

W52 & W53 bands: 802.11ac (VHT80)

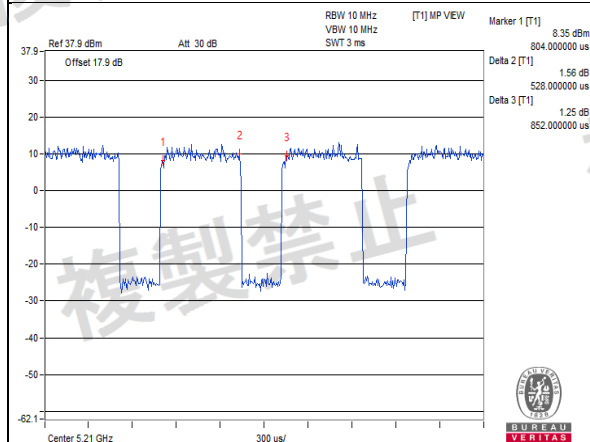
Environmental Conditions	25 deg.C, 60 % RH	
Test Condition	Burst Length (ms)	
	CH 42 5210MHz	CH 58 5290MHz
V _{normal}	0.52	0.49
V _{max.}	0.52	0.53
V _{min.}	0.53	0.49

W56 band: 802.11ac (VHT80)

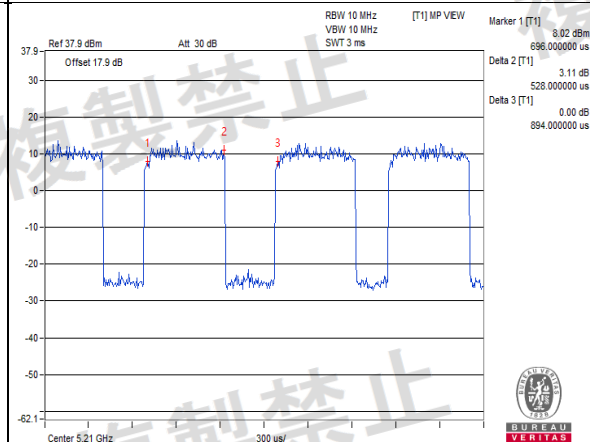
Environmental Conditions	25 deg.C, 60 % RH	
Test Condition	Burst Length (ms)	
	CH 106 5530MHz	CH 122 5610MHz
V _{normal}	0.52	0.49
V _{max.}	0.52	0.53
V _{min.}	0.52	0.53

Note: The spectrum plots are attached on the following pages.

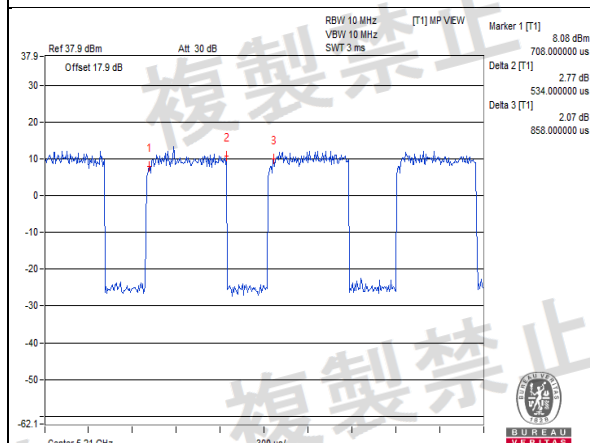
V_{normal}



V_{max}

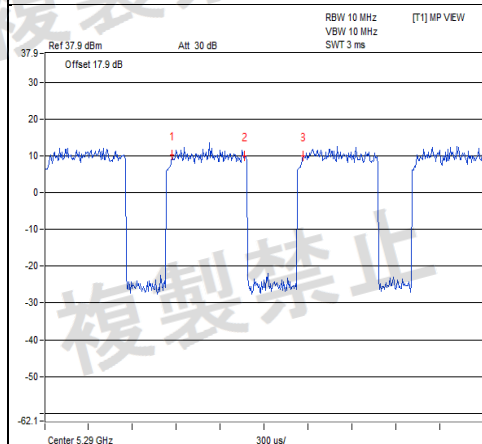


V_{min}



CH 42 (5210MHz)

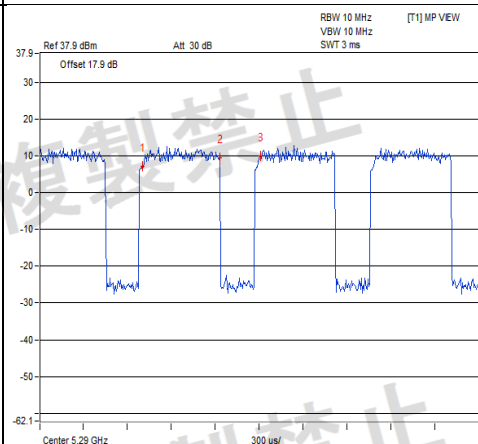
Vnormal



Marker 1 [T1]
10.34 dBm
864.000000 us
Delta 2 [T1]
0.19 dB
498.000000 us
Delta 3 [T1]
0.19 dB
900.000000 us



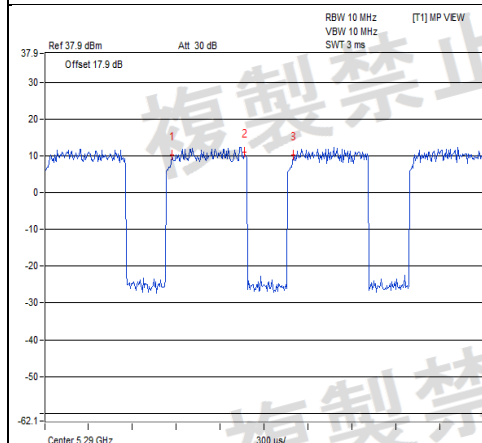
Vmax.



Marker 1 [T1]
7.16 dBm
666.000000 us
Delta 2 [T1]
2.44 dB
534.000000 us
Delta 3 [T1]
2.99 dB
810.000000 us



Vmin.

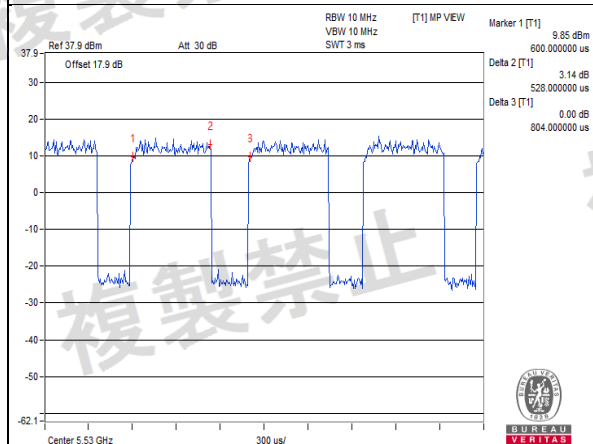


Marker 1 [T1]
10.18 dBm
864.000000 us
Delta 2 [T1]
0.77 dB
498.000000 us
Delta 3 [T1]
0.00 dB
834.000000 us

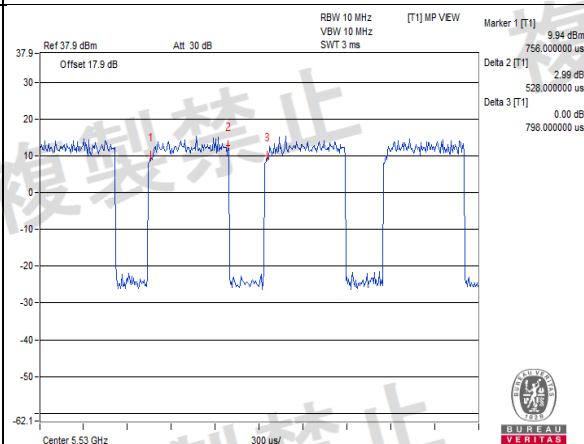


CH 58 (5290MHz)

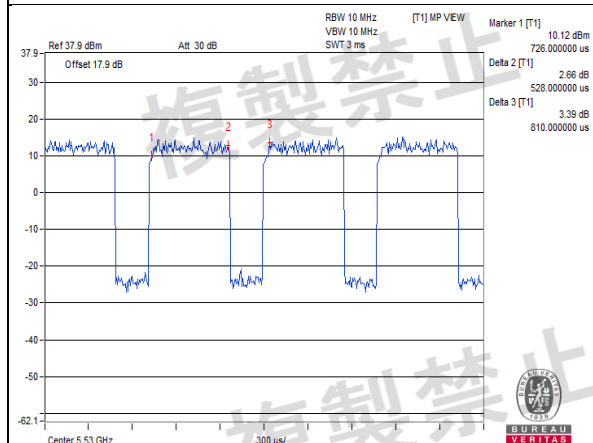
Vnormal



Vmax.

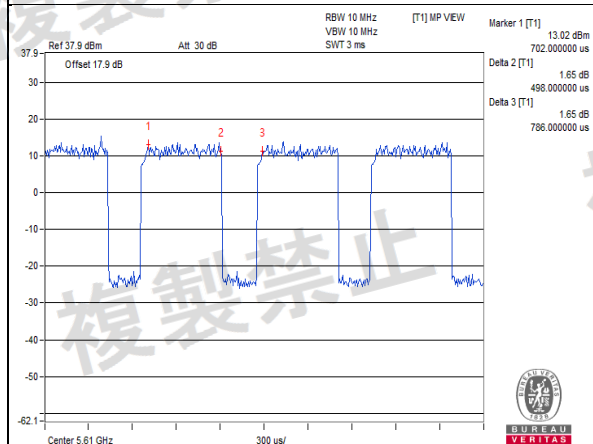


Vmin.

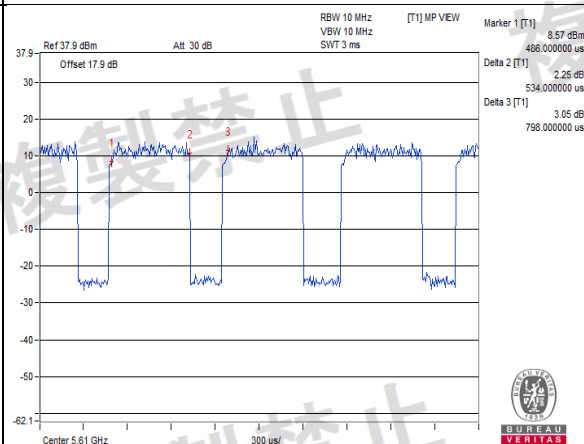


CH 106 (5530MHz)

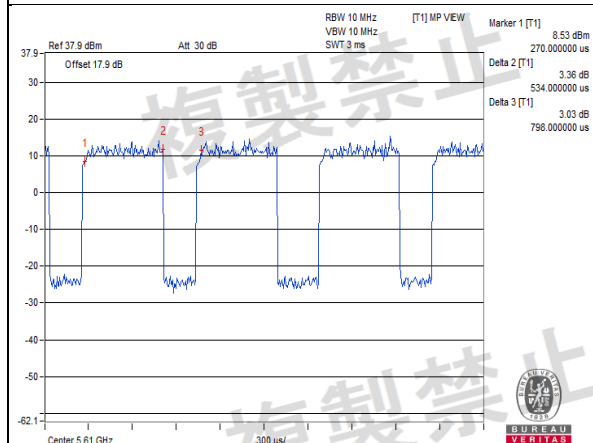
Vnormal



Vmax.



Vmin.



CH 122 (5610MHz)

W52 & W53 bands: 802.11ax (HE20)

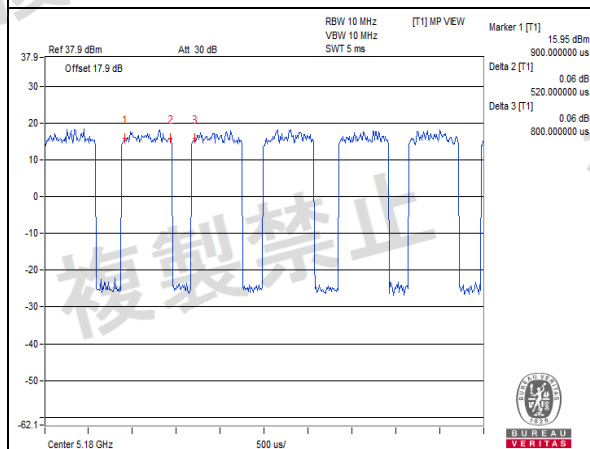
Environmental Conditions	25 deg.C, 60 % RH			
Test Condition	Burst Length (ms)			
	CH 36 5180MHz	CH 48 5240MHz	CH 52 5260MHz	CH 64 5320MHz
V_{normal}	0.52	0.53	0.54	0.54
$V_{max.}$	0.52	0.53	0.53	0.55
$V_{min.}$	0.53	0.53	0.55	0.54

W56 band: 802.11ax (HE20)

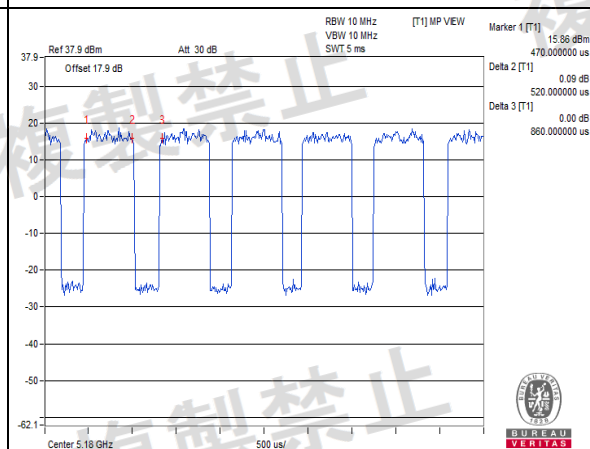
Environmental Conditions	25 deg.C, 60 % RH		
Test Condition	Burst Length (ms)		
	CH 100 5500MHz	CH 120 5600MHz	CH140 5700MHz
V_{normal}	0.53	0.51	0.57
$V_{max.}$	0.53	0.55	0.55
$V_{min.}$	0.54	0.54	0.55

Note: The spectrum plots are attached on the following pages.

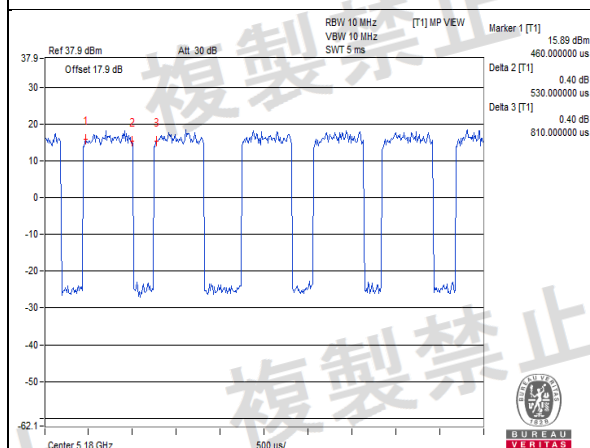
Vnormal



Vmax.

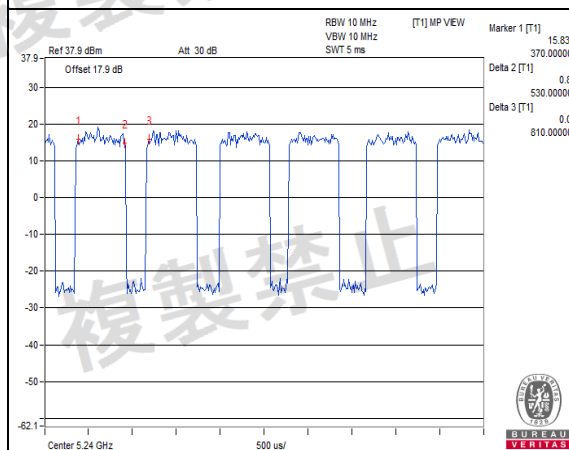


Vmin.

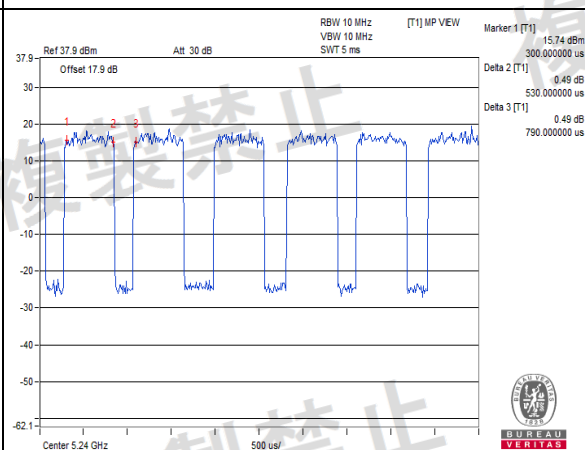


CH 36 (5180MHz)

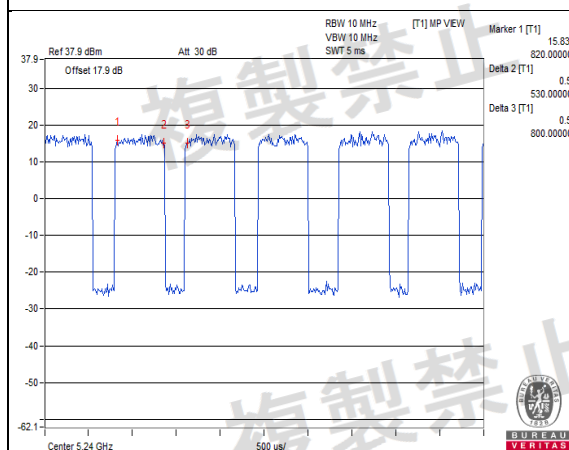
Vnormal



Vmax.

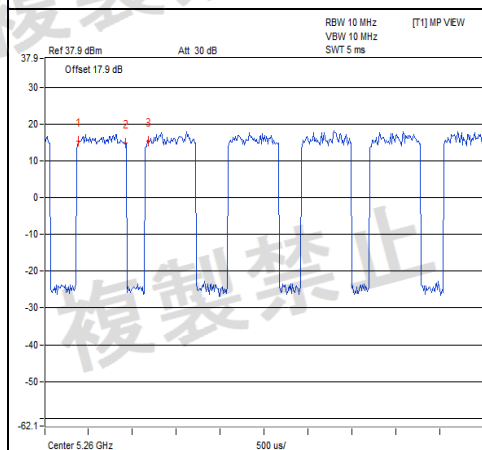


Vmin.

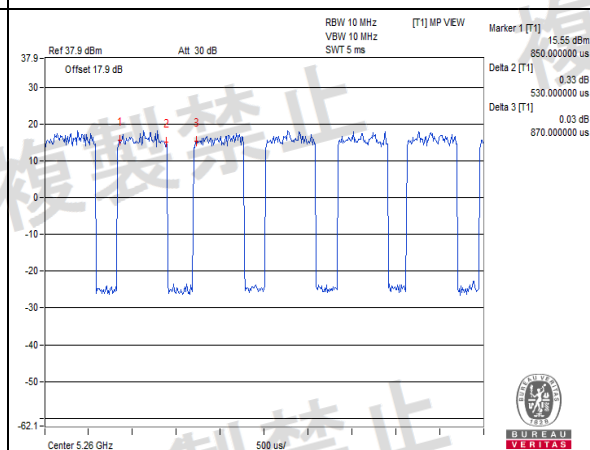


CH 48 (5240MHz)

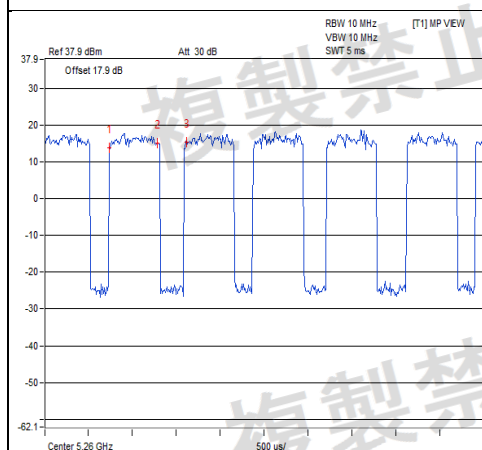
Vnormal



Vmax.



Vmin.

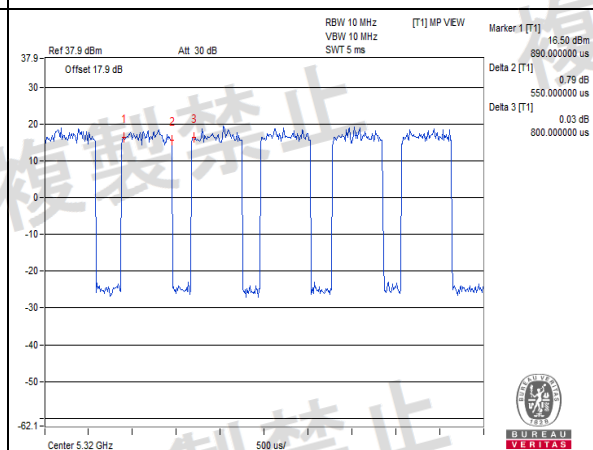


CH 52 (5260MHz)

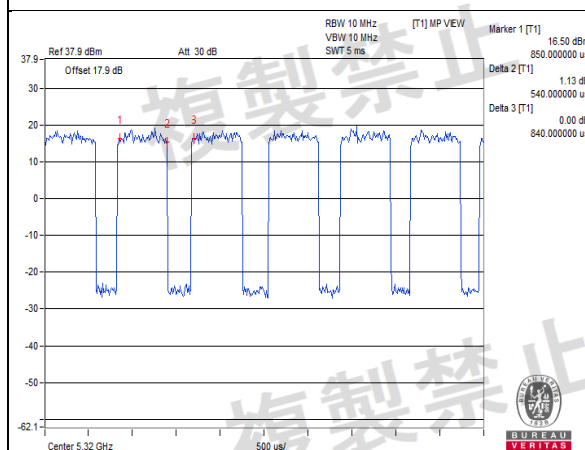
Vnormal



Vmax.

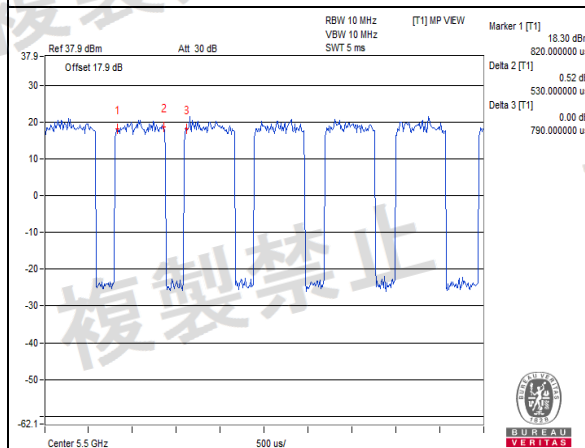


Vmin.

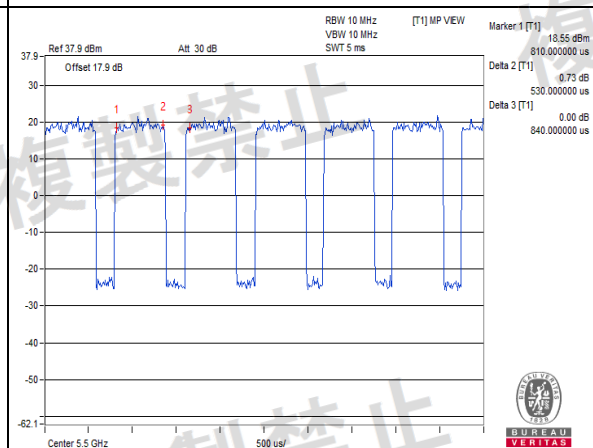


CH 64 (5320MHz)

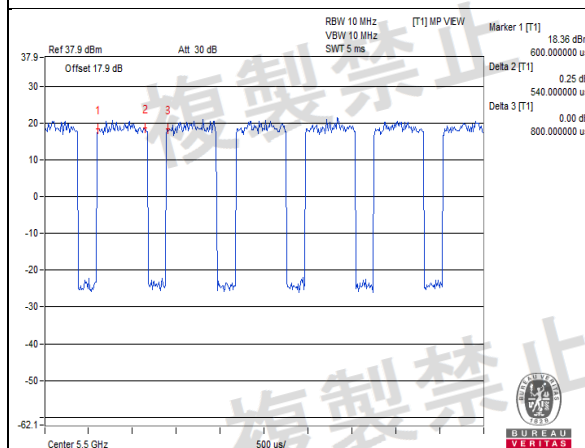
Vnormal



Vmax.



Vmin.

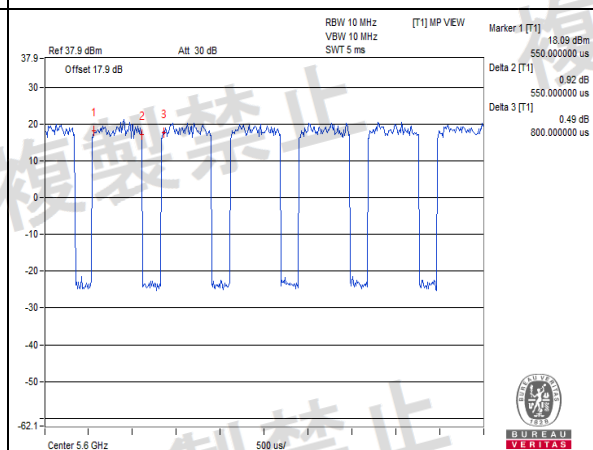


CH 100 (5500MHz)

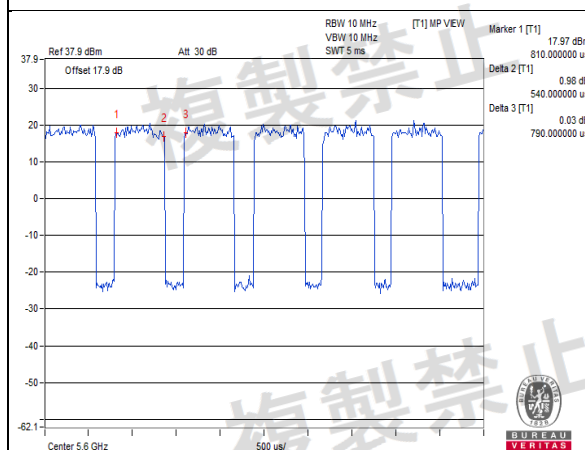
Vnormal



Vmax.



Vmin.

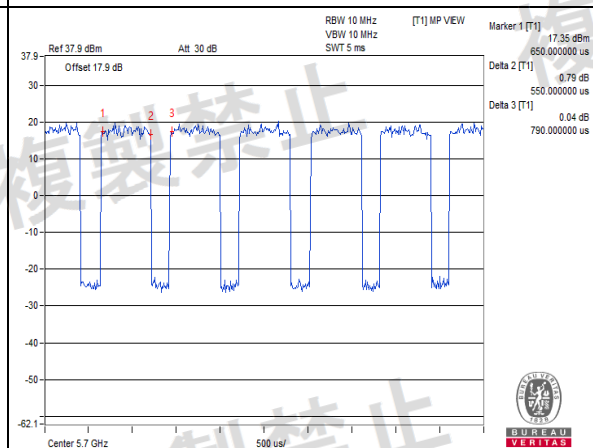


CH 120 (5600MHz)

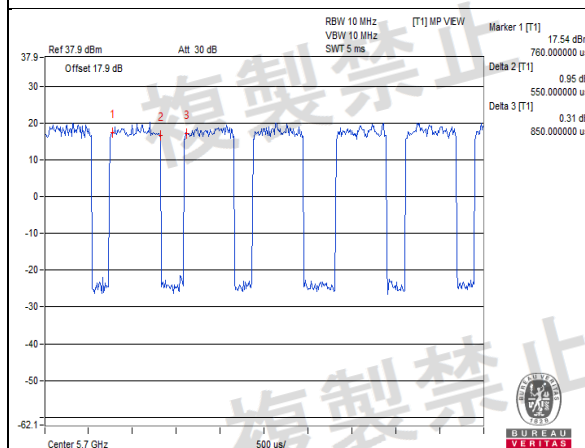
Vnormal



Vmax.



Vmin.



CH 140 (5700MHz)

W52 & W53 bands: 802.11ax (HE40)

Environmental Conditions	25 deg.C, 60 % RH			
Test Condition	Burst Length (ms)			
	CH 38 5190MHz	CH 46 5230MHz	CH 54 5270MHz	CH 62 5310MHz
V _{normal}	0.52	0.53	0.52	0.50
V _{max.}	0.55	0.49	0.51	0.51
V _{min.}	0.53	0.55	0.50	0.48

W56 band: 802.11ax (HE40)

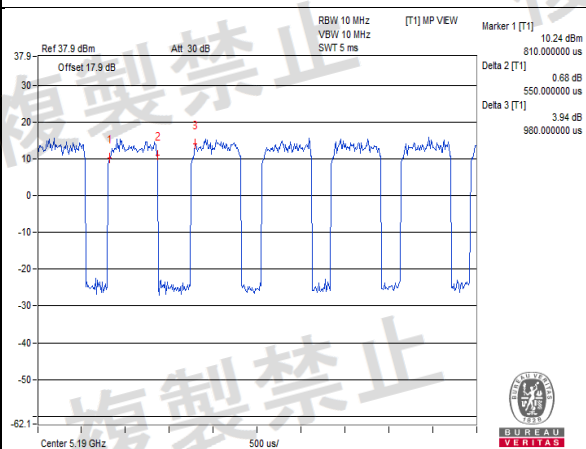
Environmental Conditions	25 deg.C, 60 % RH		
Test Condition	Burst Length (ms)		
	CH 102 5510MHz	CH 118 5590MHz	CH 134 5670MHz
V _{normal}	0.53	0.48	0.50
V _{max.}	0.51	0.49	0.51
V _{min.}	0.49	0.52	0.53

Note: The spectrum plots are attached on the following pages.

V_{normal}



V_{max.}

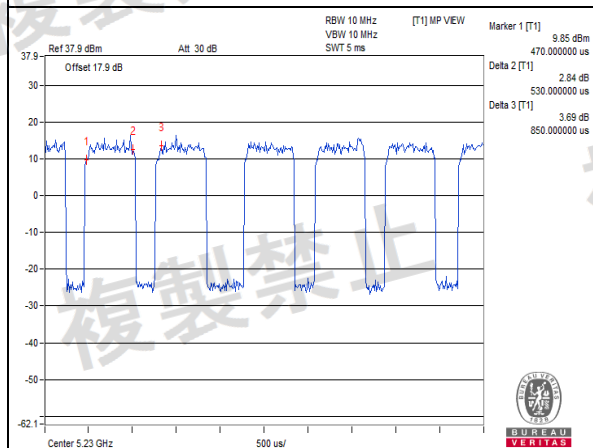


V_{min.}

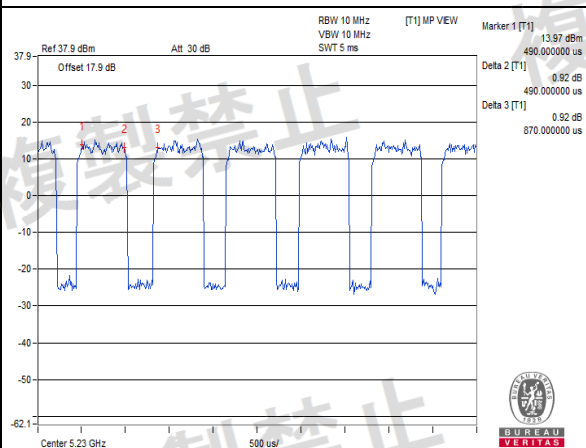


CH 38 (5190MHz)

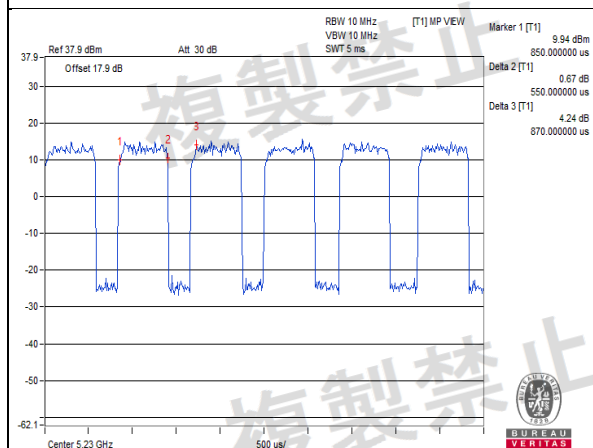
Vnormal



Vmax.

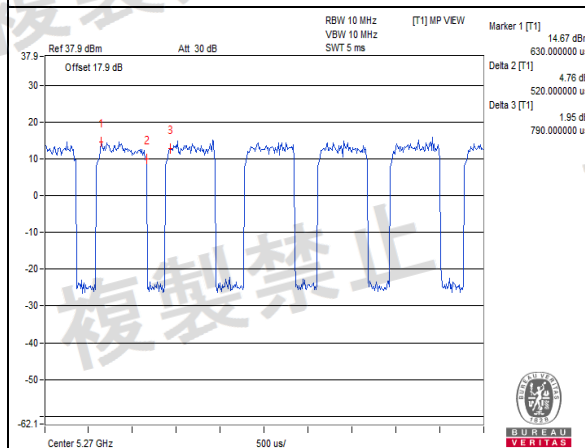


Vmin.

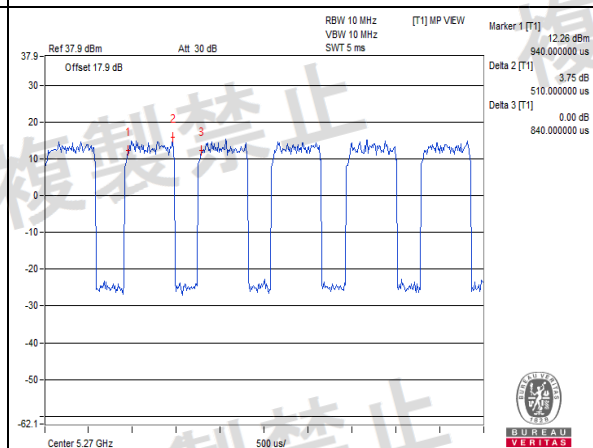


CH 46 (5230MHz)

Vnormal



Vmax.



Vmin.

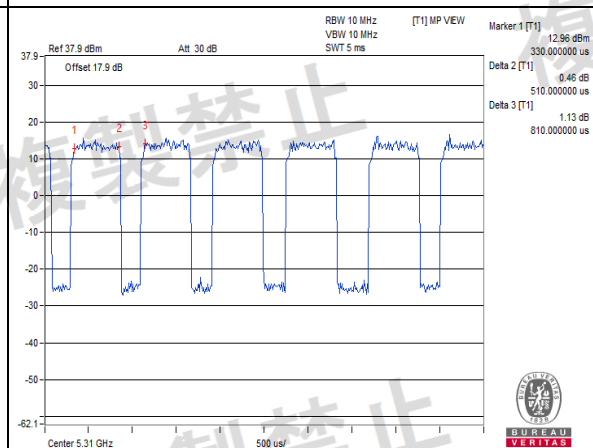


CH 54 (5270MHz)

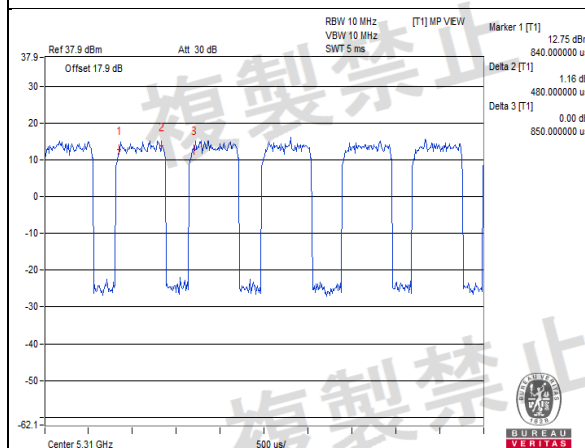
Vnormal



Vmax.

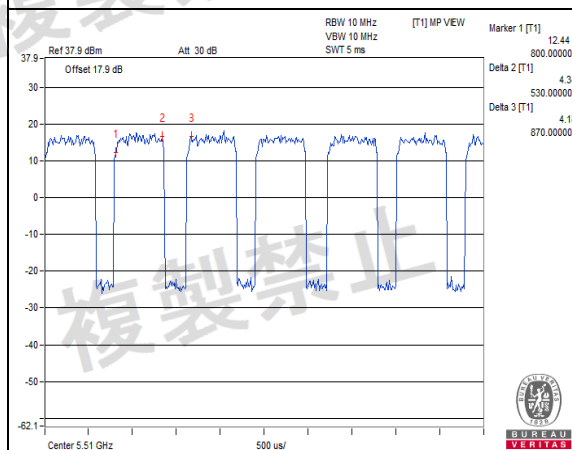


Vmin.

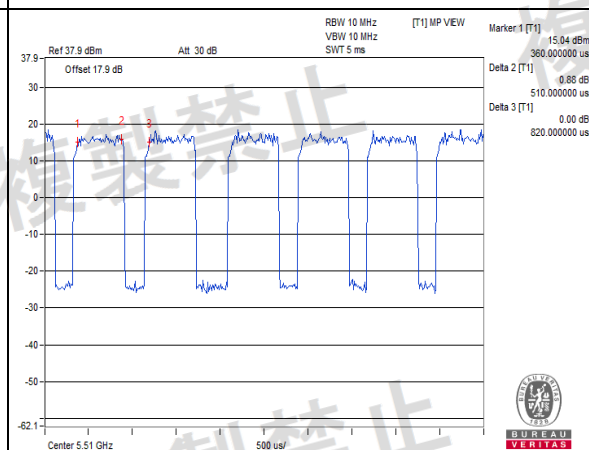


CH 62 (5310MHz)

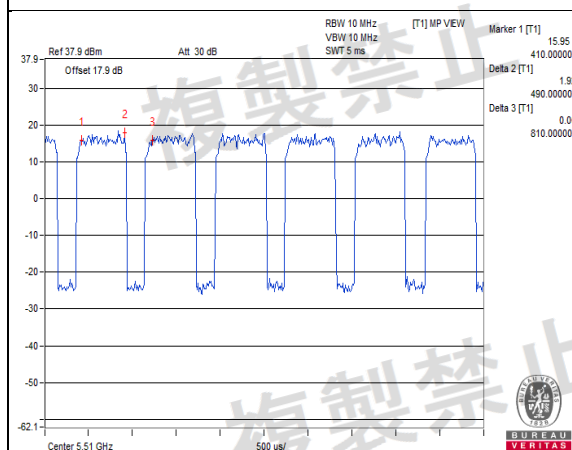
V_{normal}



V_{max.}

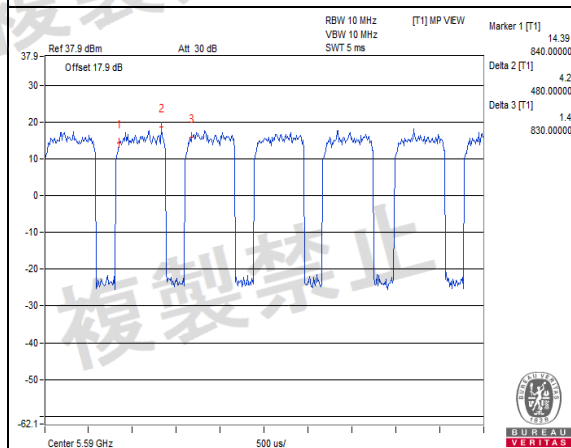


V_{min.}

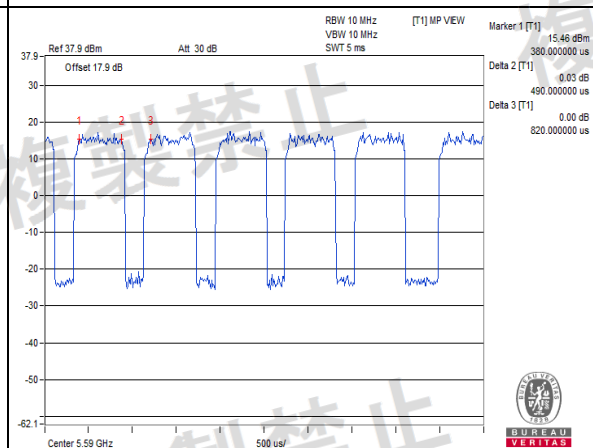


CH 102 (5510MHz)

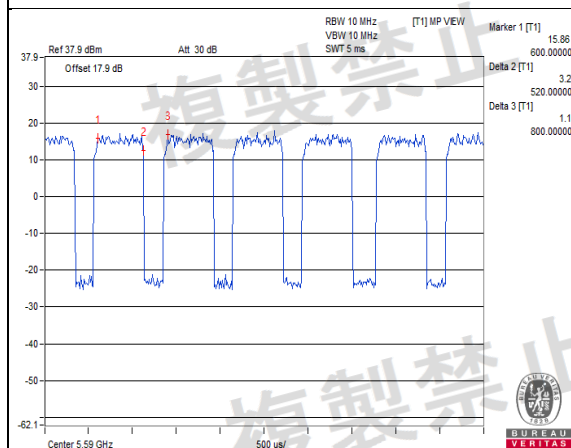
Vnormal



Vmax.

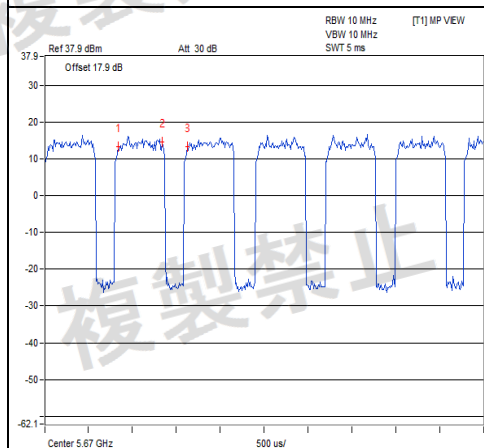


Vmin.



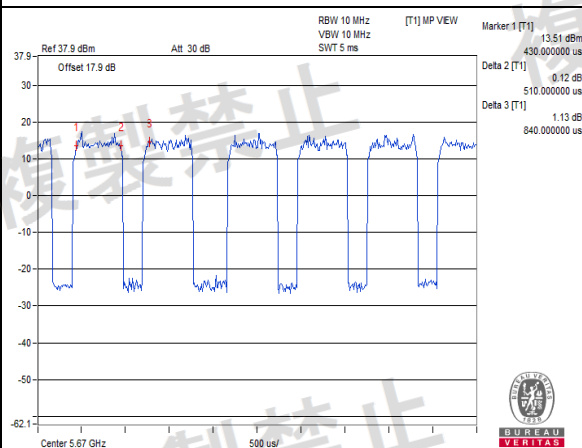
CH 118 (5590MHz)

Vnormal



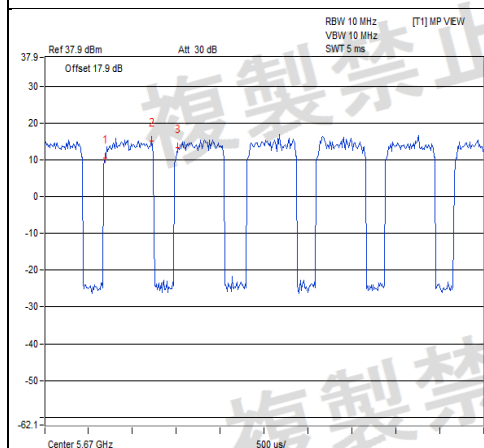
Marker 1 [T1] 13.23 dBm
830.000000 us
Delta 2 [T1] 1.35 dB
500.000000 us
Delta 3 [T1] 0.00 dB
790.000000 us

Vmax.



Marker 1 [T1] 13.51 dBm
430.000000 us
Delta 2 [T1] 0.12 dB
510.000000 us
Delta 3 [T1] 1.13 dB
840.000000 us

Vmin.



Marker 1 [T1] 10.58 dBm
680.000000 us
Delta 2 [T1] 4.46 dB
530.000000 us
Delta 3 [T1] 2.84 dB
830.000000 us

CH 134 (5670MHz)

W52 & W53 bands: 802.11ax (HE80)

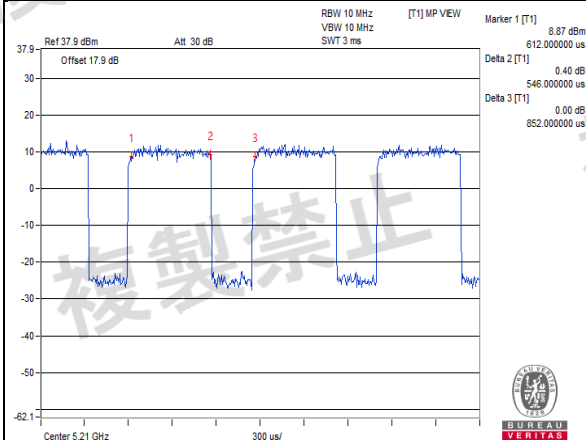
Environmental Conditions	25 deg.C, 60 % RH	
Test Condition	Burst Length (ms)	
	CH 42 5210MHz	CH 58 5290MHz
V _{normal}	0.54	0.54
V _{max.}	0.54	0.53
V _{min.}	0.54	0.54

W56 band: 802.11ax (HE80)

Environmental Conditions	25 deg.C, 60 % RH	
Test Condition	Burst Length (ms)	
	CH 106 5530MHz	CH 122 5610MHz
V _{normal}	0.54	0.54
V _{max.}	0.52	0.52
V _{min.}	0.54	0.54

Note: The spectrum plots are attached on the following pages.

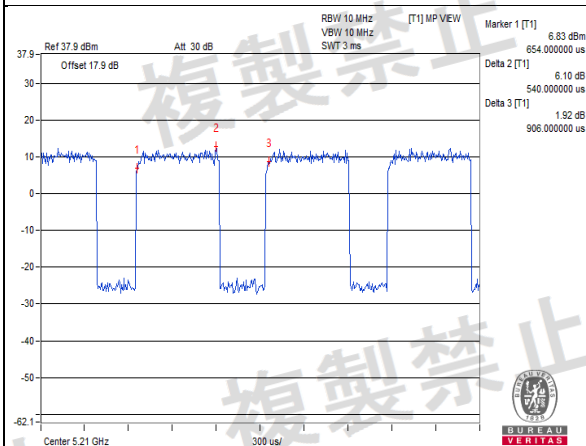
Vnormal



Vmax.

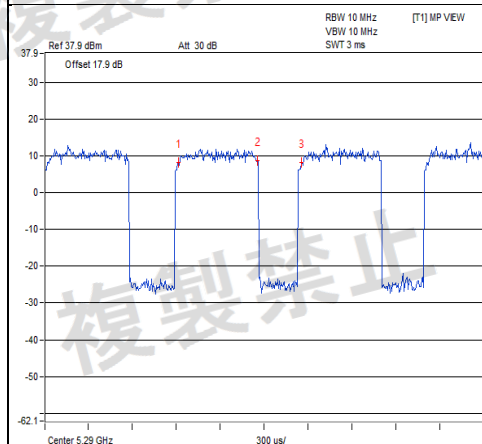


Vmin.



CH 42 (5210MHz)

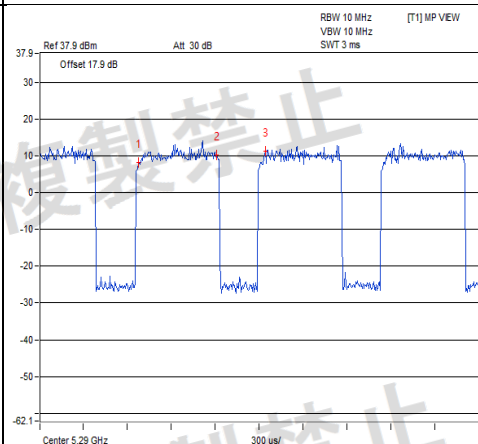
Vnormal



Marker 1 [T1]
8.23 dBm
912.000000 us
Delta 2 [T1]
0.46 dB
540.000000 us
Delta 3 [T1]
0.00 dB
840.000000 us



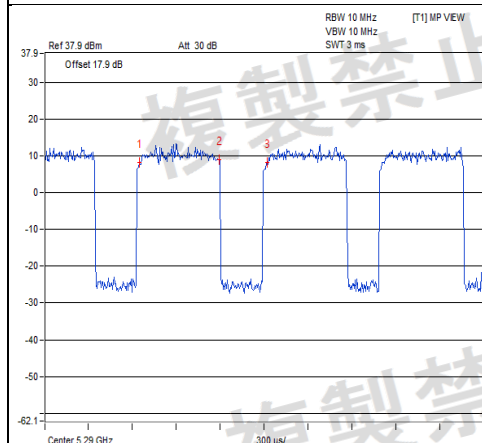
Vmax.



Marker 1 [T1]
8.17 dBm
672.000000 us
Delta 2 [T1]
2.04 dB
534.000000 us
Delta 3 [T1]
3.05 dB
870.000000 us



Vmin.

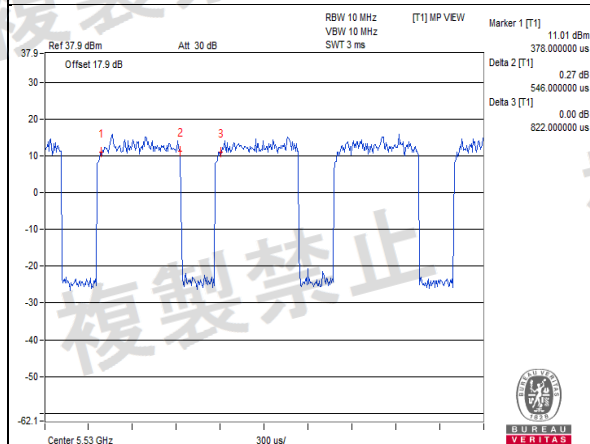


Marker 1 [T1]
8.14 dBm
642.000000 us
Delta 2 [T1]
0.82 dB
546.000000 us
Delta 3 [T1]
0.12 dB
876.000000 us

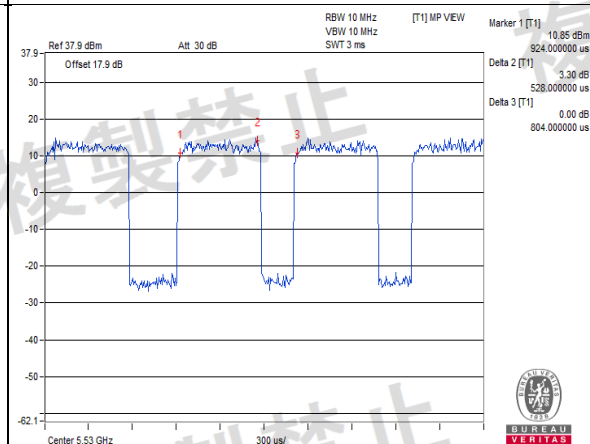


CH 58 (5290MHz)

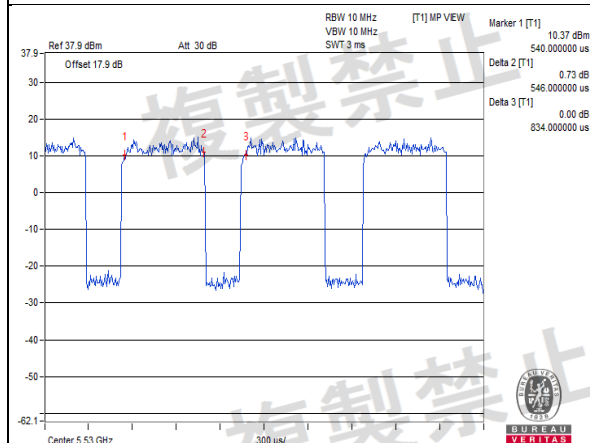
Vnormal



Vmax.

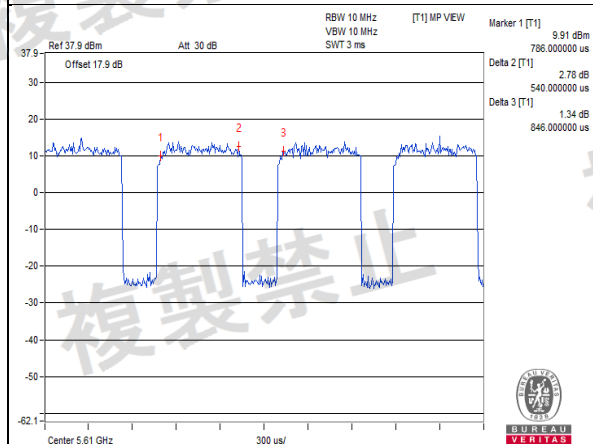


Vmin.

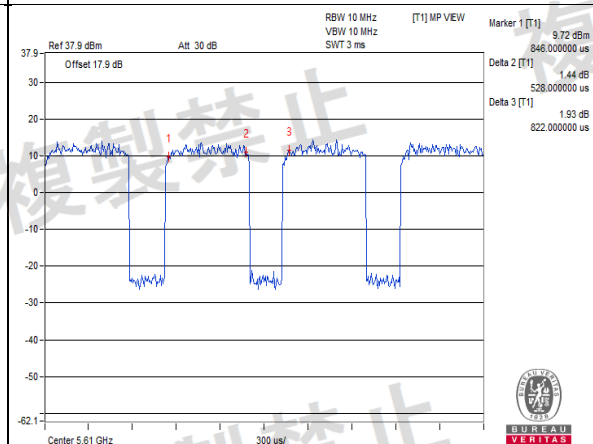


CH 106 (5530MHz)

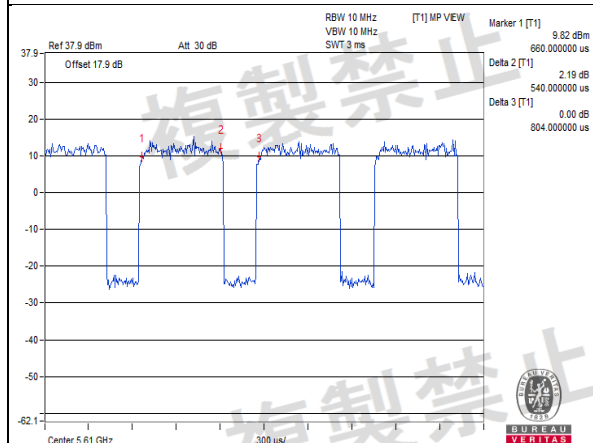
Vnormal



Vmax.



Vmin.



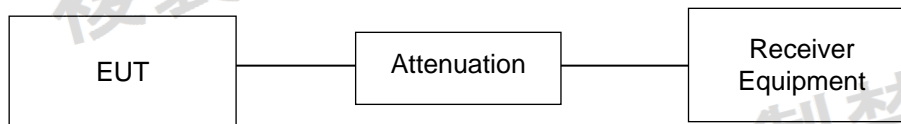
CH 122 (5610MHz)

4.9 Interference Prevention Function

4.9.1 Limits of Interference Prevention Function

Radio equipment used mainly on the same premises and automatically transmits or receives identification code.

4.9.2 Test Setup

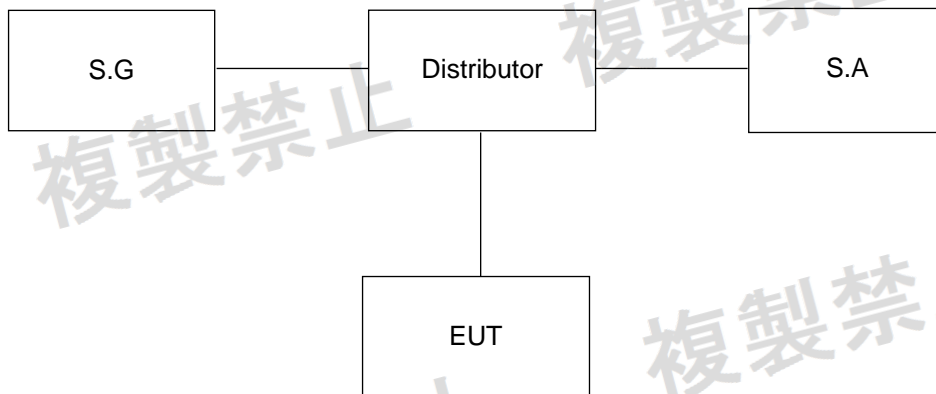


4.9.3 Test Results

Environmental Conditions	25 deg.C, 60 % RH
Link Mode	Test Result
WiFi-5GHz	Pass

4.10 Carrier Sense Capability

4.10.1 Measuring System Block Diagram



4.10.2 Measuring Operation Procedures

- Turn the standard signal generator output OFF. Leave the equipment under test to be ready for transmission and verify the transmission with the spectrum analyzer.
- Set the equipment under test to the receiving state.
- Turn the standard signal generator ON and leave the equipment under test to be ready for transmission and verify with the spectrum analyzer that no transmission is being made.

4.10.3 Level of the Ambient Carrier

802.11a / 802.11n (HT20) / 802.11ac (VHT20) / 802.11ax (HE20)

Frequency (MHz)	Pcs (dBm)
5180	-48.50
5240	-48.60
5260	-48.63
5320	-48.73
5500	-49.02
5600	-49.18
5700	-49.33

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (**5GHz: 3dBi**).

F: Transmission frequency (MHz).

802.11n (HT40) / 802.11ac (VHT40) / 802.11ax (HE40)

Frequency (MHz)	Pcs (dBm)
5190	-48.52
5230	-48.58
5270	-48.65
5310	-48.71
5510	-49.04
5590	-49.16
5670	-49.28

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (**5GHz: 3dBi**).

F: Transmission frequency (MHz).

802.11ac (VHT80) / 802.11ax (HE80)

Frequency (MHz)	Pcs (dBm)
5210	-48.55
5290	-48.68
5530	-49.07
5610	-49.19

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (**5GHz: 3dBi**).

F: Transmission frequency (MHz).

4.10.4 Test Result

Environmental Conditions	25 deg.C, 60 % RH
Link Mode	Test Result
WiFi-5GHz	Pass

4.11 Number of Carriers within 1 MHz Bandwidth in OFDM

4.11.1 Limit of Number of Carriers

For each 1MHz bandwidth in OFDM, there should be at least 1 carrier.

4.11.2 Test Setup



4.11.3 Test Result

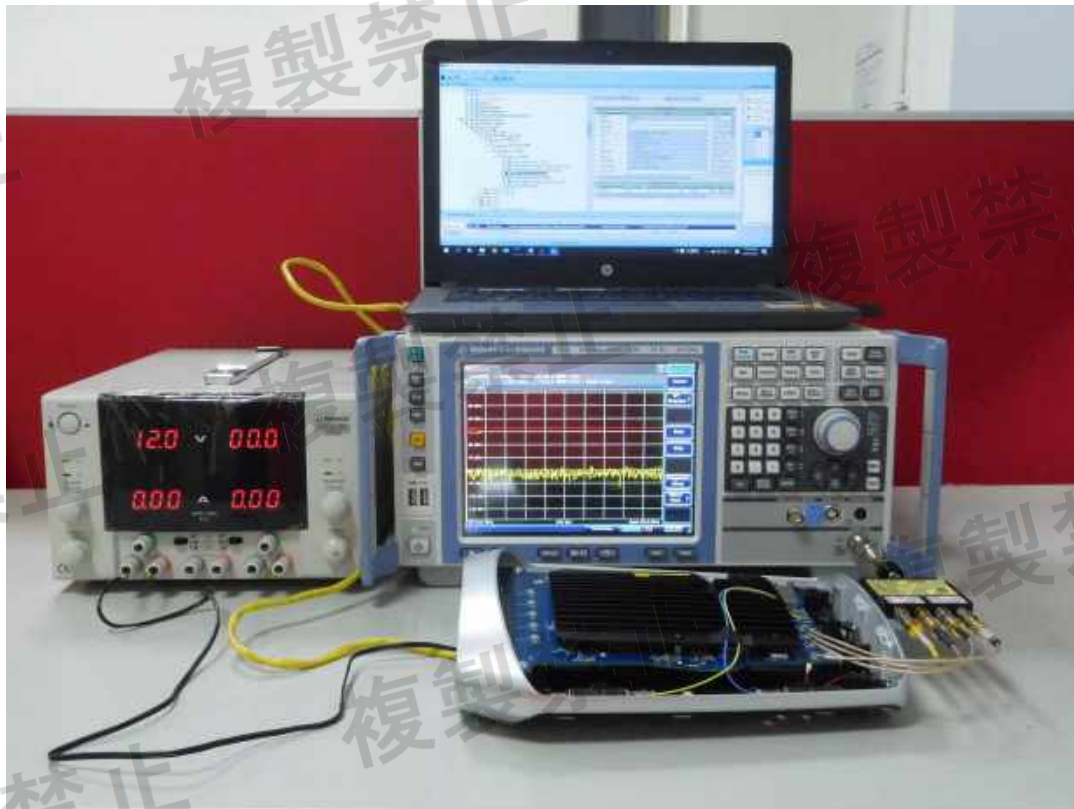
About OFDM Technical, one OFDM Channel will have 52 sub-carriers. At present, we observe this product via the spectrum, and we know that there are 3 carriers in 1 MHz bandwidth in OFDM.

5 Photographs of the Test Configuration

For W52+W53



For W56



Appendix - Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

--- END ---