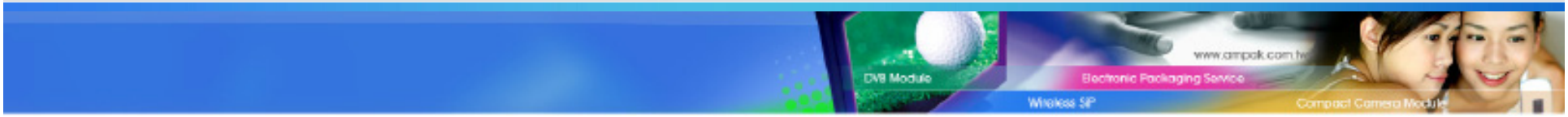

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TX&RX test with IQ-view

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AMPAK
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Meeting date:2010/07/30

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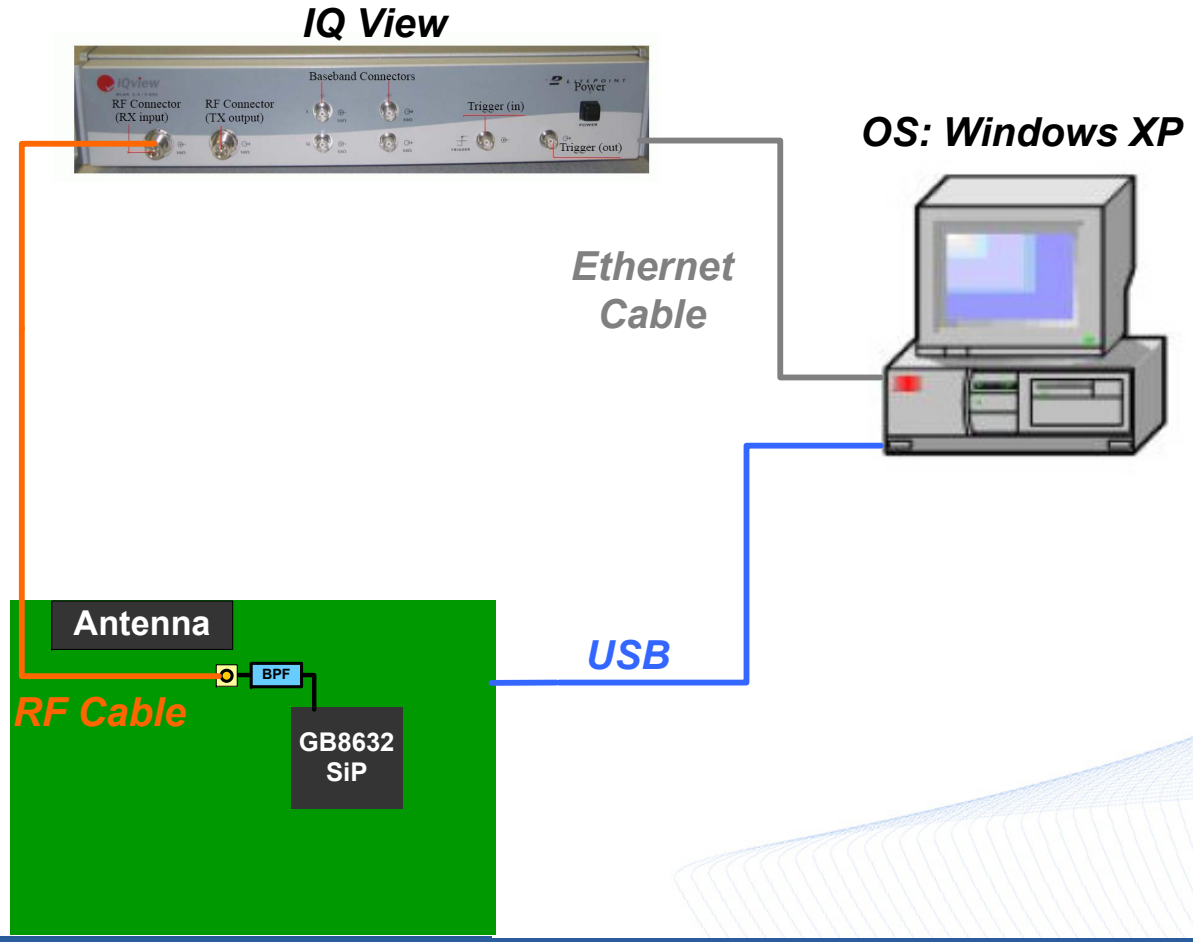
Tx test Configuration

The following procedure describes how to analyze the 802.11B/G/N TX Packet using IQview and WL commands.



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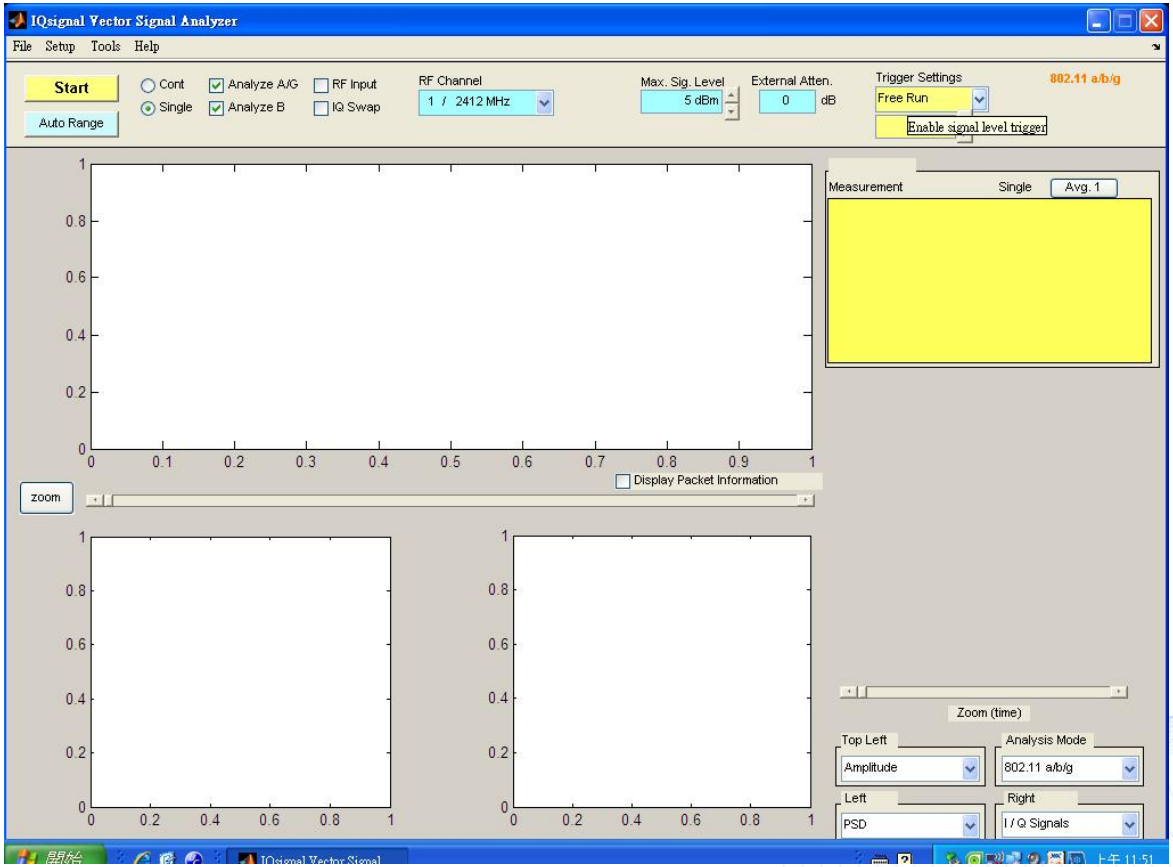
Set up the IQview for TX test

Step1. Execute IQview.exe 

and the GUI shows below.



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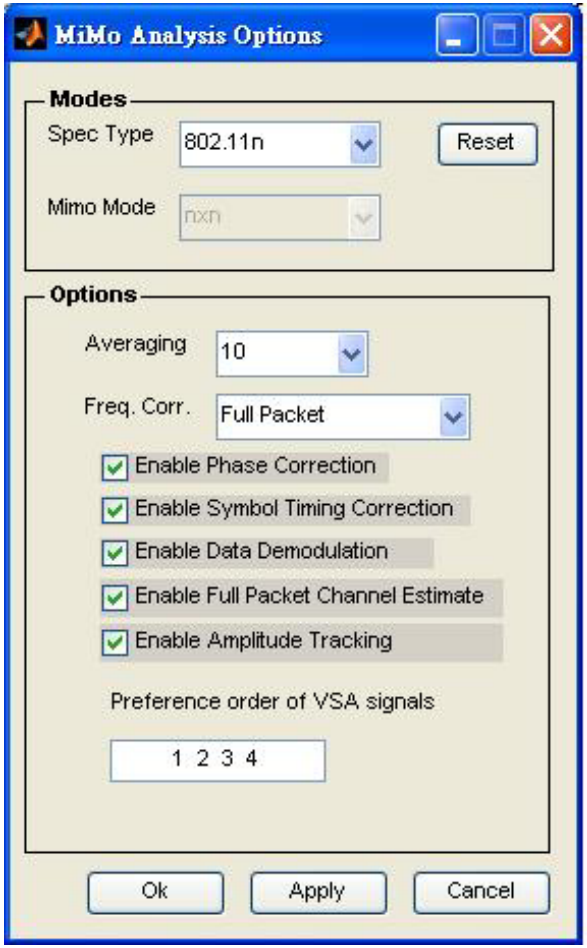
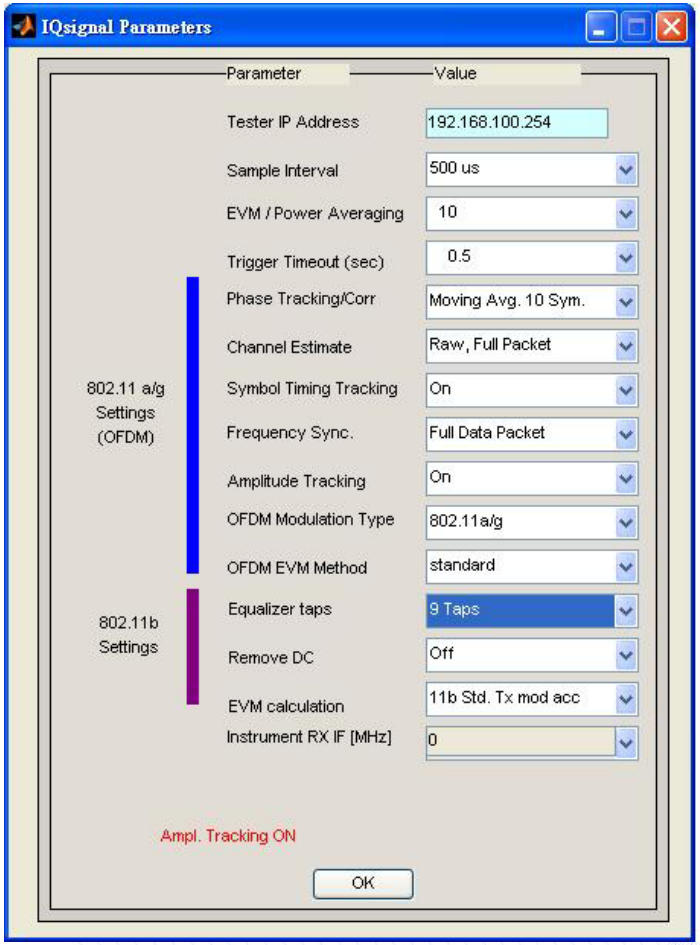
Set up the IQview for TX test

For IQMIMO (For analyze 802.11G/N mode)



For IQsignal (For analyze 802.11B/G mode)



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TX test

Using the WL command below to enter the TX test mode.

802.11B mode TX command

```
wlu down
wlu clk 1
wlu band b
wlu country ALL
wlu chanspec -c 1 -b 2 -w 20 -s 0
wlu up
wlu mpc 0
wlu txant 0
wlu antdiv 0
wlu rateset 11b
wlu join WillTxBtest imode adhoc
wlu rate 11
wlu txpwr1 -1 (or wlu txpwr1 –q number, number : 68~80)
wlu up
sleep 5
wlu pkteng_start 00:90:4c:14:43:19 tx 40 1000 0
```

Set the channel

Set data rate

Set the power

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TX test

Using the WL command below to enter the TX test mode.

802.11G mode TX command

wlu down
wlu clk 1
wlu band b
wlu country ALL
wlu chanspec -c 1 -b 2 -w 20 -s 0 ← **Set the channel**
wlu up
wlu mpc 0
wlu txant 0
wlu antdiv 0
wlu rateset 54b
wlu join WillTxBtest imode adhoc
wlu rate 54 ← **Set data rate**
wlu txpwr1 -1 (or wlu txpwr1 –q number, number : 68~76) ← **Set the power**
wlu up
sleep 5
wlu pkteng_start 00:90:4c:14:43:19 tx 40 1000 0

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TX test

Using the WL command below to enter the TX test mode.

802.11N mode TX command

wlu down
wlu clk 1
wlu band b
wlu country ALL
wlu chanspec -c 1 -b 2 -w 20 -s 0 ← **Set the channel**
wlu up
wlu mpc 0
wlu txant 0
wlu antdiv 0
wlu nrate -m 7 -s 0 ← **Set data rate**
wlu join WillTxBtest imode adhoc
wlu txpwr1 -1 (or wlu txpwr1 –q number, number : 68~76) ← **Set the power**
wlu up
sleep 5
wlu pkteng_start 00:90:4c:14:43:19 tx 40 1000 0

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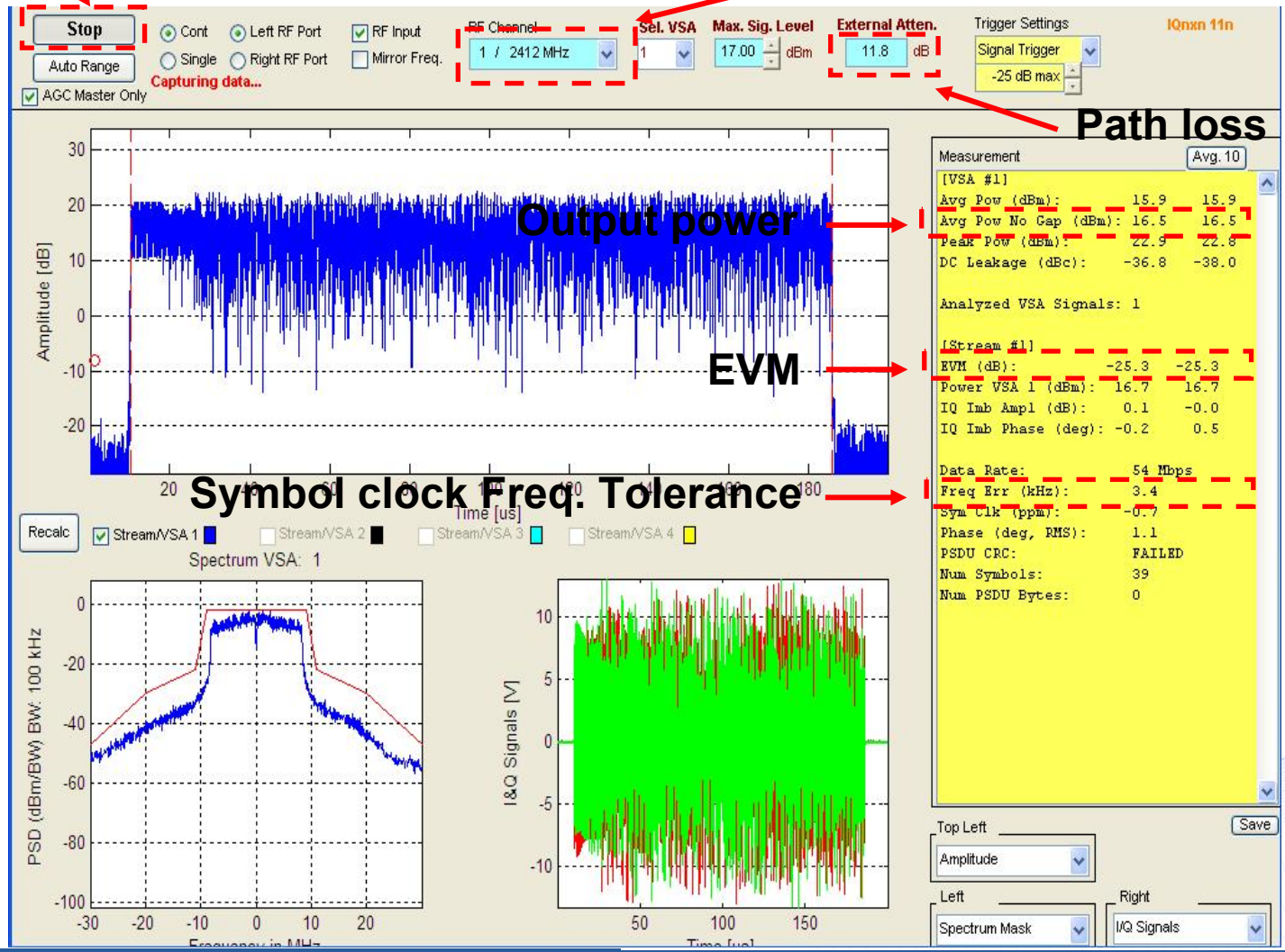
TX test

Click Start to analyze packets

Select desired channel



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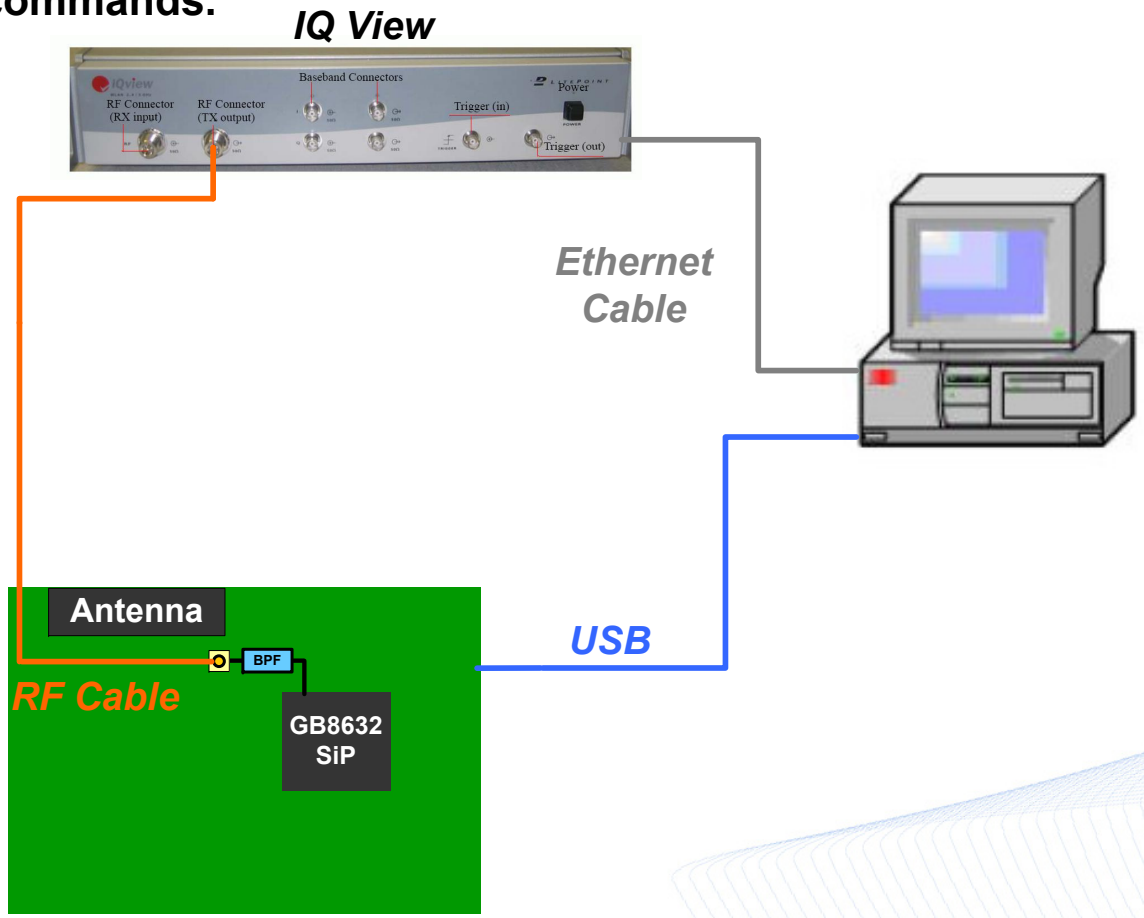
Rx test Configuration

The following procedure shows the setup for OFDM 54 Mbps signal sequence with a 1000 packet count and describes how to calculate the RX Packet Error Rate using IQview and WL commands.



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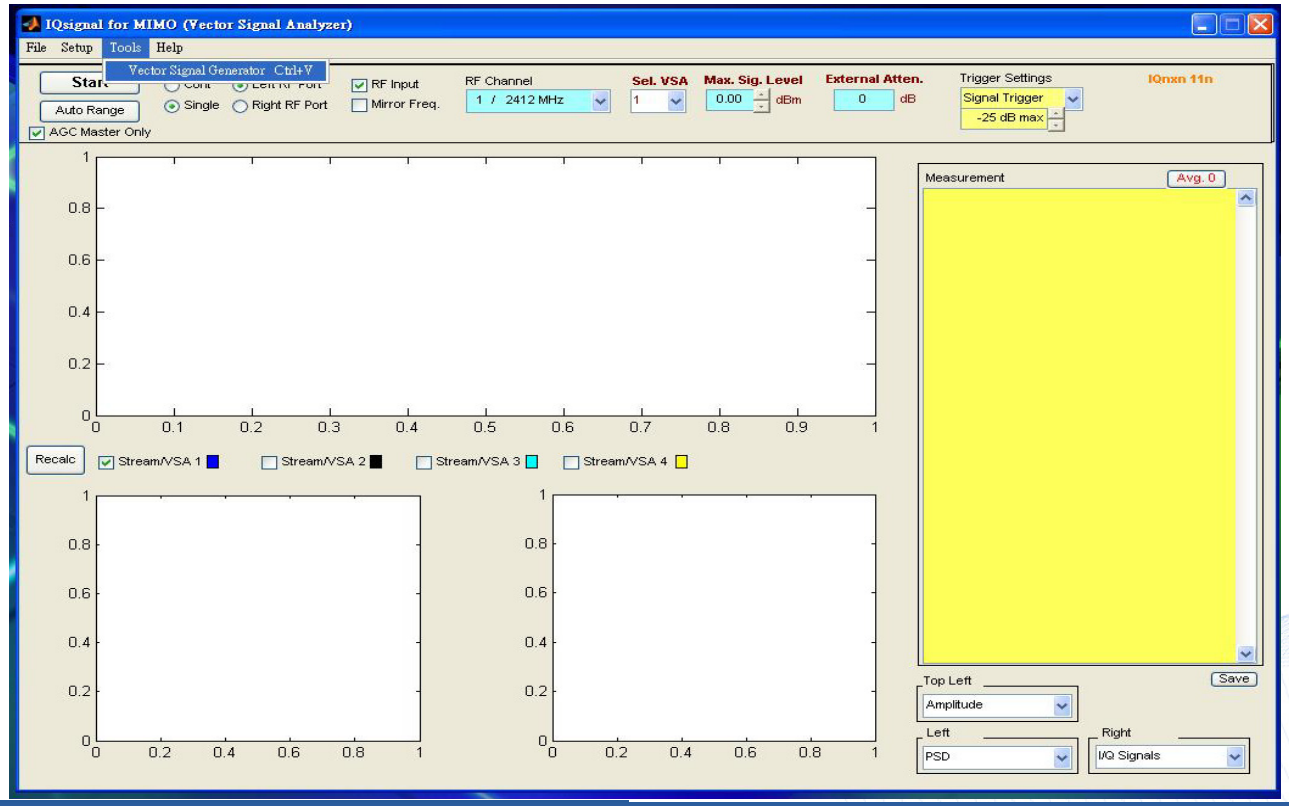
Set up the IQview VSG function for RX test

Step1. Execute IQview.exe 

and the GUI shows below.

Step2. From the GUI, select Tools and then click Vector Signal Generator.



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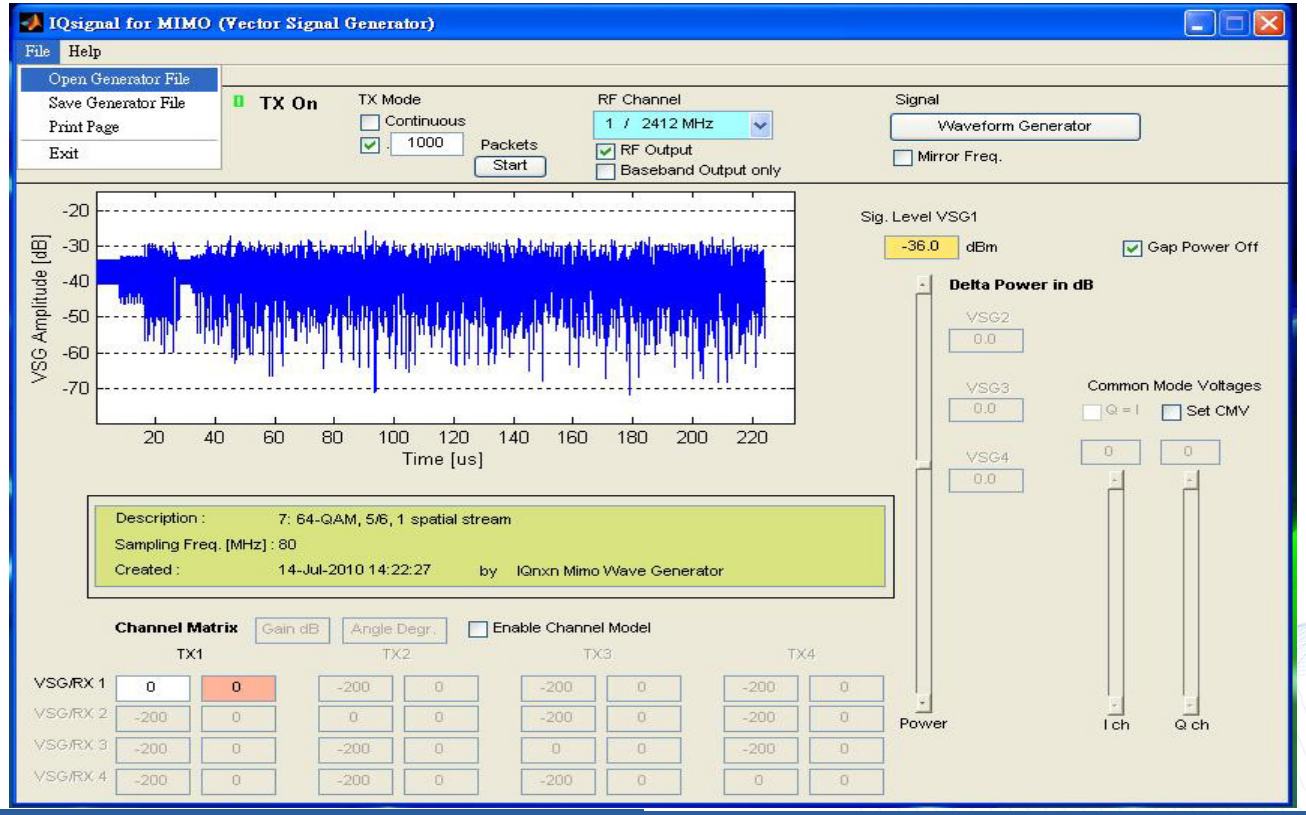
Set up the IQview VSG function for RX test

Step3. The Vector Signal Generator GUI shows below.

Step4. Select File and click Open Generator File to load the wave-form.



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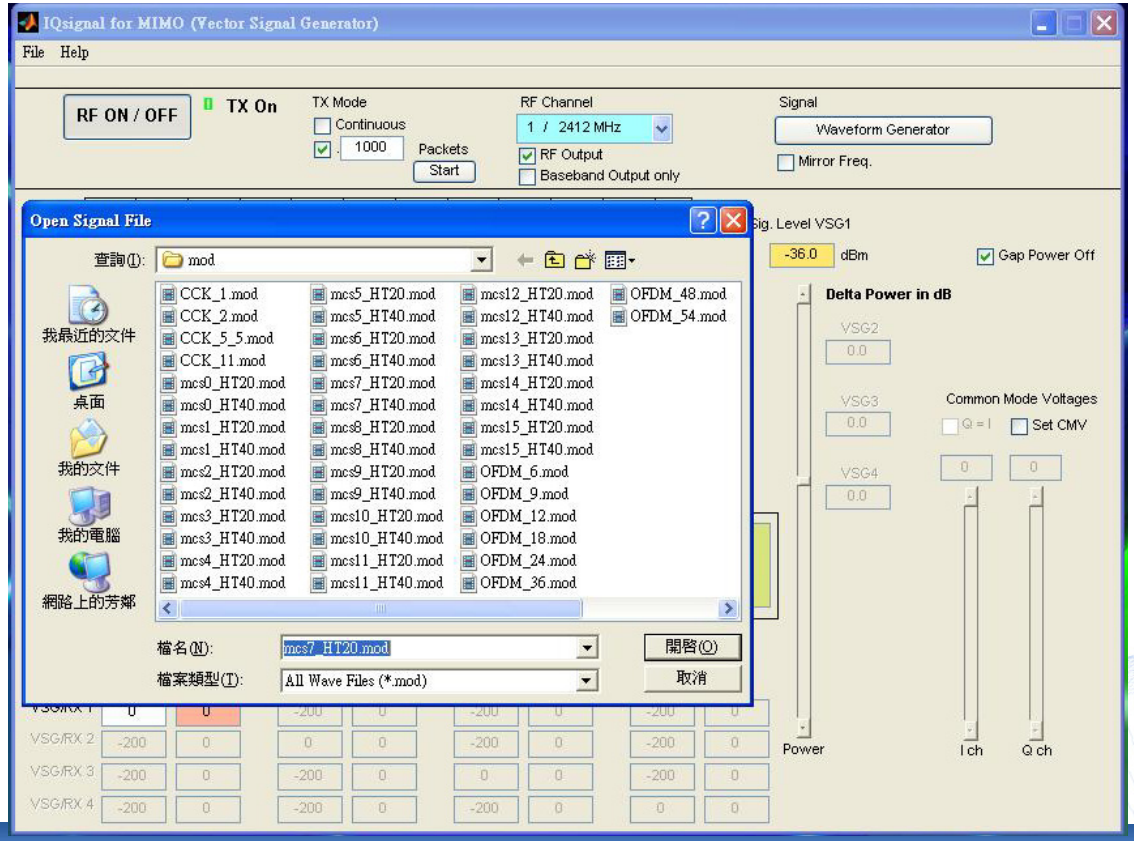
Set up the IQview VSG function for RX test

Step5. From the Open Signal File, select the desired wave-form file and click Open.

For test 802.11b(11M), please select CCK_11.mod
802.11g(54M), please select OFDM_54.mod
802.11n(mcs7), please select mcs7_HT20.mod (IQ MIMO)



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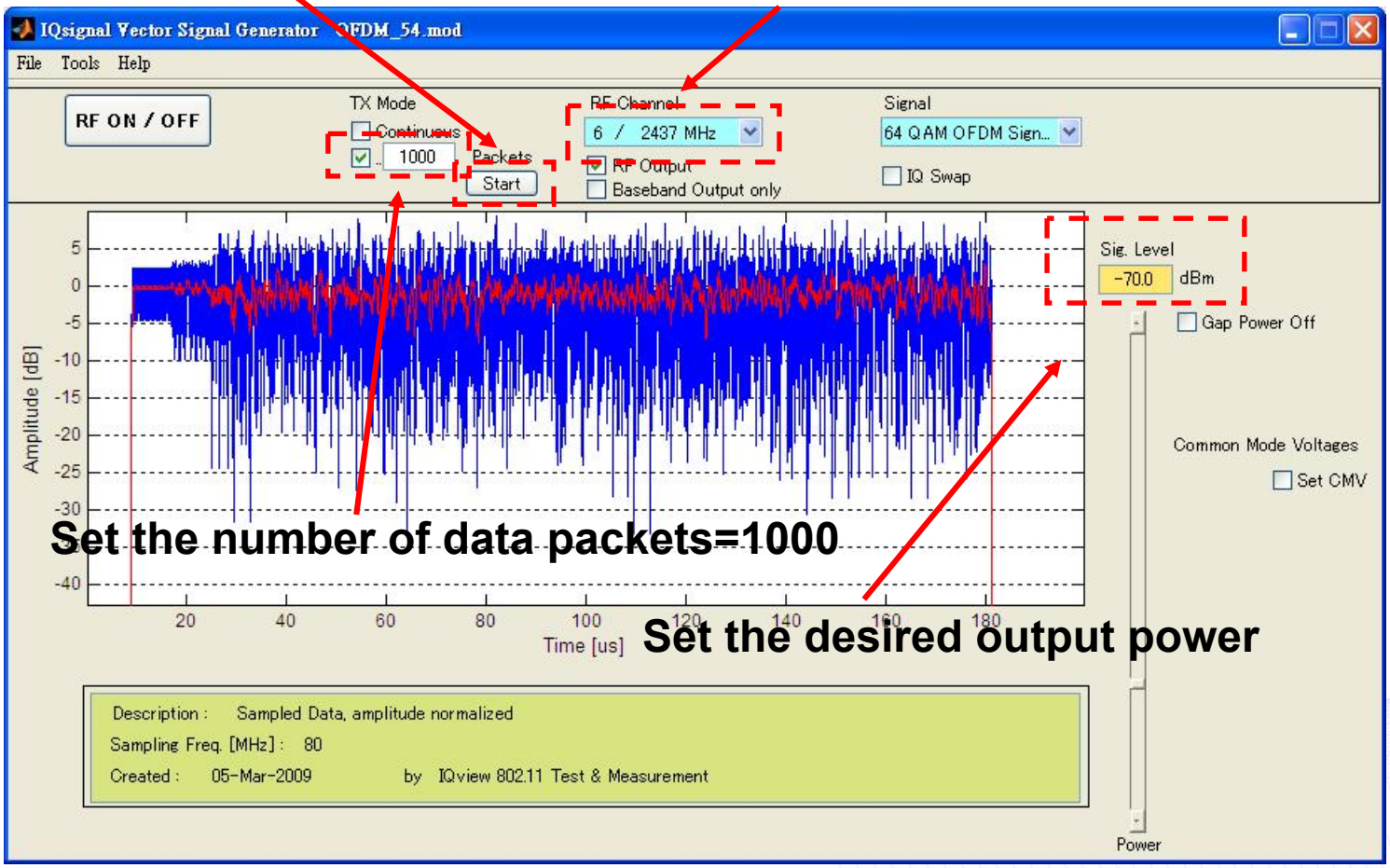
Set up the IQview VSG function for RX test

Click Start to sent packets

Select desired channel



Set the number of data packets=1000

Set the desired output power

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RX test

Step1. Using the WL command below to enter the RX test mode.

RX command

wlu down
wlu mpc 0
wlu country ALL
wlu legacylink 1
wlu scansuppress 1
wlu channel 6 ← **Set the channel**
wlu bi 65535
wlu up
wlu join ee imode adhoc

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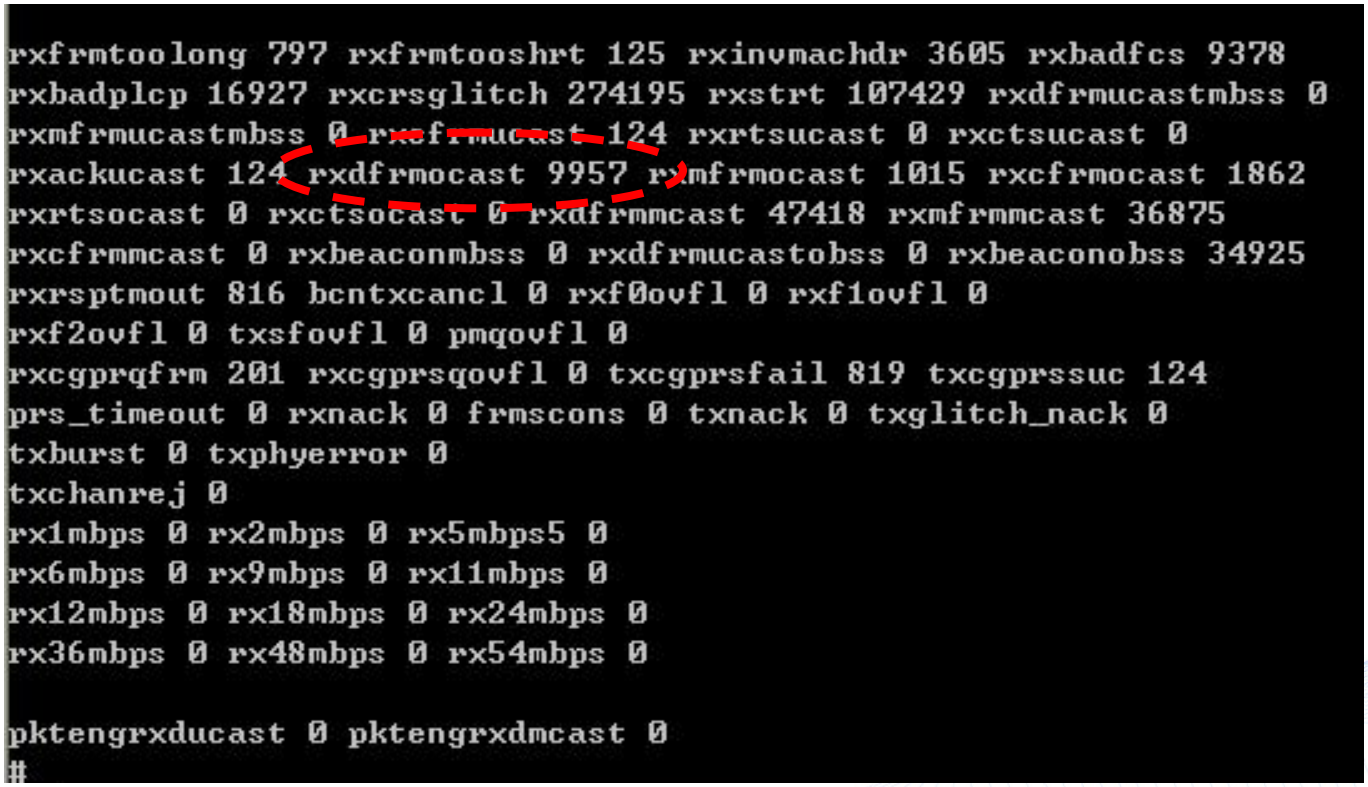
RX test

Step2. Enter the ./wlu counters command and note the number following the rxdfrmocast (9957).



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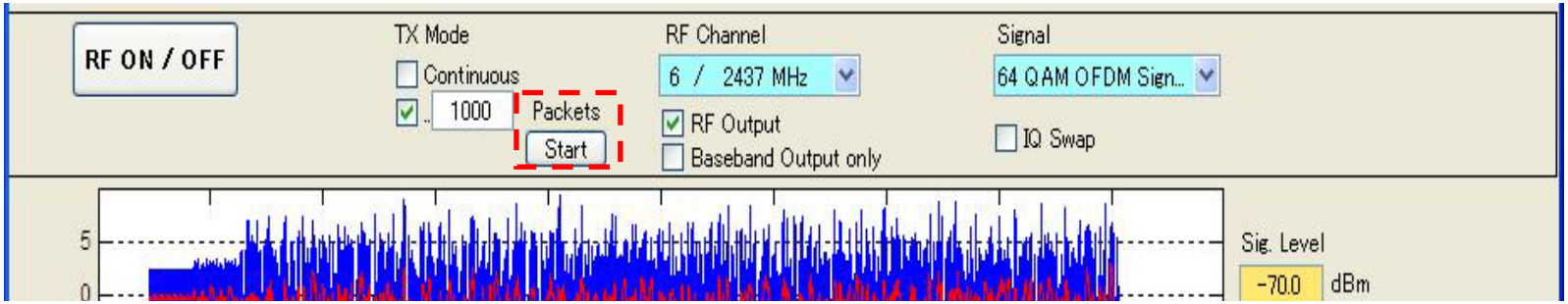
RX test

Step3. Click the Start button and then enter the ./wlu counters command .



Step4. After enter the ./wlu counters command and note the number following the rxdfrmocast (10905).

```
rxfrmtoolong 805 rxfrmtooshrt 125 rxinvmachdr 3622 rxbadfcs 9403
rxbadplcp 16985 rxcrsglitch 279554 rxstrt 108535 rxdfrmucastmbss 0
rxmfrmucastmbss 0 rxcfrmucast 124 rxrtsucast 0 rxctsucast 0
rxackucast 124 rxdfrmocast 10905 rxmfrmocast 1015 rxcfrmocast 1862
rxrtsocast 0 rxctsocast 0 rxdfrmmcast 47418 rxmfrmmcast 37000
rxcfrmmcast 0 rxbeaconmbss 0 rxdfrmucastobss 0 rxbeaconobss 35050
rxrsptmout 816 bcntxcancl 0 rxf0ovfl 0 rxf1ovfl 0
rxf2ovfl 0 txsfovfl 0 pmqovfl 0
rxcgprqfrm 201 rxcgprsqovfl 0 txcgprsfail 819 txcgprssuc 124
prs_timeout 0 rxnack 0 frmscons 0 txnack 0 txglitch_nack 0
txburst 0 txphyerror 0
txchanrej 0
rx1mbps 0 rx2mbps 0 rx5mbps5 0
rx6mbps 0 rx9mbps 0 rx11mbps 0
rx12mbps 0 rx18mbps 0 rx24mbps 0
rx36mbps 0 rx48mbps 0 rx54mbps 0

pktengrxducast 0 pktengrxdmcast 0
#
```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RX test

Step5. The RX PER

= (Total lost packets at receiver / Total sent packets from the VSG)*100%

In this example:

Total packets received = 10905-9957=948.

So, the Total lost packets at receiver = 1000-948 = 52.

Thus, the RX PER = 52/1000 = 5.2% for -70dBm, OFDM 54Mbps

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