

## USB 802.11n Sniffer

A robust USB-based packet capture tool capable of capturing all 802.11 frames over a wireless network

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Arada Wireless SW Solution



## Solution Highlights

The USB 11n Sniffer is a robust USB based packet capture tool capable of capturing all 802.11 frames over a wireless network.

The USB11n has a standard USB interface and can be plugged into a USB port which makes it a convenient tool to capture packets over any wireless network. It gives a hex dump output of each packet along with some basic information about the packet

The USB11n can be used in either of two modes:

- **Sniffer Mode:**

In Sniffer mode it provides a simple and convenient 802.11n packet capture solution that can be deployed in all situations.

- **WLAN Client Mode:**

In WLAN Client mode it acts as a WLAN client providing (standard 802.11n) wireless capability where this may not be readily available (for example in a desktop PC without a wireless card or any device with a USB port).

The sniffer product has support for the 802.11n standard and can capture 802.11n as well as 802.11a/b/g frames.

The USB11n is built using Atheros Communications' AR9170 Chipset.

The USB 11n Sniffer is intended for users who need a quick and simple solution for 802.11 packet capture, especially in environments where other solutions cannot be readily deployed.

<b>Supported Features</b>	
<b>Mode Setting</b>	<ul style="list-style-type: none"> <li>• WLAN Client</li> <li>• Sniffer</li> <li>• 802.11a/b/g/n</li> </ul>
<b>Standard Interface</b>	USB 2.0 Compatible Interface
<b>Standards Compliant</b>	<ul style="list-style-type: none"> <li>• Support for 802.11n standard</li> <li>• Captures 802.11n and 802.11a/b/g frames</li> </ul>
<b>Compact and Portable</b>	Small form factor/Standard Interface
<b>Dual Band</b>	Operates in 2.4 and 5 GHz bands
<b>Standard Channel Width Support</b>	Supports both 20MHz and 40MHz channels
<b>Packet Capture</b>	<ul style="list-style-type: none"> <li>• Data packets</li> <li>• Control packets</li> <li>• Management packets</li> </ul>
<b>RSSI</b>	Present
<b>MCS</b>	Present
<b>Channel setting (20)</b>	Present
<b>Aggregation Info</b>	Present
<b>Guard Information</b>	Present
<b>Modulation</b>	Present

<b>Hardware Specifications</b>	
<b>Chipset</b>	Atheros AR9170
<b>Standards</b>	USB 2.0 standard Wireless: IEEE 802.11a/b/g/n (1Tx2R)
<b>Data Rate</b>	802.11b: 11 Mbps 802.11a/g: 54Mbps 802.11n: TX:150Mbps RX:300Mbps
<b>Data Modulation Type</b>	IEEE 802.11b: (DSSS), 5.5/11 Mbps (CCK), 2 Mbps (DQPSK), 1 Mbps (DBPSK) IEEE 802.11a/g: (OFDM), 48/54 Mbps(QAM-64), 24/36 Mbps (QAM-16), 12/18 Mbps (QPSK), 6/9Mbps (BPSK) IEEE 802.11n: (OFDM) QAM-64, QAM-16,QPSK, BPSK
<b>Output Power</b>	11b: 17dbm @ 11Mbps 11g: 15dbm @ 54Mbps 11g/n: 18dBm @MCS7,HT20, 17dBm@MCS7,HT40 11a: 16dBm @ 54Mbps 11a/n: 13dBm @MCS7,HT20, 13dBm@MCS7,HT40
<b>Sensitivity</b>	11b: -85dBm@11Mbps

	11g: -72dBm@54Mbps - 11g/n: -71dBm@HT20,MCS7, - 66dBm@HT40,MCS7 11a: -72dBm@54Mbps 11a/n: -70dBm@HT20,MCS7, - 66dBm@HT40,MCS7
<b>Antenna</b>	Integrated Antenna
<b>Host Interface</b>	High Speed USB 2.0 Interface
<b>Frequency Range</b>	US, Canada : 2.412GHz~2.462 GHz (CH1~CH11) EU, Japan : 2.412GHz~2.472GHz (CH1~CH13) US, Canada : 5.15GHz~5.35GHz ; 5.725GHz~5.850GHz ; EU, Japan :5.15GHZ~5.35GHZ ;5.47GHz~5.725GHz
<b>Operating Voltage</b>	DC 5V ± 10%
<b>Temperature</b>	Operating: 0°C ~ +50°C Storage : -10°C ~ +65°C
<b>Humidity</b>	20% ~ 85% Non-Condensing 10% ~ 90% Non-Condensing
<b>LEDs</b>	Link/ACT: ON/Solid→Associated with AP Blink→TX/RX and Site survey OFF→All other states
<b>Package Contents</b>	802.11 a/b/g/n USB Dongle USB Y-Cable CD-ROM (Driver, User Manual)

<b>Software Specifications</b>	
<b>Driver</b>	Windows XP/2000/Vista, Linux
<b>API Support</b>	API support for full customization: <ul style="list-style-type: none"> <li>• Standard Packet Capture Library API</li> <li>• ExtendedPacket Capture Library API</li> <li>• General APIs</li> <li>• Wrapper Functions</li> </ul>
<b>Security</b>	64/128-bit WEP Encryption, WPA, WPA2

## Sample Output

Packet length, captured portion: 306, 306

TYPE = 80

HEADER: 00037FBEF15B -> FFFFFFFFFF Mgmt ( Beacon frame )

```
00000000 : 80 00 00 00 ff ff ff ff 00 03 7f be f1 5b .....[
00000010 : 00 03 7f be f1 5b 70 01 36 50 27 01 00 00 00 00 .....[p.6P'.....
00000020 : 64 00 01 05 00 07 73 6e 69 66 66 65 72 01 08 8c d.....sniffer...
00000030 : 12 98 24 b0 48 60 6c 03 01 88 05 04 00 01 00 00 ..$.H'l.....
00000040 : 07 4c 55 53 49 24 01 11 28 01 11 2c 01 11 30 01 .LUSI$..(,.,.0.
00000050 : 11 34 01 14 38 01 14 3c 01 14 40 01 14 64 01 14 .4.8.<..@..d..
00000060 : 68 01 14 6c 01 14 70 01 14 74 01 14 78 01 14 7c h..l..p..t..x..|
00000070 : 01 14 80 01 14 84 01 14 88 01 14 8c 01 14 95 01 .....
00000080 : 1e 99 01 1e 9d 01 1e a1 01 1e a5 01 1e 00 20 01 .....
00000090 : 00 dd 18 00 50 f2 02 01 01 03 00 03 a4 00 00 27 ....P.....'
000000a0 : a4 00 00 42 43 5e 00 62 32 2f 00 dd 1e 00 90 4c ...BC^.b2/.....L
000000b0 : 33 4c 00 1b ff ff 00 00 00 00 00 00 00 00 00 00 3L.....
000000c0 : 00 00 00 00 00 00 00 00 00 00 00 00 2d 1a 4c 00 1b .....-L..
000000d0 : ff ff 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
000000e0 : 00 00 00 00 00 00 00 dd 1a 00 90 4c 34 88 08 08 .....L4...
000000f0 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00000100 : 00 00 00 3d 16 88 08 08 00 00 00 00 00 00 00 00 ...=.....
00000110 : 00 00 00 00 00 00 00 00 00 00 00 dd 09 00 03 7f .....
00000120 : 01 01 00 00 ff 7f dd 0a 00 03 7f 04 01 00 00 00 .....
00000130 : 00 00 ..
```