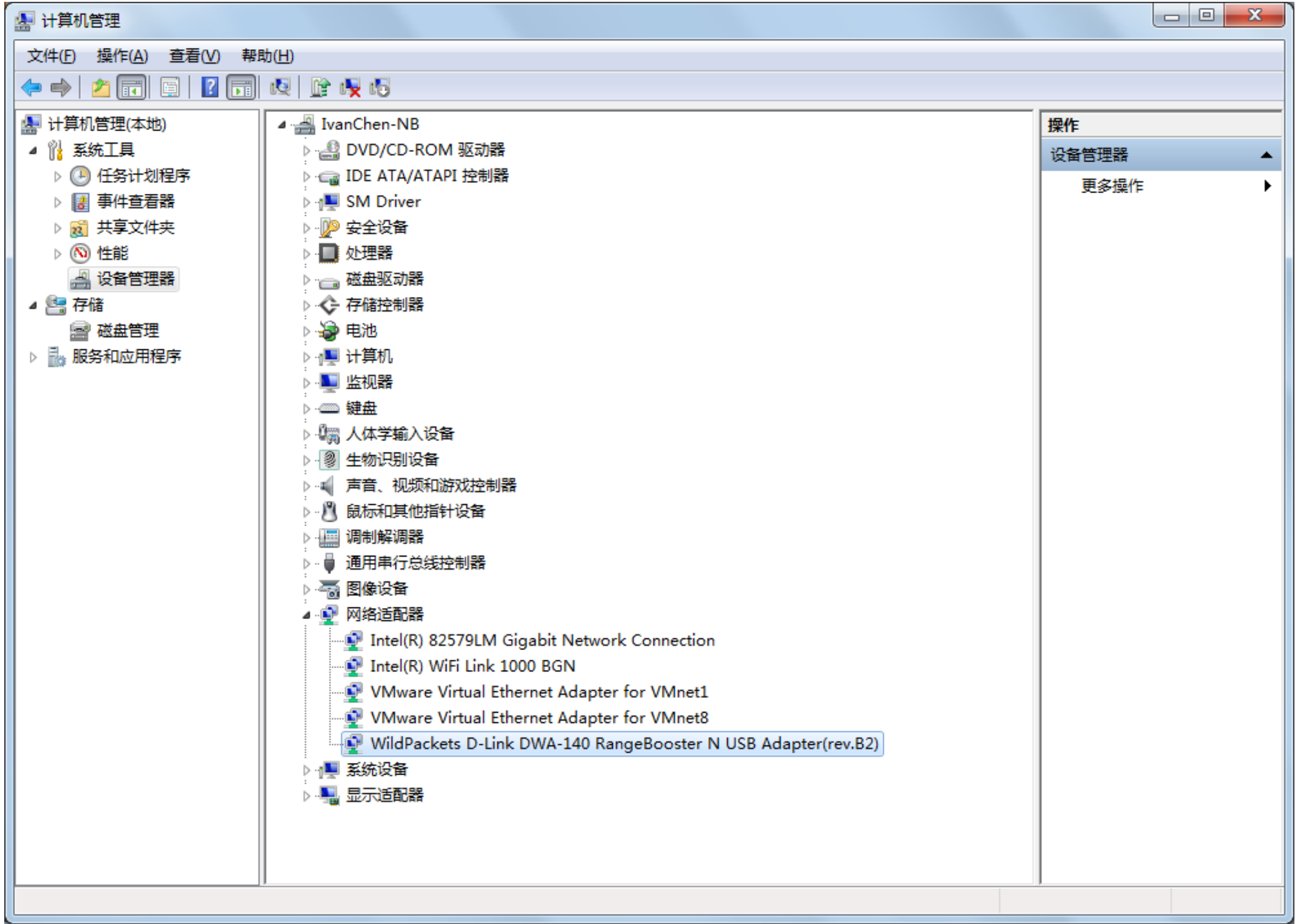


在定位 WIFI 问题时，我们一般采用 OmniPeek 工具进行空中抓包来分析他们的交互过程，以获取有用的信息。

以下为具体的操作步骤：

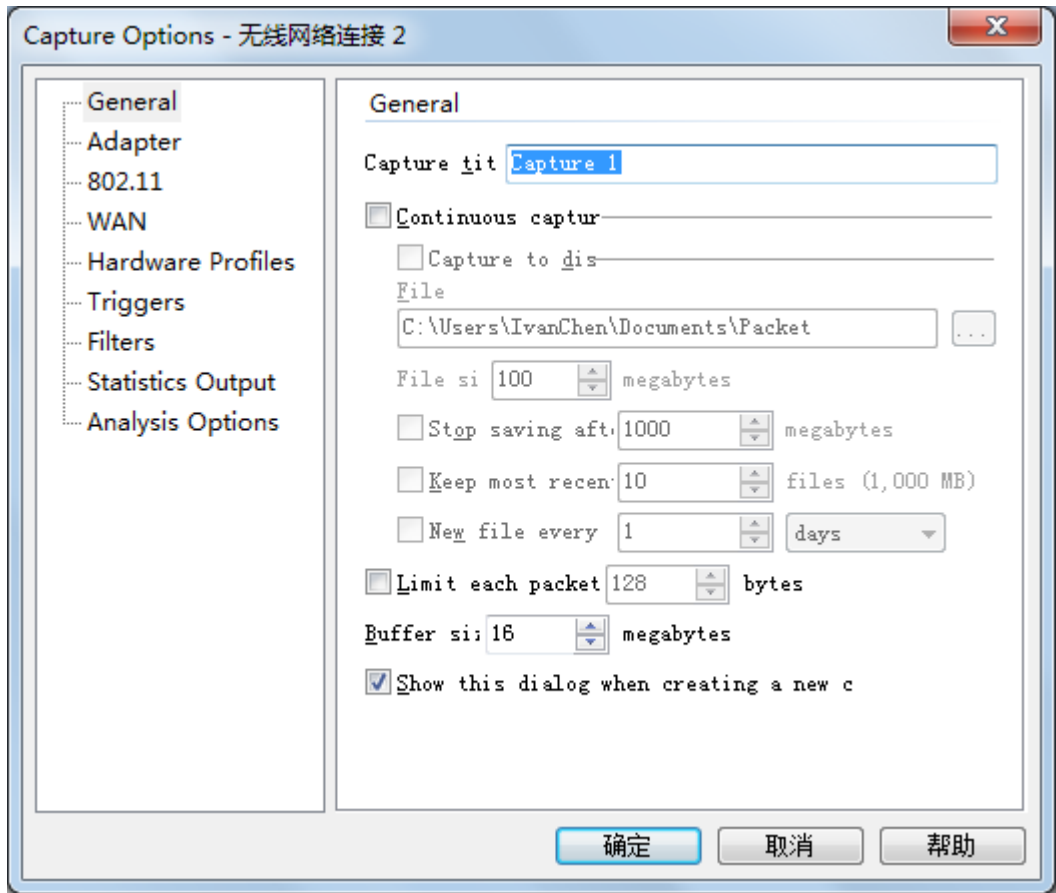
1. 配备可用于抓包的无线网卡

我采用的是 D-Link DWA-140 ， 你可以通过网购获取此 USB 网卡。安装驱动后显示如下：

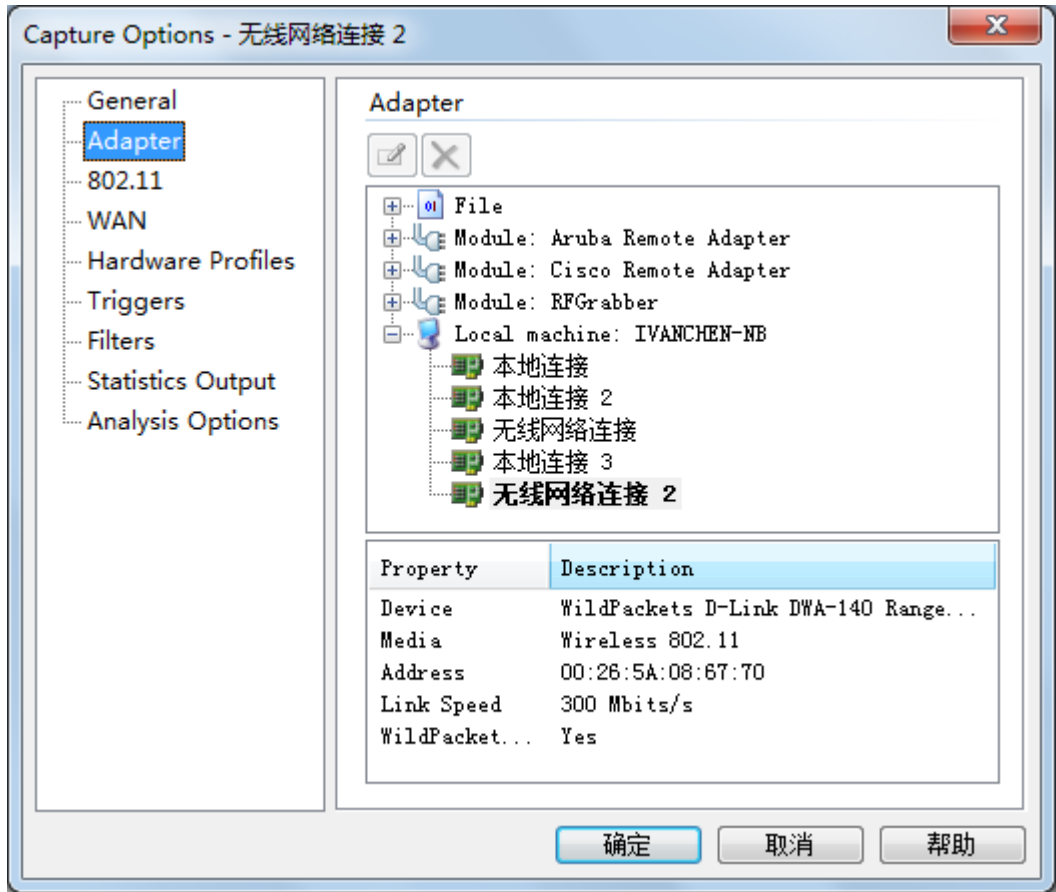


## 2. 启动抓包

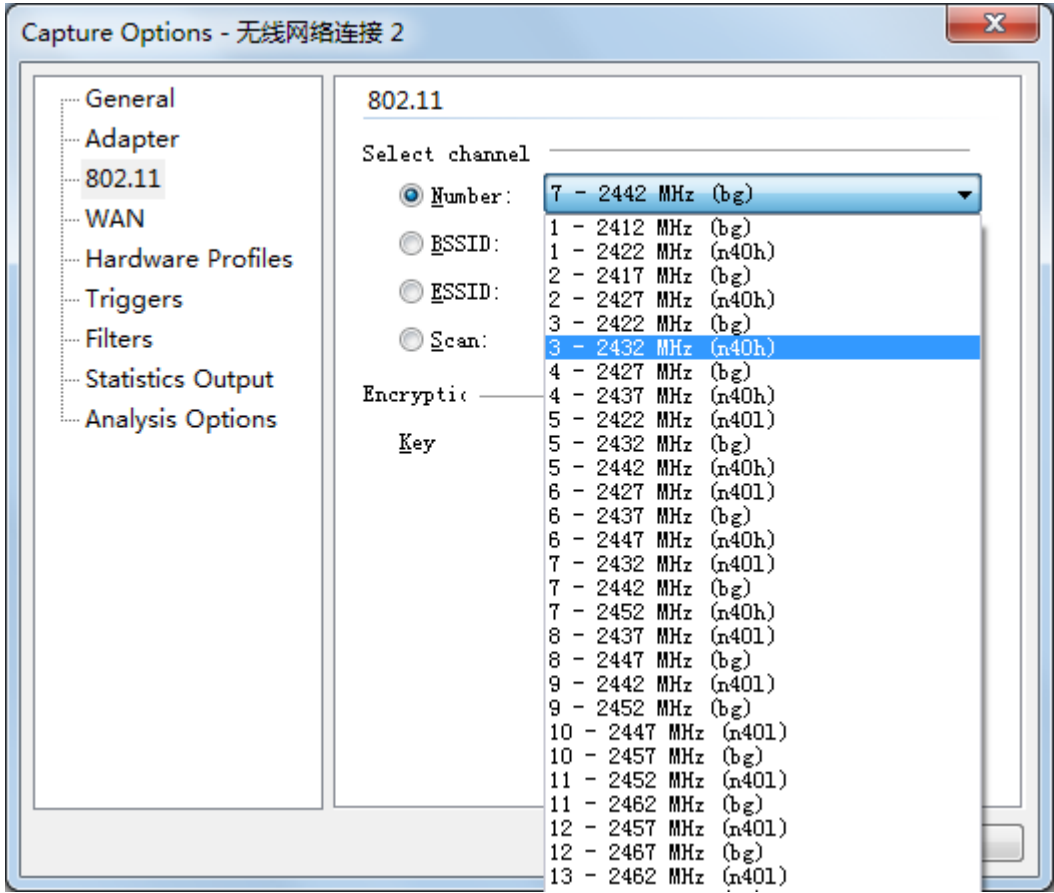
完成网卡的驱动安装后，我就可以开始启动抓包工具进行空中抓包操作了。  
OmniPeek→File→ New Capture ，跳出抓包选项框；  
注意 Continuous capture 选勾，并根据需要选择是否要实时存储抓取的报文。



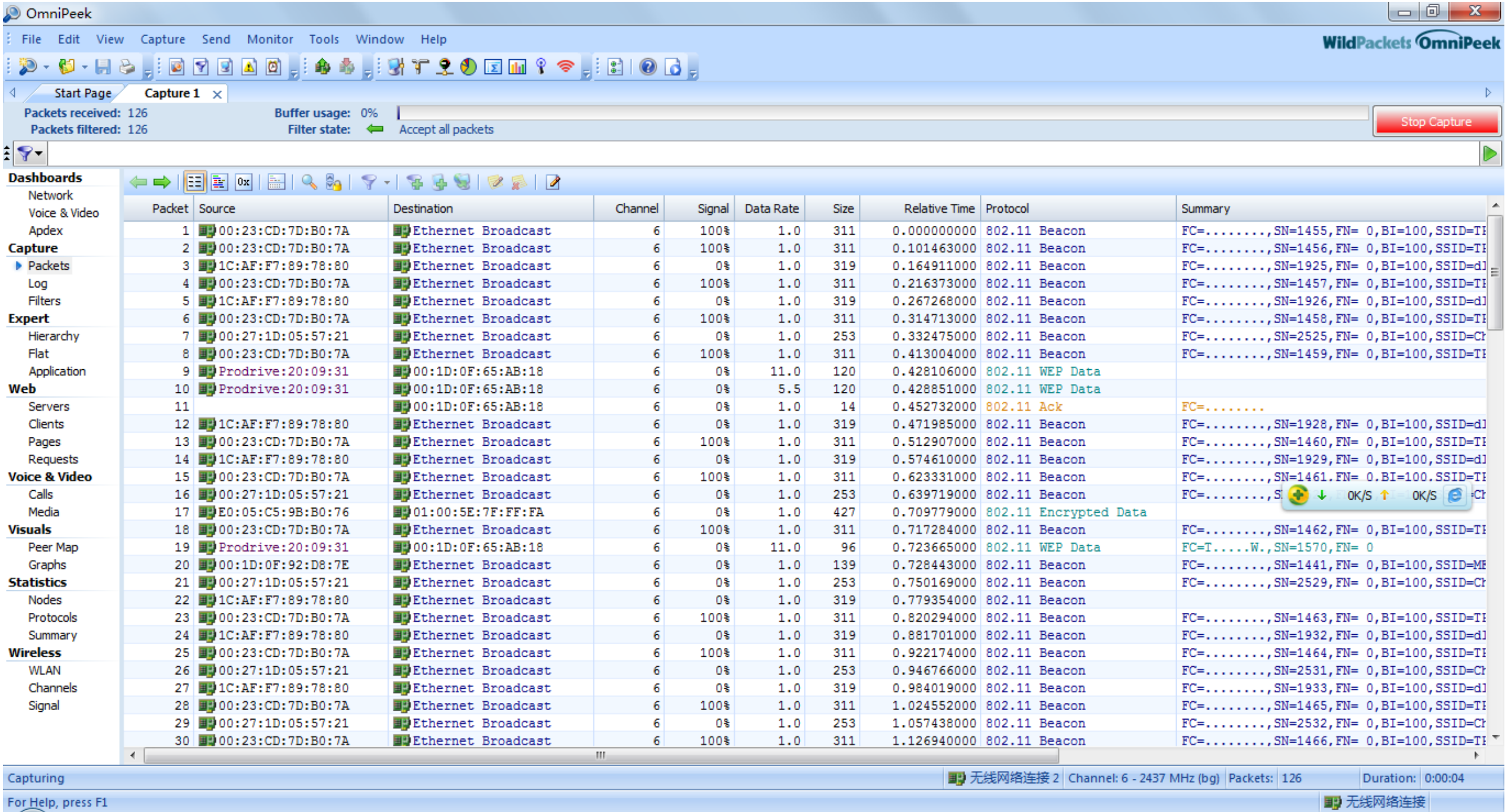
点击 Adapter 选择抓包用网卡：



点击 802.11，选择抓包用信道：

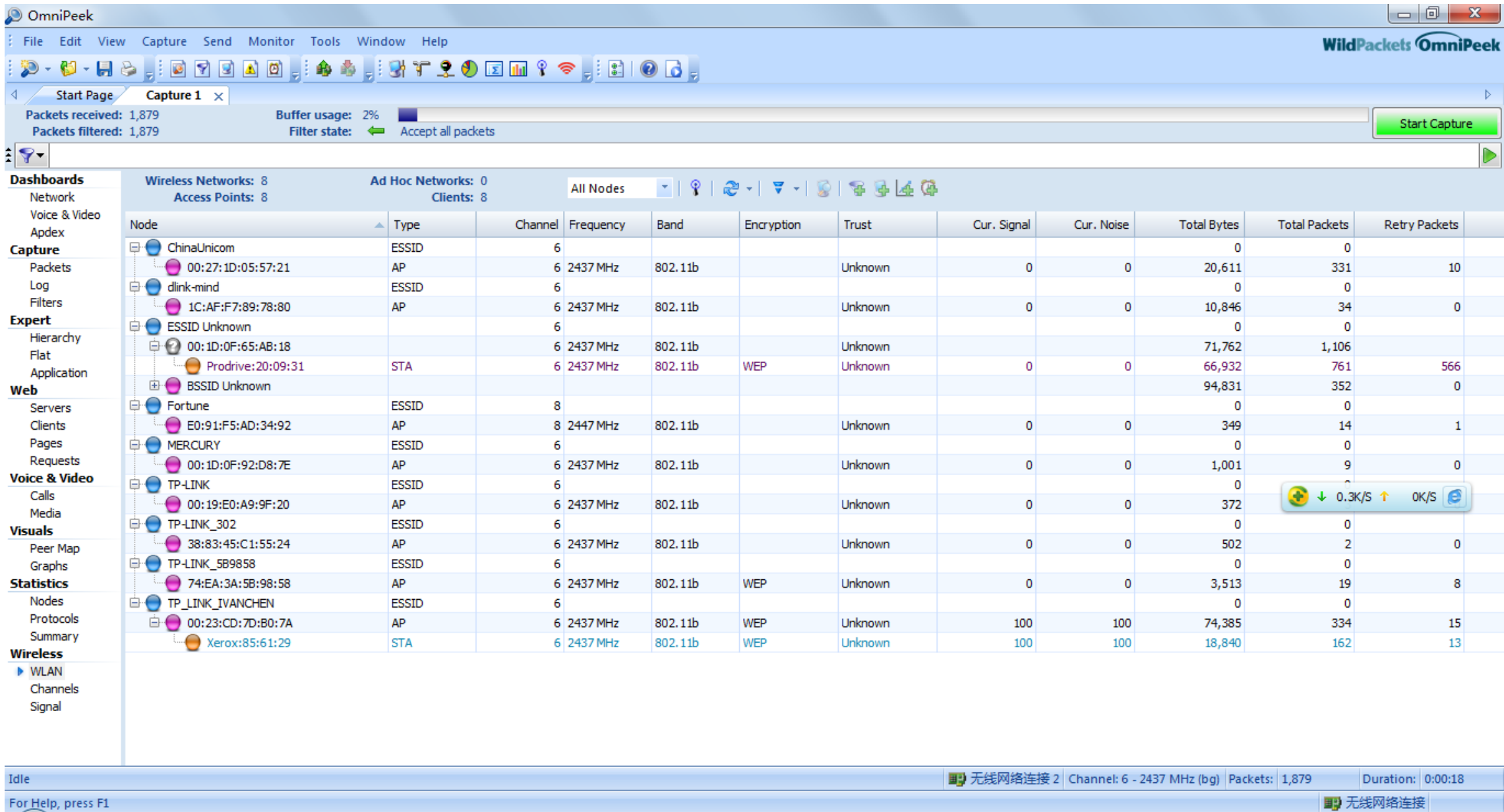


点击确定，进入抓包页面，然后启动抓包：

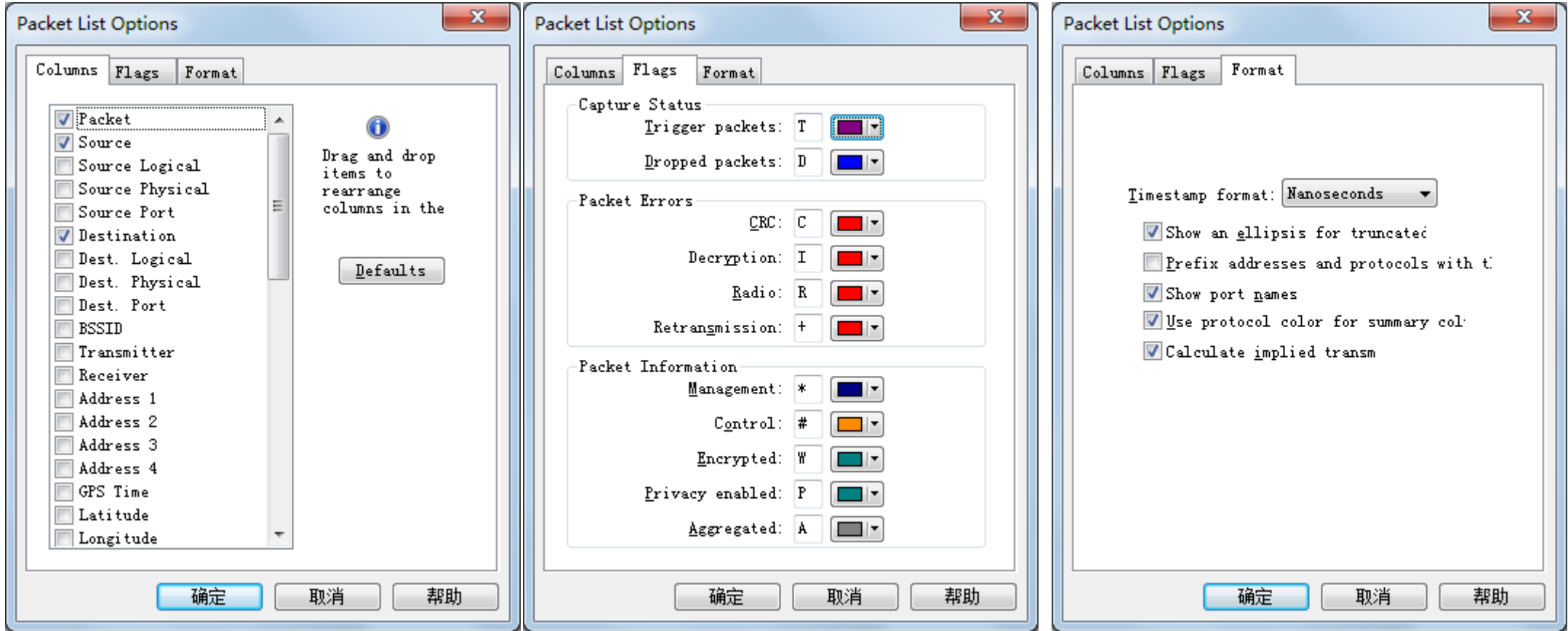


### 3. 如何分析报文

首先，我可以通过左边菜单的 Wireless -> WLAN 来查看 AP-STAs 对应关系：



然后回到 Packets 窗口，通过右键点 packet list options 来选择要显示的信息，以及对应的 flags 定义，当然，你可以修改相关定义的颜色指示：



再次回到左边菜单的 Wireless -> WLAN 窗口，右键选择你关注的 AP 或 STA ： select related packets by source and destination



OmniPeek

File Edit View Capture Send Monitor Tools Window Help

Start Page

Capture 1

Packets received: 1,879

Packets filtered: 1,879

Buffer usage: 2%

Filter state: Accept all packets

Start Capture

Dashboards

Network

Voice & Video

Apdex

Capture

Packets

Log

Filters

Expert

Hierarchy

Flat

Application

Web

Servers

Clients

Pages

Requests

Voice & Video

Calls

Media

Visuals

Peer Map

Graphs

Statistics

Nodes

Protocols

Summary

Wireless

WLAN

Channels

Signal

Wireless Networks: 8

Access Points: 8

Node

Type

ChinaUnicom

ESSID

00:27:1D:05:57:21

AP

dlink-mind

ESSID

1C:AF:F7:89:78:80

AP

ESSID Unknown

00:1D:0F:65:AB:18

STA

Prodrive:20:09:31

BSSID Unknown

Fortune

ESSID

E0:91:F5:AD:34:92

AP

MERCURY

ESSID

00:1D:0F:92:D8:7E

AP

TP-LINK

ESSID

00:19:E0:A9:9F:20

AP

TP-LINK\_302

ESSID

38:83:45:C1:55:24

AP

TP-LINK\_5B9858

ESSID

74:EA:3A:5B:98:58

AP

TP\_LINK\_IVANCHEN

ESSID

00:23:CD:7D:B0:7A

AP

Xerox:85:61:29

STA

Node Details

Locate Node

Save WLAN Statistics...

Display Weak Associations

Channel View Selection

Expand All

Collapse All

Select Related Packets

Make Filter...

Insert Into Name Table...

Graph...

Make Alarm...

Network Policy

Unknown

Known

Trusted

Band

Encryption

Trust

Cur. Signal

Cur. Noise

Total Bytes

Total Packets

Retry Packets

802.11b

Unknown

Unknown

0

0

20,611

331

10

802.11b

Unknown

Unknown

0

0

10,846

34

0

802.11b

Unknown

Unknown

0

0

71,762

1,106

802.11b

WEP

Unknown

0

0

66,932

761

566

802.11b

Unknown

Unknown

0

0

94,831

352

0

802.11b

Unknown

Unknown

0

0

349

14

1

802.11b

Unknown

Unknown

0

0

1,001

9

0

802.11b

Unknown

Unknown

0

0

372

0

0

802.11b

Unknown

Unknown

0

0

502

2

0

802.11b

WEP

Unknown

0

0

3,513

19

8

802.11b

WEP

Unknown

0

0

0

0

0

802.11b

WEP

Unknown

100

100

74,385

334

15

802.11b

WEP

Unknown

100

100

18,840

162

13

0K/S

0K/S

Idle

无线网络连接 2

Channel: 6 - 2437 MHz (bg)

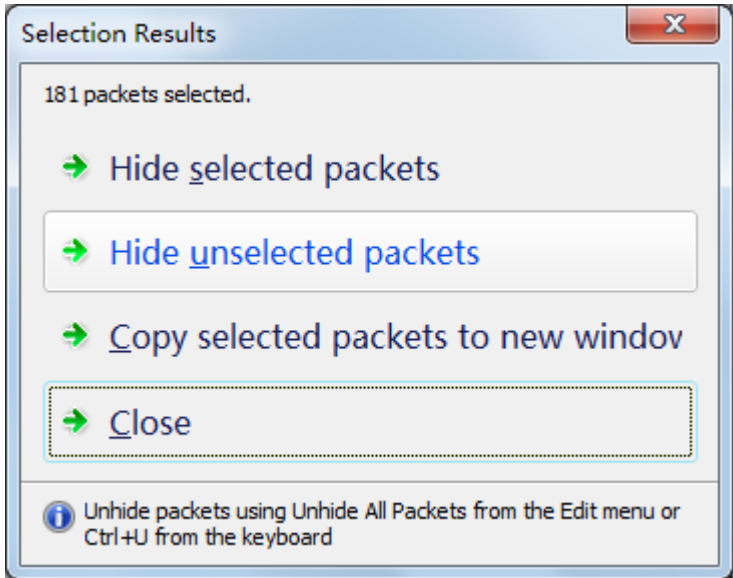
Packets: 1,879

Duration: 0:00:18

Selects packets with the same source and destination addresses

无线网络连接

然后选择 hide unselected packets:



OmniPeek

File Edit View Capture Send Monitor Tools Window Help

Start Page Capture 1 x

Packets received: 1,879 Buffer usage: 2% Start Capture

Packets filtered: 1,879 Filter state: Accept all packets

Dashboards

- Network
- Voice & Video
- Apdex
- Capture
  - Packets
  - Log
  - Filters
- Expert
  - Hierarchy
  - Flat
  - Application
- Web
  - Servers
  - Clients
  - Pages
  - Requests
- Voice & Video
  - Calls
  - Media
- Visuals
  - Peer Map
  - Graphs
- Statistics
  - Nodes
  - Protocols
  - Summary
- Wireless
  - WLAN
  - Channels
  - Signal

Packet	Source	Destination	Channel	Signal	Data Rate	Size	Relative Time	Protocol	Summary
1059	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	34	8.128584000	802.11 Auth	FC=.....,SN= 0,FN= 0,Algorithm=0 (C
1060	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	8.129022000	802.11 Ack	FC=.....
1061	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	75	8.129817000	802.11 Assoc Req	FC=.....,SN=2197,FN= 0,Listen=3,SSID=
1062	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	8.132523000	802.11 Ack	FC=.....
1066	Xerox:85:61:29	33:33:00:00:00:16	6	100%	54.0	122	8.191111000	802.11 WEP Data	FC=T....W.,SN= 0,FN= 0
1067	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	8.191120000	802.11 Ack	FC=.....
1077	Xerox:85:61:29	33:33:FF:85:61:29	6	100%	54.0	110	8.329991000	802.11 WEP Data	FC=T....W.,SN= 1,FN= 0
1078	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	8.330001000	802.11 Ack	FC=.....
1101	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	8.532912000	802.11 QoS Null Data	FC=T...P...,SN=2198,FN= 0
1102	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	8.533407000	802.11 QoS Null Data	FC=T...R...,SN=2198,FN= 0
1103	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	8.533659000	802.11 Ack	FC=.....
1192	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	9.301501000	802.11 QoS Null Data	FC=T...P...,SN=2200,FN= 0
1193	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	9.301726000	802.11 Ack	FC=.....
1196	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	9.323604000	802.11 QoS Null Data	FC=T.....,SN=2203,FN= 0
1197	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	9.324250000	802.11 QoS Null Data	FC=T...R...,SN=2203,FN= 0
1198	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	9.324462000	802.11 Ack	FC=.....
1199	Xerox:85:61:29	Ethernet Broadcast	6	100%	54.0	376	9.324736000	802.11 WEP Data	FC=T....W.,SN= 2,FN= 0
1200	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	9.324743000	802.11 Ack	FC=.....
1201	Xerox:85:61:29	33:33:00:00:00:02	6	100%	54.0	102	9.330115000	802.11 WEP Data	FC=T....W.,SN= 3,FN= 0
1202	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	9.330125000	802.11 Ack	FC=.....
1204	00:23:CD:7D:B0:78	Xerox:85:61:29	6	100%	24.0	348	9.342698000	802.11 WEP Data	FC=.F....W.,SN= 2,FN= 0
1205	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	24.0	14	9.342701000	802.11 Ack	FC=.....
1206	Xerox:85:61:29	Ethernet Broadcast	6	100%	54.0	388	9.344125000	802.11 WEP Data	FC=T....W.,SN= 4,FN= 0
1207	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	9.344133000	802.11 Ack	FC=.....
1210	00:23:CD:7D:B0:78	Xerox:85:61:29	6	100%	36.0	348	9.351502000	802.11 WEP Data	FC=.F....W.,SN= 3,FN= 0
1211	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	24.0	14	9.351511000	802.11 Ack	FC=.....
1212	Xerox:85:61:29	Ethernet Broadcast	6	100%	54.0	74	9.352598000	802.11 WEP Data	FC=T....W.,SN= 5,FN= 0
1213	Xerox:85:61:29	Ethernet Broadcast	6	100%	54.0	74	9.353001000	802.11 WEP Data	FC=T...R...W.,SN= 5,FN= 0
1214	Xerox:85:61:29	Ethernet Broadcast	6	100%	54.0	74	9.353216000	802.11 WEP Data	FC=T...R...W.,SN= 5,FN= 0
1215	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	9.353226000	802.11 Ack	FC=.....

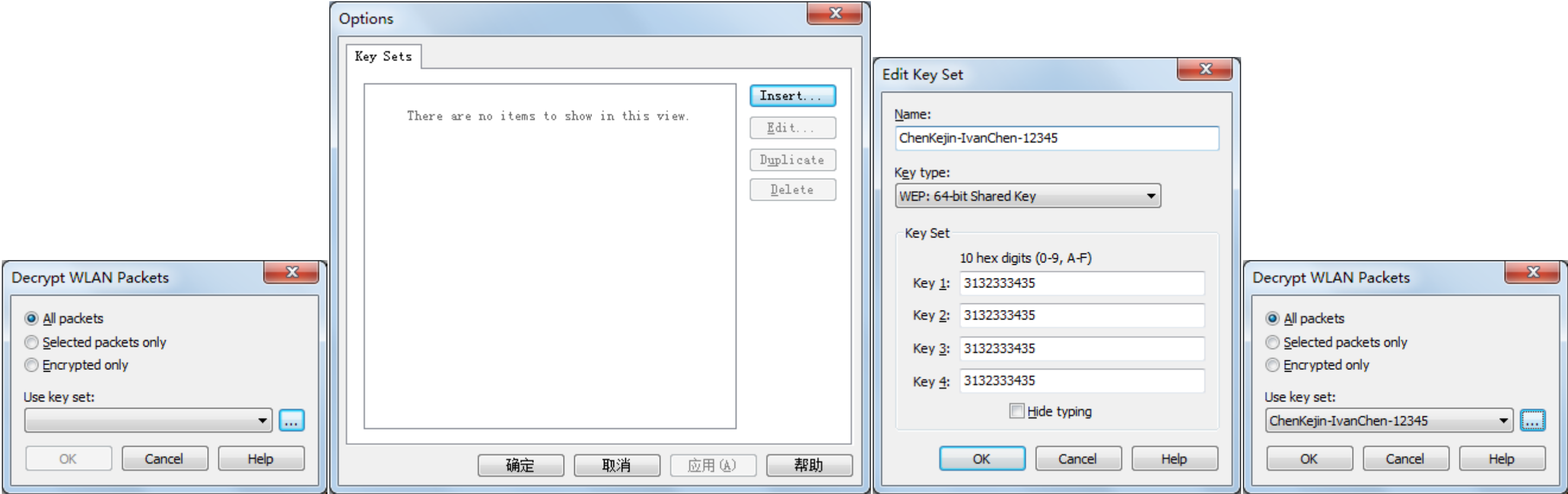
Idle 无线网络连接 2 Channel: 6 - 2437 MHz (bg) Packets: 181 (of 1,879) Duration: 0:00:13

For Help, press F1 无线网络连接

4. 解密 WEP 报文

在加密模式下，我们无法知道获取到数据报文的内容，而 omnipeek 工具提供了解密的功能，当然，需要事先知道对应的密码。

Tools -> Decrypt WLAN Packets，选择...键，然后选择 insert 增加密码设置





然后点击确定，解压后显示：

OmniPeek

File Edit View Capture Send Monitor Tools Window Help

Start Page

Capture 1

Capture 1-Decrypted

Dashboards

Network

Voice & Video

Apdex

Capture

Packets

Log

Expert

Hierarchy

Flat

Application

Web

Servers

Clients

Pages

Requests

Voice & Video

Calls

Media

Visuals

Peer Map

Graphs

Statistics

Nodes

Protocols

Summary

Wireless

WLAN

Channels

Signal

Packet	Source	Destination	Channel	Signal	Data Rate	Size	Relative Time	Protocol	Summary
40	0:0:0:0:0:0:0:0	FF02::16	6	100%	54.0	114	10.122409000	IPv6	FC=I.....,SN= 0,FN= 0
41	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	10.122419000	802.11 Ack	FC=.....
42	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	10.355826000	802.11 QoS Null Data	FC=T...P...,SN=2340,FN= 0
43	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	10.356185000	802.11 Ack	FC=.....
44	0:0:0:0:0:0:0:0	FF02::1:FF85:6129	6	100%	54.0	102	10.932653000	ICMP NSol	FC=I.....,SN= 1,FN= 0
45	0:0:0:0:0:0:0:0	FF02::1:FF85:6129	6	100%	54.0	102	10.933141000	ICMP NSol	FC=T..R...,SN= 1,FN= 0
46	0:0:0:0:0:0:0:0	FF02::1:FF85:6129	6	100%	54.0	102	10.934526000	ICMP NSol	FC=T..R...,SN= 1,FN= 0
47	0:0:0:0:0:0:0:0	FF02::1:FF85:6129	6	100%	54.0	102	10.935026000	ICMP NSol	FC=T..R...,SN= 1,FN= 0
48	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	10.935035000	802.11 Ack	FC=.....
49	0:0:0:0:0:0:0:0	FF02::16	6	100%	54.0	114	11.009187000	IPv6	FC=I.....,SN= 2,FN= 0
50	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	11.009192000	802.11 Ack	FC=.....
51	0.0.0.0	IP Broadcast	6	100%	54.0	368	11.218553000	DHCP	C DISCOVER android_85d0c407380dfd18
52	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	11.218560000	802.11 Ack	FC=.....
53	192.168.100.1	192.168.100.100	6	100%	24.0	340	11.303008000	DHCP	R OFFER 192.168.100.100
54	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	24.0	14	11.303021000	802.11 Ack	FC=.....
55	0.0.0.0	IP Broadcast	6	100%	54.0	380	11.311219000	DHCP	C REQUEST 192.168.100.100 android_85d0c407380dfd18
56	0.0.0.0	IP Broadcast	6	100%	54.0	380	11.313027000	DHCP	C REQUEST 192.168.100.100 android_85d0c407380dfd18
57	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	11.313037000	802.11 Ack	FC=.....
58	192.168.100.1	192.168.100.100	6	100%	36.0	340	11.373156000	DHCP	R ACK
59	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	24.0	14	11.373159000	802.11 Ack	FC=.....
60	Xerox:85:61:29	Ethernet Broadcast	6	100%	54.0	66	11.374655000	ARP Request	192.168.100.100 = ?
61	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	11.374660000	802.11 Ack	FC=.....
62	Xerox:85:61:29	Ethernet Broadcast	6	100%	1.0	197	11.609737000	802.11 Probe Req	FC=...P...,SN=2346,FN= 0,SSID=TP_LINK_1
63	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	400	11.613253000	802.11 Probe Rsp	FC=.....,SN= 4,FN= 0,BI=100,SSID=TP_LINK_1
64	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	11.613424000	802.11 Ack	FC=...P...
65	Xerox:85:61:29	Ethernet Broadcast	6	100%	1.0	181	11.615805000	802.11 Probe Req	FC=...P...,SN=2347,FN= 0
66	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	11.628640000	802.11 QoS Null Data	FC=I.....,SN=2348,FN= 0
67	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	11.628792000	802.11 Ack	FC=.....
68	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	11.629313000	802.11 QoS Null Data	FC=T...P...,SN=2349,FN= 0
69	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	11.629610000	802.11 Ack	FC=.....
70	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	30	11.651490000	802.11 QoS Null Data	FC=I.....,SN=2352,FN= 0
71	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	11.651887000	802.11 Ack	FC=.....

Packets: 166

Duration: 0:00:17

For Help, press F1

无线网络连接

5. 解密 WPA 报文

相对于 WEP 而言，解密 WPA 报文要稍稍复杂一点，因为她的通信密码是动态可变的。所以在选择解密报文时必须要选择所有的报文，例子如下：

TP_LINK_IVANCHEN	ESSID	6						
00:23:CD:7D:B0:7A	AP	6	2437 MHz	802.11b	TKIP	Unknown	100	
Xerox:85:61:29	STA	6	2437 MHz	802.11b	CCMP	Unknown	100	



查看其所有报文，确认已经抓取 EAPOL-KEY 的 4 次握手消息：

OmniPeek										
File Edit View Capture Send Monitor Tools Window Help										
WildPackets OmniPeek										
Start Page Capture 3										
Packets received: 906										
Packets filtered: 906										
Buffer usage: 1%										
Filter state: Accept all packets										
Start Capture										
Dashboards										
Network										
Voice & Video										
Apdex										
Capture										
Packets										
Log										
Filters										
Expert										
Hierarchy										
Flat										
Application										
Web										
Servers										
Clients										
Pages										
Requests										
Voice & Video										
Calls										
Media										
Visuals										
Peer Map										
Graphs										
Statistics										
Nodes										
Protocols										
Summary										
Wireless										
WLAN										
Channels										
Signal										
Packet	Source	Destination	Channel	Signal	Data Rate	Size	Relative Time	Protocol	Summary	
205	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	4.392306000	802.11 Ack	FC=.....	
206	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	125	4.393640000	802.11 Assoc Req	FC=.....,SN=2922,FN= 0,Listen=3,SSID=	
207	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	4.394053000	802.11 Ack	FC=.....	
208	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	211	4.395906000	802.11 Assoc Resp	FC=.....,SN= 1,FN= 0,Status=0,AID=1	
209	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	4.396304000	802.11 Ack	FC=.....	
210	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	37	4.396973000	802.11 Action	FC=.....,SN=2923,FN= 0	
211	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	4.397270000	802.11 Ack	FC=.....	
212	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	37	4.400426000	802.11 Action	FC=.....,SN= 2,FN= 0	
213	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	4.400639000	802.11 Ack	FC=.....	
214	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	37	4.401148000	802.11 Action	FC=.....,SN= 4,FN= 0	
215	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	14	4.401540000	802.11 Ack	FC=.....	
216	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	1.0	37	4.401972000	802.11 Action	FC=.....,SN=2924,FN= 0	
217	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	1.0	14	4.402217000	802.11 Ack	FC=.....	
218	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	13.0	137	4.415511000	EAPOL-Key	FC=.F.....,SN= 0,FN= 0	
219	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	12.0	14	4.415529000	802.11 Ack	FC=.....	
220	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	159	4.428625000	EAPOL-Key	FC=T.....,S	OK/S OK/S
221	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	159	4.428821000	EAPOL-Key	FC=T..R....,SN= 0,FN= 0	
222	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	159	4.428945000	EAPOL-Key	FC=T..R....,SN= 0,FN= 0	
223	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	159	4.430493000	EAPOL-Key	FC=T..R....,SN= 0,FN= 0	
224	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	4.430545000	802.11 Ack	FC=.....	
250	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	19.5	137	5.415328000	EAPOL-Key	FC=.F.....,SN= 1,FN= 0	
251	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	12.0	14	5.415389000	802.11 Ack	FC=.....	
252	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	159	5.424757000	EAPOL-Key	FC=T.....,SN= 1,FN= 0	
253	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	24.0	14	5.424822000	802.11 Ack	FC=.....	
257	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	26.0	241	5.468501000	EAPOL-Key	FC=.F.....,SN= 2,FN= 0	
258	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	24.0	14	5.468574000	802.11 Ack	FC=.....	
259	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	137	5.475755000	EAPOL-Key	FC=T.....,SN= 2,FN= 0	
260	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	65.0	137	5.475923000	EAPOL-Key	FC=T..R....,SN= 2,FN= 0	
263	00:23:CD:7D:B0:7A	Xerox:85:61:29	6	100%	39.0	201	5.508731000	802.11 Encrypted Data	FC=.F....W.,SN= 3,FN= 0	
264	Xerox:85:61:29	00:23:CD:7D:B0:7A	6	100%	24.0	14	5.508739000	802.11 Ack	FC=.....	
Idle										
无线网络连接 2 Channel: 6 - 2437 MHz (bg) Packets: 244 (of 906) Duration: 0:00:18										
For Help, press F1										
无线网络连接										

然后选择 Tools -> Decrypt WLAN Packets 开始报文解密

同 wep 解密一样，insert 一个 edit key set 窗口：

Edit Key Set

Name:

ChenKejin\_WPA\_12345678

Key type:

WPA/WPA2: Passphrase

Key Set

Phrase: 12345678

SSID: TP\_LINK\_IVANCHEN

Key:

Hide typing

OK

Cancel

Help

Decrypt WLAN Packets

All packets

Selected packets only

Encrypted only

Use key set:

ChenKejin\_WPA\_12345678

OK

Cancel

Help

点击确定后所有的 CCMP 报文将被成功解密：

OmniPeek

File Edit View Capture Send Monitor Tools Window Help

WildPackets OmniPeek

Start Page Capture 3 Capture 3-Decrypted Capture 3-Decrypted-Decrypted

Network

Voice & Video

Apdex

Capture

Packets

Log

Expert

Hierarchy

Flat

Application

Web

Servers

Clients

Pages

Requests

Voice & Video

Calls

Media

Visuals

Peer Map

Graphs

Statistics

Nodes

Protocols

Summary

Wireless

WLAN

Channels

Signal

Packet

Source

Destination

Channel

Signal

Data Rate

Size

Relative Time

Protocol

Summary

172

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

1.0

30

8.396857000

802.11 QoS Null Data

FC=T.....,SN=3004,FN= 0

173

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

1.0

14

8.397211000

802.11 Ack

FC=.....

174

0.0.0.0

IP Broadcast

6

100%

65.0

368

8.594667000

DHCP

C DISCOVER android\_85d0c407380dfd18

175

0.0.0.0

IP Broadcast

6

100%

65.0

368

8.595137000

DHCP

C DISCOVER android\_85d0c407380dfd18

176

0.0.0.0

IP Broadcast

6

100%

65.0

368

8.595537000

DHCP

C DISCOVER android\_85d0c407380dfd18

177

0.0.0.0

IP Broadcast

6

100%

65.0

368

8.596764000

DHCP

C DISCOVER android\_85d0c407380dfd18

178

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

24.0

14

8.596769000

802.11 Ack

FC=.....

179

192.168.100.1

192.168.100.100

6

100%

39.0

340

8.623056000

DHCP

R OFFER 192.168.100.100

180

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

24.0

14

8.623065000

802.11 Ack

FC=.....

181

0.0.0.0

IP Broadcast

6

100%

65.0

380

8.624022000

DHCP

C REQUEST 192.168.100.100 android\_85d0c4

182

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

24.0

14

8.624029000

802.11 Ack

FC=.....

183

192.168.100.1

192.168.100.100

6

100%

39.0

340

8.632984000

DHCP

R OFFER 192.168.100.100

184

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

24.0

14

8.632989000

802.11 Ack

FC=.....

185

192.168.100.1

192.168.100.100

6

100%

39.0

340

8.634013000

DHCP

R OFFER 192.168.100.100

186

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

24.0

14

8.634019000

802.11 Ack

FC=.....

187

192.168.100.1

192.168.100.100

6

100%

39.0

340

8.634882000

DHCP

R ACK

188

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

24.0

14

8.634886000

802.11 Ack

FC=.....

189

Xerox:85:61:29

Ethernet Broadcast

6

100%

65.0

66

8.635783000

ARP Request

192.168.100.1

190

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

24.0

14

8.635788000

802.11 Ack

FC=.....

191

FE80::200:FF:FE85:...

FF02::2

6

100%

65.0

94

9.994124000

ICMP RSol

FC=T.....,SN= 9,FN= 0

192

FE80::200:FF:FE85:...

FF02::2

6

100%

65.0

94

9.994538000

ICMP RSol

FC=T..R....,SN= 9,FN= 0

193

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

24.0

14

9.994549000

802.11 Ack

FC=.....

194

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

1.0

30

11.399585000

802.11 QoS Null Data

FC=T.....,SN=3005,FN= 0

195

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

1.0

14

11.399980000

802.11 Ack

FC=.....

196

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

1.0

30

11.504338000

802.11 QoS Null Data

FC=T...P...,SN=3006,FN= 0

197

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

1.0

14

11.504599000

802.11 Ack

FC=.....

198

Xerox:85:61:29

Ethernet Broadcast

6

100%

65.0

66

12.713060000

ARP Request

192.168.100.100 = ?

199

Xerox:85:61:29

Ethernet Broadcast

6

100%

65.0

66

12.713494000

ARP Request

192.168.100.100 = ?

200

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

24.0

14

12.713499000

802.11 Ack

FC=.....

201

Xerox:85:61:29

00:23:CD:7D:B0:7A

6

100%

1.0

30

12.913407000

802.11 QoS Null Data

FC=T...P...,SN=3007,FN= 0

202

00:23:CD:7D:B0:7A

Xerox:85:61:29

6

100%

1.0

14

12.913626000

802.11 Ack

FC=.....

203

Xerox:85:61:29

Ethernet Broadcast

6

100%

1.0

197

12.916506000

802.11 Probe Req

FC=....P...,SN=3008,FN= 0,SS

For Help, press F1

Packets: 244

Duration: 0:00:18

无线网络连接