

**OUTDOOR Wi-Fi Access Point + Mesh**

**VVIA<sup>1700</sup>**

**DATA SHEET**





## 'Wireless AP' and 'MESH' are integrated

NEXUSTECH is professional manufacturer of Wi-Fi Access Point and Mesh wireless communication equipment for outdoor. VVIA is an all-in-one product that integrates 'wireless AP' and 'MESH', it can perform AP function as well as mesh router at the same time. One of the most special technologies is the use of Multi Hop Optimization. To improve 3HOP performance, NEXUSTECH uses three radio channels (CHs), each processed by a processor.

We use integrated L2 switching and three independent RF modules to improve efficiency and connect. Second, Openwrt which provides many of the features found in advanced devices with more than 3,000 application packages. This makes it an ideal platform for IoT Gateways or Smart City Wi-Fi infrastructures. Finally, it has a competitive price 60% of major global brands.



### Key features of Outdoor Wireless Access Points: VVIA1700



AP + Mesh  
All-in-one



Multi-HOP  
optimization



Use 2.4Ghz and  
5Ghz frequencies



Customizing  
Service



Convenient AP  
management  
with wireless console



Competitive  
Cost/Price



Using  
openWRT



LED lights for remote  
monitoring



## Why you have to choose VVIA1700?

- **Highest-Performing and designed for the harshest Outdoor Wireless AP**

In the next few years, demand of using Internet will grow rapidly. Installation of outdoor Wi-Fi equipment is important to support build smart cities and travel industry. Outdoor Wi-Fi equipment can be installed in big area. The VVIA1700 outdoor access point is suitable for both public enterprise and carrier-class network operators looking to extend Wi-Fi coverage outdoors. It offers proactive and highest-performing outdoor AP and also supports Wi-Fi standard, 802.11ac Wave 2, along with data connection speeds up to 1.7 Gbps.

VVIA1700 AP supports 4x4 Multi-user, Multiple-Input and Multiple-Output (MU-MIMO) technology and 6 spatial streams (6SS) with Multi Hop (3-HOP) for optimum performance.

Our product of provided 1.7 Gbps was released in Korea at the First time. The VVIA1700 outdoor Wi-Fi access point provides high quality of performance throughput over a larger with more pervasive coverage. The recommended number of concurrent users is 512 per Unit based on average data usage with High Speed (up to 1.7Gbps) in the place where many users in close proximity generate RF interference that needs to be managed.

Here is our Major Markets of VVIA1700 as below:

\* Enterprises, Military base, Hospital/Forest, Smart City-farm, Large Area, like industrial complex.

- **Special and Unique Benefits of VVIA1700**

The NEXUSTECH VVIA1700 is integrated with 'Outdoor Wireless AP' and 'Mesh' **All-In-One** product.

And, VVIA1700 meets the customer's needs of its product by providing **Customized-Service!**

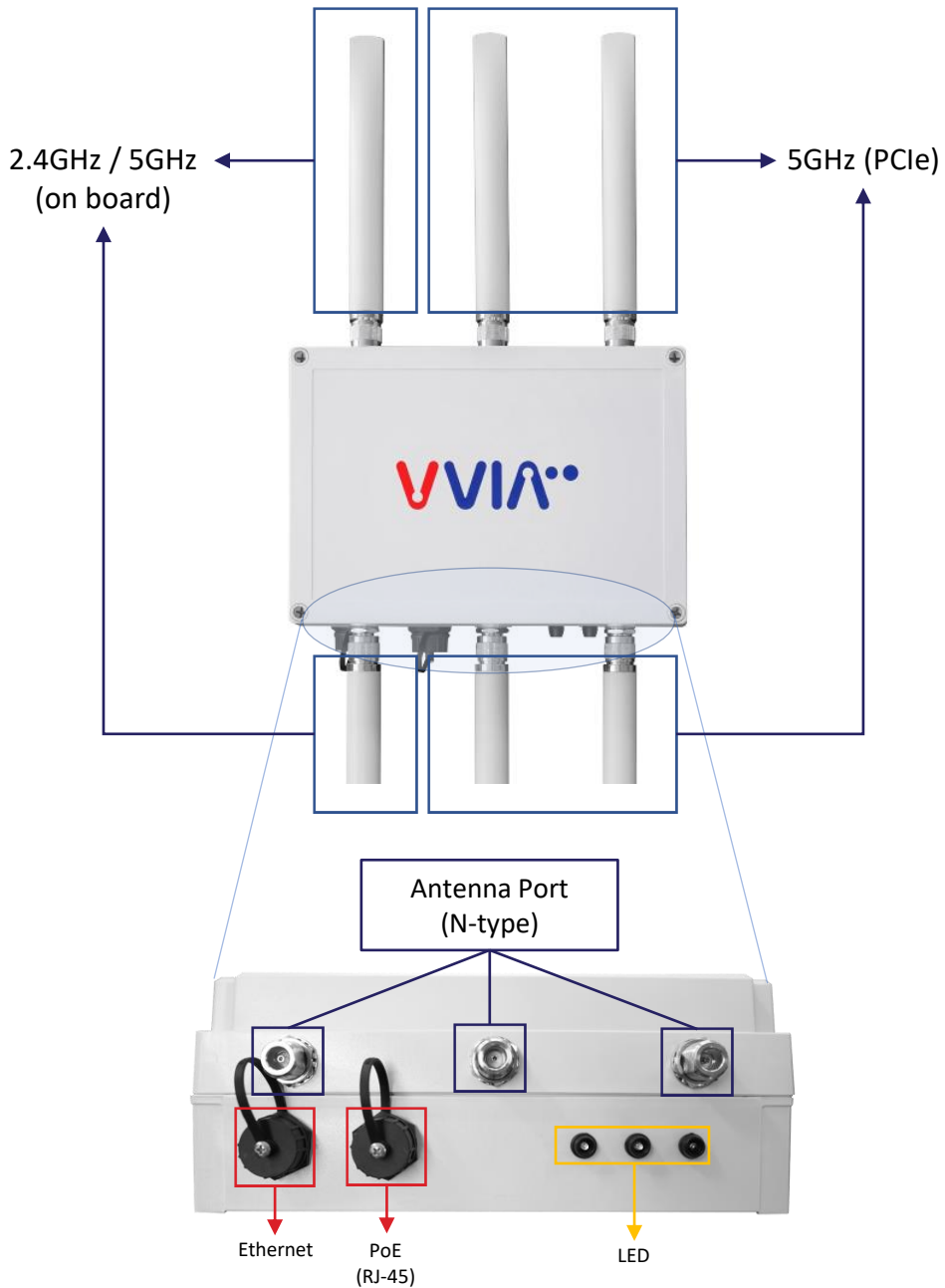
One of the most special Technology is using **Multi Hop Optimization**. To improve 3-HOP performance, we use 3 wireless channels(CH), processing by each processor to improve efficiency and Integrated type L2 switching for connecting three independent RF modules.

Second, The VVIA1700 **has 4 radios** Wireless 1 (2.4G), Wireless 2/3 (5G), Wireless Console more detailed information is below of the table and radiates 2.4GHz and 5GHz simultaneously at 360 degrees.

Third, The VVIA1700 uses open source firmware **Openwrt** which provides lots of capabilities found in high-end devices with more than 3000 application packages, So It is ideal platform to be IoT Gateway or for Smart City Wi-Fi infrastructure

Last is, **Competitive price** 60% of major global brand!

# VVIA1700 Configuration



# SPECIFICATION



Item	Specification
<b>Product</b>	<p><b>NEXUSTECH VVIA1700 (External Antenna, PoE Power Model)</b></p> <p>Customers are responsible for verifying approval for use in their individual countries.</p> <ul style="list-style-type: none"> <li>- Not all models available for all regulatory domains.</li> <li>- Not all regulatory domains have been approved.</li> </ul>
<b>802.11n capabilities</b>	<ul style="list-style-type: none"> <li>- 2x2 MIMO for Radio 0-Maximal ratio combining (MRC)</li> <li>- 802.11n and 802.11a/g</li> <li>- 20 and 40MHz channels</li> <li>- PHY data rates up to 400 Mbps (40 MHz with 5 GHz)</li> <li>- Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> <li>- support DFS</li> </ul>
<b>802.11ac Wave 2 capabilities</b>	<ul style="list-style-type: none"> <li>- 4x4 MIMO for Radio 2</li> <li>- Maximum Ratio Combining (MRC)</li> <li>- 802.11ac Beamforming</li> <li>- 20, 40, 80 and 80+80MHz channels</li> <li>- PHY data rates up to 1.7 Gbps (80 MHz with 5 GHz)</li> <li>- Packet aggregation: AMPDU (Tx/Rx), A-MSDU (Tx/Rx)</li> <li>- support DFS</li> </ul>
<b>Radio Frequency</b>	<ul style="list-style-type: none"> <li>- Wireless 1 (2.4G) : IEEE 802.11a/b/g/n 2x2 MIMO Max. 400Mbps,23dBm</li> <li>- Wireless 2 (5G) : IEEE 802.11a/n/ac 2x2 MIMO Max. 867Mbps,23dBm</li> <li>- Wireless 3 (5G) : IEEE 802.11a/n/ac 4x4 MIMO Max. 1.7Gbps,20dBm</li> <li>- Wireless Console : IEEE802.11b/g/n 1x1 (2.4GHz), Maximum 72Mbps</li> </ul> <p>* Wireless 3 can be changed to 2.4G according to customer needs. (support DFS)</p>

# SPECIFICATION



Item	Specification
<b>Rx Power</b>	<ul style="list-style-type: none"> <li>- Wireless 1 (2.4G) : -92dBm@MCS0, -71dBm@MCS7</li> <li>- Wireless 2 (5G) : -86dBm@MCS0, -66dBm@MCS9</li> <li>- Wireless 3 (5G) : -88dBm@MCS0, -62dBm@MCS9</li> </ul>
<b>Tx Power</b>	<ul style="list-style-type: none"> <li>- Wireless 1 (2.4G) : 26dBm @ MCS0, 21dBm @MCS7</li> <li>- Wireless 2 (5G) : 25dBm @MCS0, 19dBm @MCS9</li> <li>- Wireless 3 (5G) : 26dBm @ MCS0, 21dBm @MCS9</li> </ul>
<b>BandWidth</b>	<ul style="list-style-type: none"> <li>- 2412-2472MHz: 20/40/80MHz</li> <li>- 5180-5825MHz: 20/40/80/80+80MHz</li> </ul>
<b>Coverage</b>	<ul style="list-style-type: none"> <li>- 500M for diameter</li> </ul>
<b>Controller</b>	<ul style="list-style-type: none"> <li>- OpenWRT <i>(configurable and free without any license requirements)</i></li> </ul>
<b>Modulation</b>	<ul style="list-style-type: none"> <li>- OFDM(BPSK, QPSK, 16QAM, 64QAM, 256QAM)</li> </ul>
<b>Antenna Port</b>	<ul style="list-style-type: none"> <li>- Wireless 1/2 (2.4G/5G) : N-type X 2</li> <li>- Wireless 3 (5G) : N-type X 4</li> </ul>
<b>Compliance</b>	<ul style="list-style-type: none"> <li>- Korea : KC (Radio Approvals)</li> <li>- Vietnam: MIC / CR/VNTA Type Approval Certificate (Radio Approvals) Security, Safety</li> </ul>
<b>Configuration Options</b>	Flexible deployment configurations include: <ul style="list-style-type: none"> <li>- Standalone</li> <li>- Mesh</li> <li>- Point-to-point or point-to-multipoint campus bridge</li> </ul>

Note: The maximum power setting will vary by channel and according to individual country regulations.

# SPECIFICATION



Item	Specification
<b>Interfaces</b>	<ul style="list-style-type: none"> <li>- 2 x LAN port 10/100/1000 BASE-T Ethernet (RJ-45) (one has PoE PD)</li> <li>- Management console port (RJ-45)</li> <li>- Three High Bright color LEDs (POWER, LAN, WIFI)</li> <li>- Reset button (internal)</li> <li>- USB 3.0 port</li> </ul>
<b>CPU</b>	<ul style="list-style-type: none"> <li>- Qualcomm Atheros IPQ4019 Quad-core ARM Cortex-A7 710MHz</li> <li>- Memory Type : DDR3L / RAM : 1GB RAM</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>- AC adapter input : 100~230V</li> <li>- IEEE 802.3af (48V) / IEEE 802.3at (56V) and Passive PoE 36V to 56V DC, Supply PSE for pass-through (IEEE 802.3at) (DC12V / 2A)</li> <li>* Option : PoE Injector</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>- Security Features: Qualcomm® Trusted Execution Environment, Crypto Engine, Secure Boot</li> <li>- Wi-Fi Security: 802.11i security, AES-CCMP, AES-GCMP, PRNG, TKIP, WAPI, WEP, WPA, WPA2, WPS</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>- Telnet, WEB, SNMP, Find IP, Wired/Wireless Console</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>- Operating temperature and Humidity: - 20 to 70°C / 5% to 95%</li> <li>- Storage temperature and Humidity : - 40 to 90°C / Max. 90%</li> <li>* Non-condensing</li> </ul>
<b>Power Consumption</b>	max. 12W
<b>Environmental Ratings</b>	IP67
<b>Dimensions &amp; Case Material</b>	250×175×100mm(W×D×H) Reinforced plastics (PC)
<b>Weight</b>	1.6Kg (without Bracket)

## RF Performance Table for 2.4GHz

	Data Rate	TX Power (per chain)	RX Power (2 chain)	Tolerance		Data Rate	RX Specification Sensitivity	Tolerance
2.4 GHz 802.11b	1Mbps	23dBm	26dBm	±2dBm	2.4 GHz 802.11b	1Mbps	-96dBm	±2dBm
	2Mbps	23dBm	26dBm	±2dBm		2Mbps	-94dBm	±2dBm
	5.5Mbps	23dBm	26dBm	±2dBm		5.5Mbps	-92dBm	±2dBm
	11Mbps	23dBm	26dBm	±2dBm		11Mbps	-90dBm	±2dBm
2.4 GHz 802.11g	6Mbps	23dBm	26dBm	±2dBm	2.4 GHz 802.11g	6Mbps	-96dBm	±2dBm
	9Mbps	23dBm	26dBm	±2dBm		9Mbps	-96dBm	±2dBm
	12Mbps	23dBm	26dBm	±2dBm		12Mbps	-94dBm	±2dBm
	18Mbps	23dBm	26dBm	±2dBm		18Mbps	-90dBm	±2dBm
	24Mbps	23dBm	26dBm	±2dBm		24Mbps	-87dBm	±2dBm
	36Mbps	22dBm	25dBm	±2dBm		36Mbps	-85dBm	±2dBm
	48Mbps	20dBm	23dBm	±2dBm		48Mbps	-81dBm	±2dBm
	54Mbps	19dBm	22dBm	±2dBm		54Mbps	-78dBm	±2dBm
2.4 GHz 802.11n HT20	MCS 0	23dBm	26dBm	±2dBm	2.4 GHz 802.11n HT20	MCS 0	-94dBm	±2dBm
	MCS 1	23dBm	26dBm	±2dBm		MCS 1	-93dBm	±2dBm
	MCS 2	23dBm	26dBm	±2dBm		MCS 2	-90dBm	±2dBm
	MCS 3	23dBm	26dBm	±2dBm		MCS 3	-87dBm	±2dBm
	MCS 4	22dBm	25dBm	±2dBm		MCS 4	-84dBm	±2dBm
	MCS 5	20dBm	23dBm	±2dBm		MCS 5	-81dBm	±2dBm
	MCS 6	19dBm	21dBm	±2dBm		MCS 6	-77dBm	±2dBm
	MCS 7	18dBm	20dBm	±2dBm		MCS 7	-74dBm	±2dBm
2.4 GHz 802.11n HT20	MCS 0	23dBm	26dBm	±2dBm	2.4 GHz 802.11n HT20	MCS 0	-92dBm	±2dBm
	MCS 1	23dBm	26dBm	±2dBm		MCS 1	-89dBm	±2dBm
	MCS 2	23dBm	26dBm	±2dBm		MCS 2	-86dBm	±2dBm
	MCS 3	23dBm	26dBm	±2dBm		MCS 3	-84dBm	±2dBm
	MCS 4	22dBm	25dBm	±2dBm		MCS 4	-79dBm	±2dBm
	MCS 5	20dBm	23dBm	±2dBm		MCS 5	-75dBm	±2dBm
	MCS 6	19dBm	22dBm	±2dBm		MCS 6	-72dBm	±2dBm
	MCS 7	18dBm	21dBm	±2dBm		MCS 7	-71dBm	±2dBm

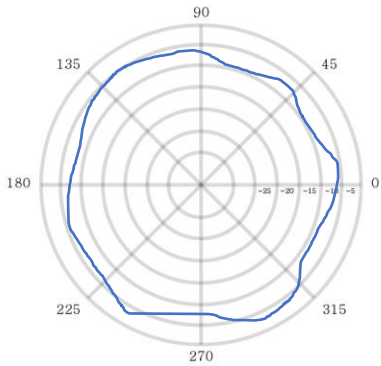


## RF Performance Table for 5GHz

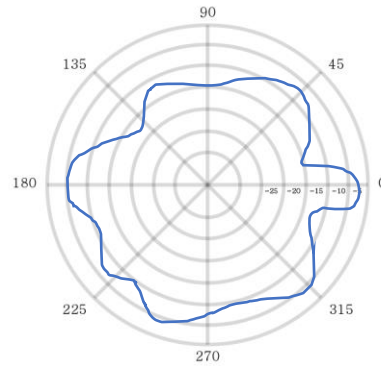
	Data Rate	TX Power (per chain)	RX Power (2 chain)	Tolerance		Data Rate	RX Specification Sensitivity	Tolerance
5 GHz 802.11a	6Mbps	23dBm	26dBm	±2dBm	5 GHz 802.11a	6Mbps	-93dBm	±2dBm
	9Mbps	23dBm	26dBm	±2dBm		9Mbps	-92dBm	±2dBm
	12Mbps	23dBm	26dBm	±2dBm		12Mbps	-91dBm	±2dBm
	18Mbps	23dBm	26dBm	±2dBm		18Mbps	-88dBm	±2dBm
	24Mbps	23dBm	26dBm	±2dBm		24Mbps	-87dBm	±2dBm
	36Mbps	23dBm	26dBm	±2dBm		36Mbps	-84dBm	±2dBm
	48Mbps	22dBm	25dBm	±2dBm		48Mbps	-81dBm	±2dBm
	54Mbps	20dBm	23dBm	±2dBm		54Mbps	-79dBm	±2dBm
5 GHz 802.11n/ac HT20	MCS 0	23dBm	26dBm	±2dBm	5 GHz 802.11n/ac HT20	MCS 0	-91dBm	±2dBm
	MCS 1	23dBm	25dBm	±2dBm		MCS 1	-90dBm	±2dBm
	MCS 2	23dBm	23dBm	±2dBm		MCS 2	-88dBm	±2dBm
	MCS 3	23dBm	22dBm	±2dBm		MCS 3	-86dBm	±2dBm
	MCS 4	23dBm	26dBm	±2dBm		MCS 4	-82dBm	±2dBm
	MCS 5	22dBm	26dBm	±2dBm		MCS 5	-79dBm	±2dBm
	MCS 6	20dBm	23dBm	±2dBm		MCS 6	-76dBm	±2dBm
	MCS 7	19dBm	22dBm	±2dBm		MCS 7	-73dBm	±2dBm
5 GHz 802.11n/ac HT40	MCS 8	18dBm	21dBm	±2dBm	5 GHz 802.11n/ac HT40	MCS 8	-70dBm	±2dBm
	MCS 0	23dBm	26dBm	±2dBm		MCS 0	-92dBm	±2dBm
	MCS 1	23dBm	26dBm	±2dBm		MCS 1	-90dBm	±2dBm
	MCS 2	23dBm	26dBm	±2dBm		MCS 2	-88dBm	±2dBm
	MCS 3	23dBm	26dBm	±2dBm		MCS 3	-86dBm	±2dBm
	MCS 4	23dBm	26dBm	±2dBm		MCS 4	-85dBm	±2dBm
	MCS 5	23dBm	26dBm	±2dBm		MCS 5	-83dBm	±2dBm
	MCS 6	20dBm	23dBm	±2dBm		MCS 6	-79dBm	±2dBm
	MCS 7	19dBm	22dBm	±2dBm		MCS 7	-75dBm	±2dBm
	MCS 8	18dBm	21dBm	±2dBm		MCS 8	-73dBm	±2dBm
5 GHz 802.11ac HT80	MCS 9	17dBm	20dBm	±2dBm	5 GHz 802.11ac HT80	MCS 9	-70dBm	±2dBm
	MCS 0	22dBm	25dBm	±2dBm		MCS 0	-86dBm	±2dBm
	MCS 1	22dBm	25dBm	±2dBm		MCS 1	-85dBm	±2dBm
	MCS 2	22dBm	25dBm	±2dBm		MCS 2	-83dBm	±2dBm
	MCS 3	22dBm	25dBm	±2dBm		MCS 3	-79dBm	±2dBm
	MCS 4	22dBm	24dBm	±2dBm		MCS 4	-76dBm	±2dBm
	MCS 5	21dBm	23dBm	±2dBm		MCS 5	-73dBm	±2dBm
	MCS 6	20dBm	22dBm	±2dBm		MCS 6	-71dBm	±2dBm
	MCS 7	18dBm	21dBm	±2dBm		MCS 7	-69dBm	±2dBm
	MCS 8	17dBm	20dBm	±2dBm		MCS 8	-67dBm	±2dBm
MCS 9	16dBm	19dBm	±2dBm	MCS 9	-66dBm	±2dBm		

# ANTENNA PATTERNS

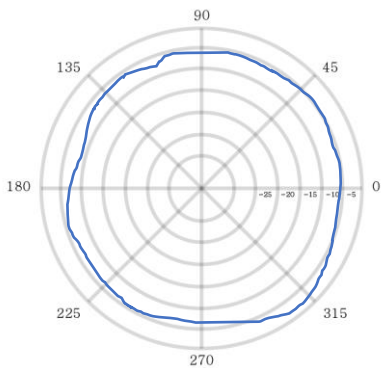
2.4 GHz Horizontal  
(on board)



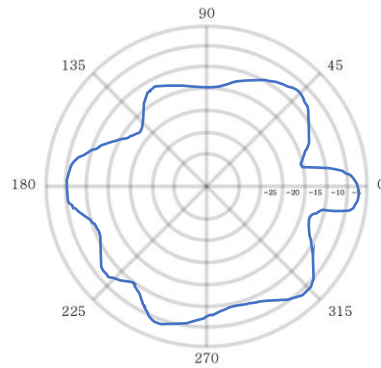
2.4 GHz Vertical  
(on board)



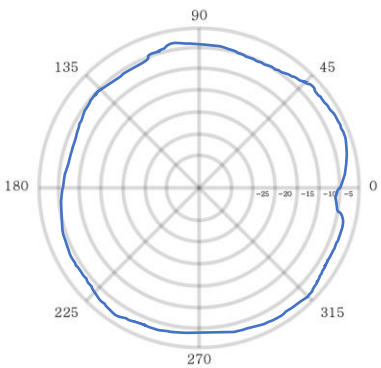
2.4 GHz Horizontal  
(on board)



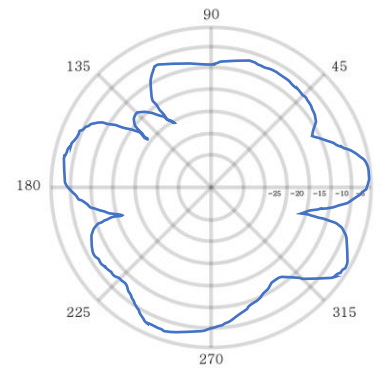
2.4 GHz Vertical  
(on board)



2.4 GHz Horizontal  
(PCIe)



2.4 GHz Horizontal  
(PCIe)





**PATENT**

**VVIA<sup>1700</sup>**

No	Registration name	Registration Number
1	Wi-Fi network access device	10-1781177
2	Temperature compensation of RF transceiver and linear gain contriller	10-0592599
3	Gun management system with wireless repeater	10-1798037
4	Service method of climbing course guide using mobile device terminal	10-0714911
5	Resicent Public information transmission service system using Wi-Fi & beacon	10-1802703
6	Automatic repeat request system and its method for multi-hop system in broadband wireless access network	10-0903053
7	Wireless network communication method and its system using direct links	10-0772417
8	Serving node decision method in a multi-hop	10-1002903
9	Indirect signals removing system&its method in a wireless system	10-1172917
10	Signal relay method and system in a wireless communication system	10-0975743
11	A method for preventing replay attacks in a wireless network environment	10-1398631
12	How to choose a Gateway in a Wireless Mesh Network	10-1421145
13	Apparatus and method for handover processing in a broad band wireless access communication system using a multi-hop relay scheme	10-0883790
14	Relay attacks preventing method in a wireless network environment	10-0975726
15	Routing method in wireless network and communication device of using the same	10-0781369
16	Network system and control method for the same	10-1769472



**PATENT**


**VVIA<sup>1700</sup>**

No	Registration name	Registration Number
17	Wireless communication system and control method for idle state operation therein	10-1555557
18	Method and apparatus for configuring channel node tree in wireless communication system using orthogonal frequency division multiplexing access	10-0899758
19	Multi-hop improvement path selection system and its method of Wi-Fi cooperative communication relay	10-1987842
20	Beamforming control device and its method for Multiple relay communication	10-2016112
21	Wi-Fi wireless communication system in multi-hop network	10-1980868
22	Method&system for Multicast over IEEE 802.11n WLAN	10-1838386
23	Channel selection method of communication node in communication system using a relay scheme	10-1817862
24	Multi-hop routing apparatus and method for Wi-Fi cooperative relay communication	10-2024756



**PATENT**



No	Application name	Application Number
1	Network channel allocation method	10-2018-0105205
2	Data packets transmitting method in a wireless multi-hop network considering hop counts	10-2018-0105216
3	Relay system with beam selection and gain control in high-speed data transmission systems	10-2018-0105222
4	Gateway Selection Method in Wireless Multi-hop Network	10-2018-0105225
5	Multiple Transmitter&multiple receiving period adaptive Beamforming Transmission Methods between in Multi-Antenna Relay System	10-2018-0105231
6	Inducing method for wireless signal relay participation in wireless multi-hop network	10-2018-0105237
7	Indirect signals removing method in a multi-hop relay wireless communication systems	10-2018-0105241
8	Transmission rate controlling method in a wireless LAN networks	10-2018-0105251
9	Distributed support allocation system in wireless multi-hop network environments	10-2018-0105255
10	Communication method of multi-hop wireless network	10-2018-0105257
11	System and method for establishing route path in a multiple HOP network	10-2019-0040701
12	System and apparatus for real-time transmitting and receiving picture of mobile multimedia terminal	10-2019-0154621
13	CCTV system using sensor of motion and sensitivity and for the same control method	10-2019-0154628
14	Wi-Fi wireless communication system in multi-hop network	1-2019-01928 
15	Beamforming control device and its method for Multiple relay communication	PCT/KR2019/011535
16	Multi-hop improvement path selection system and its method of Wi-Fi cooperative communication relay	PCT/KR2019/011536
17	Wi-Fi network access system	PCT/KR2018/000290

## **How to contact us :**

Our Website provides multiple Languages (Korean, English, Vietnamese).  
You can select the language what you want.

If you want to visit our Website, please Feel free to contact us :

- <http://www.nexustech.or.kr/>

If you want to get a more information of VVIA1700, contact us :

- <http://www.VVIANX.com>

If you have any questions about our VVIA1700, contact us :

- <http://www.nexustech.or.kr/qna.html>

- <http://www.VVIANX.com>



[www.vvianx.com](http://www.vvianx.com)

