	Dipole	I-PEX	3.1	2.8	1.05	1.47	2.05	1.33	300
6	-	1/2	Airgain	N2425D-T2L-PK1-G30U	PIFA	I-PEX	1.9	3.5	0.11	0.15	1.8	3.35	30
7	-	-	Airgain	N2425D-T2R-PK1-G150U	PIFA	I-PEX	1.9	3.5	0.53	0.74	1.38	2.77	150
8	-	-	Airgain	N2425D-T2R-PK1-G30U	PIFA	I-PEX	1.9	3.5	0.11	0.15	1.80	3.35	30
9	-	-	Airgain	N2425D-T2R-PK1-G500U	PIFA	I-PEX	1.9	3.5	1.75	2.45	0.15	1.05	500
10	-	-	LITE	120300058800J (503021-0123-0BC) Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 450mm cable				2.55	2.35	450
11	-	-	LITE	120300055601J (501301-0019-1BC) +120700034000J (510411-5210-24C) (300mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 300mm cable				2.72	2.97	300
12	-	-	LITE	120300055600J (501301-0019-1BC) +120700034000J (510411-5210-24C) (300mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 300mm cable				2.72	2.97	300
13	-	-	LITE	120300055601J (501301-0019-1BC) +120700042100J (510411-5300-23C) (500mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 500mm cable				1.85	2.09	500
14	-	-	LITE	120300055600J (501301-0019-1BC) +120700042100J (510411-5300-23C) (500mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 500mm cable				1.85	2.09	500
15	-	1/2	LITE	503021-0003-0BC (AIO55 only) Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 200mm cable				2.52	3.04	200
16	-	-	LITE	503021-0013-0BC Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 500mm cable				1.74	1.68	500
17	-	-	LITE	120300055601J (501301-0019-1BC) +510411-5310-23C (200mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 200mm cable				2.64	2.86	200
18	-	-	LITE	503021-0113-0BC (AIO54 only) Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 300mm cable				2.35	2.44	300
19	-	-	Airgain	N2420DG3-T2L-PK1-G200U	Dipole	I-PEX	3.1	2.8	0.62	0.98	2.48	1.82	200
20	-	-	Airgain	N2420DG3-T2L-PK1-G520U	Dipole	I-PEX	3.1	2.8	1.61	2.55	1.49	0.25	520

Ant.	Port		Brand	Model Name	Type	Connector	Gain(dBi)		Cable Loss (dBi)		Net Gain (dBi)		Cable Length (mm)
	WLAN 2.4GHz /BT	WLAN 5GHz					WLAN 2.4GHz /BT	WLAN 5GHz	WLAN 2.4GHz /BT	WLAN 5GHz	WLAN 2.4GHz /BT	WLAN 5GHz	
21	1/2	-	KWANG HYUN AIRTECH	KH-WFDI-AN001	PIFA	I-PEX	4	2.8	0.6	1.2	3.4	1.6	160
22	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN002	PIFA	I-PEX	4	2.8	0.7	1.3	3.3	1.5	210
23	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN004	PIFA	I-PEX	3.6	2.1	1.5	2.7	2.1	-0.6	470
24	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN005	PIFA	I-PEX	3.5	2.1	1.2	1.9	2.3	0.2	400
25	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN006	PIFA	I-PEX	3.5	2.1	2.3	4	1.2	-1.9	810
26	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN007	PIFA	I-PEX	2.6	2.1	1.2	1.9	1.4	0.2	384
27	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN008	PIFA	I-PEX	3.5	2.1	1.2	1.9	2.3	0.2	400

IC Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Dynamic Frequency Selection (DFS) for devices operating in the bands 5250- 5350 MHz, 5470-5600 MHz and 5650-5725 MHz.

Sélection dynamique de fréquences (DFS) pour les dispositifs fonctionnant dans les bandes 5250-5350 MHz, 5470-5600 MHz et 5650-5725 MHz.

The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

The maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit.

le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5250-5350 MHz et 5470-5725 MHz doit se conformer à la limite de p.i.r.e.

The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate.

le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5725-5850 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

For indoor use only.

Pour une utilisation en intérieur uniquement.

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

For product available in the USA/Canada market, only channel 1~11 can be operated.

Selection of other channels is not possible.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.

This radio transmitter (IC: 4711A-AIOS65V) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 4711A-AIOS65V) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.

Additional testing and certification may be necessary when multiple modules are used.

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

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the IC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly

approved by the manufacturer could void the user's authority to operate this equipment. 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains IC: 4711A-AIOS65V ".

The Host Model Number (HMN) must be indicated at any location on the exterior of the end product or product packaging or product literature which shall be available with the end product or online.

Antenna Information

Ant.	Port		Brand	Model Name	Type	Connector	Gain(dBi)		Cable Loss (dBi)		Net Gain (dBi)		Cable Length (mm)
	WLAN 2.4GHz /BT	WLAN 5GHz					WLAN 2.4GHz /BT	WLAN 5GHz	WLAN 2.4GHz /BT	WLAN 5GHz			
1	1/2	-	Airgain	N2420DG3-T2L-PK1-G30U	Dipole	I-PEX	3.1	2.8	0.11	0.15	3	2.65	30
2	-	-	Airgain	N2420DG3-T2L-PK1-G100U	Dipole	I-PEX	3.1	2.8	0.35	0.49	2.75	2.31	100
3	-	-	Airgain	N2420DG3-T2L-PK1-G600U	Dipole	I-PEX	3.1	2.8	2.10	2.94	1	-0.14	600
4	-	-	Airgain	N2420DG3-T2L-PK1-G400U	Dipole	I-PEX	3.1	2.8	1.40	1.96	1.7	0.84	400
5	-	-	Airgain	N2420DG3-T2L-PK1-G300U	Dipole	I-PEX	3.1	2.8	1.05	1.47	2.05	1.33	300
6	-	1/2	Airgain	N2425D-T2L-PK1-G30U	PIFA	I-PEX	1.9	3.5	0.11	0.15	1.8	3.35	30
7	-	-	Airgain	N2425D-T2R-PK1-G150U	PIFA	I-PEX	1.9	3.5	0.53	0.74	1.38	2.77	150
8	-	-	Airgain	N2425D-T2R-PK1-G30U	PIFA	I-PEX	1.9	3.5	0.11	0.15	1.80	3.35	30
9	-	-	Airgain	N2425D-T2R-PK1-G500U	PIFA	I-PEX	1.9	3.5	1.75	2.45	0.15	1.05	500
10	-	-	LITE	120300058800J (503021-0123-0BC) Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 450mm cable				2.55	2.35	450
11	-	-	LITE	120300055601J (501301-0019-1BC) +120700034000J (510411-5210-24C) (300mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 300mm cable				2.72	2.97	300
12	-	-	LITE	120300055600J (501301-0019-1BC) +120700034000J (510411-5210-24C) (300mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 300mm cable				2.72	2.97	300
13	-	-	LITE	120300055601J (501301-0019-1BC) +120700042100J (510411-5300-23C) (500mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 500mm cable				1.85	2.09	500
14	-	-	LITE	120300055600J (501301-0019-1BC) +120700042100J (510411-5300-23C) (500mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 500mm cable				1.85	2.09	500
15	-	1/2	LITE	503021-0003-0BC (AIOS5 only) Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 200mm cable				2.52	3.04	200
16	-	-	LITE	503021-0013-0BC Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 500mm cable				1.74	1.68	500
17	-	-	LITE	120300055601J (501301-0019-1BC) +510411-5310-23C (200mm Gray Cable)	Dipole	I-PEX	Dipole antenna with 200mm cable				2.64	2.86	200
18	-	-	LITE	503021-0113-0BC (AIOS4 only) Dual Band Fixed Rod Antenna	Dipole	I-PEX	Fixed Dipole antenna with 300mm cable				2.35	2.44	300
19	-	-	Airgain	N2420DG3-T2L-PK1-G200U	Dipole	I-PEX	3.1	2.8	0.62	0.98	2.48	1.82	200
20	-	-	Airgain	N2420DG3-T2L-PK1-G520U	Dipole	I-PEX	3.1	2.8	1.61	2.55	1.49	0.25	520

Ant.	Port		Brand	Model Name	Type	Connector	Gain(dBi)		Cable Loss (dBi)		Net Gain (dBi)		Cable Length (mm)
	WLAN 2.4GHz /BT	WLAN 5GHz					WLAN 2.4GHz /BT	WLAN 5GHz	WLAN 2.4GHz /BT	WLAN 5GHz	WLAN 2.4GHz /BT	WLAN 5GHz	
21	1/2	-	KWANG HYUN AIRTECH	KH-WFDI-AN001	PIFA	I-PEX	4	2.8	0.6	1.2	3.4	1.6	160
22	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN002	PIFA	I-PEX	4	2.8	0.7	1.3	3.3	1.5	210
23	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN004	PIFA	I-PEX	3.6	2.1	1.5	2.7	2.1	-0.6	470
24	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN005	PIFA	I-PEX	3.5	2.1	1.2	1.9	2.3	0.2	400
25	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN006	PIFA	I-PEX	3.5	2.1	2.3	4	1.2	-1.9	810
26	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN007	PIFA	I-PEX	2.6	2.1	1.2	1.9	1.4	0.2	384
27	-	-	KWANG HYUN AIRTECH	KH-WFDI-AN008	PIFA	I-PEX	3.5	2.1	1.2	1.9	2.3	0.2	400

Telec Statement

5GHz band (W52, W53): Indoor use only

CE Statement

For MPE Statement – Mobile device

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

All operational modes:

2.4GHz: 802.11b, 802.11g, 802.11n (HT20), 802.11n (HT40) , 802.11n (VHT20), 802.11n (VHT40), ,802.11ax (HEW20),802.11ax (HEW40), Bluetooth(BR/EDR, LE),
5GHz: 802.11a, 802.11n (HT20), 802.11n (HT40), 802.11ac (VHT20), 802.11ac (VHT40), 802.11ac (VHT80) ,802.11ax (HEW80), 802.11ax(HEW20),802.11ax (HEW40)

The frequency and the maximum transmitted power in EU are listed below:

2412-2472MHz: 19.98dBm

2402-2480MHz (BR/EDR): 9.83 dBm

2402-2480MHz (LE): 9.83 dBm

5180-5240MHz: 22.98 dBm

5260-5320MHz: 19.97 dBm

5500-5700MHz: 19.88 dBm

5745-5825 MHz: 13.90 dBm

	AT	BE	BG	HR	CY	CZ	DK
	EE	FI	FR	DE	EL	HU	IE
	IT	LV	LT	LU	MT	NL	PL
	PT	RO	SK	SI	ES	SE	UK(NI)

WLAN: restricted to indoor use only when operating in 5150-5350 MHz band.