# **Anritsu** envision : ensure

## Capturing MT8870A IQ Data

Universal Wireless Test Set MT8870A

### Introduction

This application note explains how to capture IQ data and send it to Anritsu for analysis. Sending IQ data for analysis may be required if, as in the example shown in the figure below, you are able to capture packets but are unable to acquire EVM results.

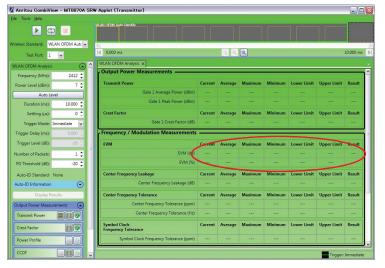


Figure 1. EVM Data Not Generated

#### **Before Capturing IQ Data**

1. Check that the "Power Level" setting is correct. The power level represents the power at which the MT8870A will make measurements.

It should be set to the DUT TX power minus any known path loss between the DUT and the MT8870A. You can click [Auto Level] to set the power automatically to match the data being transmitted from the DUT.

- 2. Check that the frequency is correct for the data being transmitted from the DUT.
- 3. If the wireless standard is set to "WLAN OFDM Auto-ID" or "WLAN 802.11ac" make sure that "Full Mask Enable" is not selected. To do that:
  - (1) Scroll down to the bottom of the CombiView settings frame.
  - (2) Expand the "Spectral Profile Settings" section.
  - (3) Clear (remove the check mark) "Full Mask Enable".

Tools Help								
	WLAN OFDM Auto-1dentity							
less Standard: WLAN OFDM Autc								-
Test Port: 1	[≪] 0.000 ms		્ લ	2				10.000 ms
Auto-ID Standard: None	WLAN OFDM Analysis ×							
uto-ID Information	Output Power Measurements							
Display Results	Transmit Power	Current	Average	Maximum	Minimum	Lower Limit	Upper Limit	Result
utput Power Measurements	Gate 1 Average Power (dBm)							
ransmit Power	Gate 1 Peak Power (dBm)							
	Crest Factor	Current	Average	Maximum	Minimum	Lower Limit	Upper Limit	Result
	Gate 1 Crest Factor (dB)							
Power Profile	Frequency / Modulation Measurements							
	EVM							
		Current	Average	Maximum	Minimum	Lower Limit	Upper Limit	Result
	EVM (dB)		Average	Maximum	Minimum	Lower Limit	Upper Limit	Result
equency / Modulation Measurer 🕥			-					
ectral Measurements	EVM (d8) EVM (%)							
ectral Measurements	EVM (dB)							
ectral Measurements	EVM (d8) EVM (d8) Center Frequency Leakage Center Frequency Leakage (d8)	  Current	 Average	  Maximum	···· ···	  Lower Limit	Upper Limit	  Result
ectral Measurements	EVM (d8) EVM (%) Center Frequency Leakage	  Current	  Average	  Maximum 	···· Minimum	  Lower Limit	  Upper Limit	 Result
ectral Measurements	EVM (d8) EVM (d3) Center Frequency Leakage Center Frequency Leakage (d8) Center Frequency Tolerance	Current Current	Average Average	 Maximum  Maximum	 Minimum 	 Lower Limit Lower Limit	Upper Limit	Result Result
ectral Measurements	EVM (d8) EVM (d8) Center Frequency Leakage Center Frequency Leakage (d8) Center Frequency Tolerance Center Frequency Tolerance (ppm)	Current Current	Average Average Average	Maximum Maximum	Minimum Minimum	 Lower Limit  Lower Limit	Upper Limit	Result Result

Figure 2. Full Mask Enable Setting

### **Capturing IQ Data**

- 1. Select Tools > Download IQ Data.
- 2. Click [Save] to save the .txt file to the desired location.
- 3. Open the file and check that it is populated with the capture information and the IQ data as shown in the example below.

Number Of Segments,1
Capture Status,0
Segment Index,1
Segment Status,0
Segment Offset,0
Segment Width 200000
Number Of Packets,8
Packet Index.1
Packet Status.0
Packet Offset,21048
Packet Width, 12680
Packet Index,2
Packet Status.0
Packet Offset.42424
Packet Width, 12680
Packet Index,3
Packet Status,0
Packet Offset,63800
Packet Width, 12680
Packet Index,4
Packet Status,0
Packet Offset,85176
Packet Width, 12680
Packet Index,5
Packet Status,0
Packet Offset, 106552
Packet Width, 12680
Packet Index,6
Packet Status,0
Packet Offset, 127928
Packet Width, 12680
Packet Index,7
Packet Status,0
Packet Offset, 149304
Packet Width, 12680
Packet Index,8
Packet Status,0
Packet Offset, 170680
Packet Width, 12680
Segment IQ Data
-0.7132454,0.4341583
-0.2164652,0.6140429
-0.04358978,0.4660832
-0.2323765,0.0141718
-0.5436955,-0.6993294
-0.6841856,-1.209463
-0.5841132,-0.98077
-0.6662278-0.1620291
-0.7879415,0.7700861
-0.481841,1.259601
0.4025404,1.090972
1.493666.0.7634863
1.100000,0.1001000

Figure 3. IQ Data

4. Send the file to Anritsu for analysis.