

FCC - TEST REPORT

| Report Number | : | 708882407771-00B | | Date of Issue: | October 23, 2024 |
|-------------------------------------|---|--|--------------------------|-----------------------------------|-----------------------------------|
| | | | | | |
| Model | : | PI3501 | | | |
| Product Type | : | Pet Water Fountain | | | |
| Applicant | : | Hiigge Co., Ltd. | | | |
| Address | : | Room 208,Floor 12,Bu 201100 Shanghai, PE | uilding 1, 1 OPLE'S R | No.588 Zixing Ro EPUBLIC OF Cl | oad, Minhang District, HINA |
| Production Facility | : | Dongguan Miha Intelli | gent Tech | nology Co., Ltd | |
| Address | : | Building 2, No. 15, Do City, Guangdong Prov | ngfang Ro ince, PEC | oad, Beizha, Hun)PLE'S REPUBL | nen Town, Dongguan IC OF CHINA |
| | | | | | |
| Test Result | : | Positive | l Negative | 9 | |
| Total pages including Appendices | : | 70 | | | |

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1 Table of Contents

| 1 | Ta | able of Contents | 2 |
|----|----|---|----|
| 2 | D | etails about the Test Laboratory | 3 |
| 3 | D | escription of the Equipment under Test | 4 |
| 4 | S | ummary of Test Standards | 6 |
| 5 | S | ummary of Test Results | 7 |
| 6 | G | Seneral Remarks | 9 |
| 7 | Te | est Setups | 10 |
| 8 | S | ystems test configuration | 13 |
| 9 | Te | echnical Requirement | 14 |
| 9 | .1 | Conducted Emission | 14 |
| 9 | .2 | Conducted peak output power | 17 |
| 9 | .3 | 6dB bandwidth | 19 |
| 9 | .4 | Power spectral density | 23 |
| 9 | .5 | Spurious RF conducted emissions | 27 |
| 9 | .6 | Band edge | 37 |
| 9 | .7 | Spurious radiated emissions for transmitter | 44 |
| 10 | | Test Equipment List | 67 |
| 11 | | System Measurement Uncertainty | 68 |
| 12 | | Photographs of Test Set-ups | 69 |
| 13 | | Photographs of EUT | 70 |



2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

| Company name: | TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch No.16 Lane, 1951 Du Hui Road, Shanghai 201108, P.R. China |
|----------------------------|--|
| Telephone: | +86 21 6141 0123 |
| Fax: | +86 21 6140 8600 |
| FCC Registration No.: | 820234 |
| FCC Designation Number: | CN1183 |
| ISED CAB identifier | CN0101 |
| IC Registration No.: | 31668 |



3 Description of the Equipment under Test

| Product: | Pet Water Fountain |
|-------------------------------|--|
| Model no.: | PI3501 |
| FCC ID: | 2BK23-P351 |
| Options and accessories: | NA |
| Rating: | AC 120V/60Hz by adaptor; input: 5V, 2A |
| RF Transmission Frequency: | 802.11b/g/n-HT20: 2412~2462 MHz |
| No. of Operated Channel: | 11 for 802.11b/802.11g/802.11n(H20) |
| Modulation: | Direct Sequence Spread Spectrum (DSSS) for 802.11b Orthogonal Frequency Division Multiplexing (OFDM) for 802.11g/n |
| Hardware Version: | PI3501C1 |
| Software Version: | 1.0.9 |
| Data speed: | 11b 1-11Mbps 11g 6-54Mbps 11n(H20) 6.5-72.2Mbps |
| Channel list: | For 2.4G Wi-Fi: $802.11b/g/n(HT20)$ Ch Fre(MHz)Ch Fre(MHz)Ch Fre(MHz)124127244222417824473242292452424271024575243211246262437 |
| Antenna Type: | Internal Antenna |
| Antenna Gain: | 5.24 dBi |

Report Number: 708882407771-00B



| Description of the EUT: | The Equipment Under Test (EUT) is a Pet Water Fountain with Wi-Fi Module. The EUT support Wi-Fi operated at 2.4GHz. |
|-------------------------|--|
| Test sample no.: | SHA-850918-3 (Radiated sample) SHA-850918-2 (Conducted sample) |

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment, antenna gain or any information supplied.



4 Summary of Test Standards

| Test Standards | | | | | |
|-----------------------|-----------------------------------|--|--|--|--|
| FCC Part 15 Subpart C | PART 15 - RADIO FREQUENCY DEVICES | | | | |
| 10-1-2023 Edition | Subpart C - Intentional Radiators | | | | |

All the test methods were according to KDB 558074 D01 15.247 Measurement Guidance v05r02 and ANSI C63.10-2013.



5 Summary of Test Results

| | Technical Requirements | | | | | | | |
|--------------------------------------|---|--------|--------|------|------|-----|--|--|
| FCC Part 15 Subpart C | | | | | | | | |
| Test Condition | | Dogos | Test | Tes | ult | | | |
| | | Fayes | Site | Pass | Fail | N/A | | |
| §15.207 | Conducted emission AC power port | 14-16 | Site 1 | | | | | |
| §15.247 (b) (3) | Conducted peak (average) output power | 17-18 | Site 1 | | | | | |
| §15.247(a)(1) | 20dB bandwidth and 99% Occupied Bandwidth | | | | | | | |
| §15.247(a)(1) | Carrier frequency separation | | | | | | | |
| §15.247(a)(1)(iii) | Number of hopping frequencies | | | | | | | |
| §15.247(a)(1)(iii) | Dwell Time - Average Time of Occupancy | | | | | | | |
| §15.247(a)(2) | 6dB bandwidth | 19-22 | Site 1 | | | | | |
| §15.247(e) | Power spectral density | 23-26 | Site 1 | | | | | |
| §15.247(e) | Spurious RF conducted emissions | 27-36 | Site 1 | | | | | |
| §15.247(d) | Band edge | 37-43 | Site 1 | | | | | |
| §15.247(d) & §15.209 & §15.205 | Spurious radiated emissions for transmitter | 44-66 | Site 1 | | | | | |
| §15.203 | Antenna requirement | See no | te 1 | | | | | |

Remark 1: N/A – Not Applicable.

Remark 2: The EUT only operation at 2.4G Wi-Fi.

Note 1: The EUT uses an Internal Antenna, which gain is 5.24 dBi. In accordance to §15.203, It is considered sufficiently to comply with the provisions of this section.

15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-



2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi



6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2BK23-P351, complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules.

SUMMARY:

All tests according to the regulations cited on page 6 were

- Performed
- □ Not Performed
- The Equipment under Test
- - Fulfills the general approval requirements.
- □ **Does not** fulfill the general approval requirements.

Sample Received Date: September 18, 2024

Testing Start Date: October 10, 2024

Testing End Date: October 22, 2024

-TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

Reviewed by:

Prepared by:

Tested by:

Hui TONG Review Engineer



Wenqiang LU Project Engineer

lianli XU

Tianji XU Test Engineer



7 Test Setups

7.1 AC Power Line Conducted Emission test setups



7.2 Radiated test setups

9kHz ~ 30MHz Test Setup:



Report Number: 708882407771-00B



30MHz ~ 1GHz Test Setup:



EMC_SHA_F_R_02.04E

Page 11 of 70 Rev. 23.00



18GHz ~ 25GHz Test Setup:



7.3 Conducted RF test setups

For Conducted peak output power



For other test items





8 Systems test configuration

Auxiliary Equipment Used during Test:

| DESCRIPTION | MANUFACTURER | MODEL NO.(SHIELD) | S/N(LENGTH) |
|-------------|--------------|-------------------|-----------------|
| Notebook | Lenove | E470 | PF-OU5TS7 17/09 |

Test software: sscom5.13.1.exe, which used to control the EUT in continues transmitting mode.

The system was configured to channel 1(2412MHz), 6(2437MHz), and 11(2462MHz).

Test Mode Applicability and Tested Channel Detail:

| Mode | Tested Channel | Data Rate (Mbps) | Modulation | Index Value (Power level setting) |
|--------------|-------------------|---------------------|------------|--------------------------------------|
| | 1 | 1 | CCK | -20 |
| 802.11b | 6 | 1 | CCK | -20 |
| | 11 | 1 | CCK | -16 |
| 802.11g | 1 | 6 | OFDM | Default |
| | 6 | 6 | OFDM | Default |
| | 11 | 6 | OFDM | -8 |
| 802.11n HT20 | 1 | MCS0 | OFDM | Default |
| | 6 | MCS0 | OFDM | Default |
| | 11 | MCS0 | OFDM | -8 |

Non-hopping mode: The system was configured to operate at a signal channel transmitting. The test software allows the configuration and operation at the worst-case duty and the highest transmit power.



9 Technical Requirement

9.1 Conducted Emission

Test Method

- 1. The EUT was placed on a table, which is 0.8m above ground plane
- 2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
- 3. Maximum procedure was performed to ensure EUT compliance
- 4. An EMI test receiver is used to test the emissions from both sides of AC line

Limit

According to §15.207, conducted emissions limit as below:

| Frequency | QP Limit | AV Limit |
|------------------------|----------------------|-----------|
| MHz | dBµV | dBµV |
| 0.150-0.500 | 66-56* | 56-46* |
| 0.500-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| *Decreasing linearly w | ith logarithm of the | frequency |

Report Number: 708882407771-00B

SUD

Product Type:Pet Water FountainM/N:PI3501Operating Condition:Mode 1: 802.11g Tx_2412MHz (worst case)Test Specification:L-lineComment:5VDC (powered by adaptor whose input is 120V~, 60Hz)



Final_Result

| Frequency | Quasi | CAverag | Limit | Margin | Meas. | Bandwidth | Line | Corr. |
|-----------|--------|---------|--------|--------|--------|-----------|------|-------|
| (MHz) | Peak | е | (dBuV) | (dB) | Time | (kHz) | | (dB) |
| | (dBuV) | (dBuV) | | | (ms) | | | |
| 0.222000 | | 24.69 | 52.74 | 28.05 | 1000.0 | 9.000 | L1 | 19.5 |
| 0.348000 | 32.06 | | 59.01 | 26.95 | 1000.0 | 9.000 | L1 | 19.5 |
| 0.654000 | | 36.02 | 46.00 | 9.98 | 1000.0 | 9.000 | L1 | 19.5 |
| 0.690000 | 45.54 | | 56.00 | 10.46 | 1000.0 | 9.000 | L1 | 19.5 |
| 1.189500 | 36.51 | | 56.00 | 19.49 | 1000.0 | 9.000 | L1 | 19.5 |
| 1.239000 | | 28.22 | 46.00 | 17.78 | 1000.0 | 9.000 | L1 | 19.5 |
| 2.170500 | 36.00 | | 56.00 | 20.00 | 1000.0 | 9.000 | L1 | 19.5 |
| 2.170500 | | 25.70 | 46.00 | 20.30 | 1000.0 | 9.000 | L1 | 19.5 |
| 5.581500 | | 23.63 | 50.00 | 26.37 | 1000.0 | 9.000 | L1 | 19.6 |
| 5.595000 | 33.94 | | 60.00 | 26.06 | 1000.0 | 9.000 | L1 | 19.6 |
| 16.071000 | | 17.76 | 50.00 | 32.24 | 1000.0 | 9.000 | L1 | 20.0 |
| 29.301000 | 28.50 | | 60.00 | 31.50 | 1000.0 | 9.000 | L1 | 21.0 |

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB) Factor (dB) = Cable Loss (dB) + LISN Factor (dB) + 10dB Attenuator



Product Type M/N Operating Condition Test Specification Comment : Pet Water Fountain

PI3501

1

1

Mode 1: 802.11g Tx_2412MHz (worst case)

cification : N-line t : 5VDC

5VDC (powered by adaptor whose input is 120V~, 60Hz)



Final_Result

| Frequency (MHz) | Quasi Peak | CAverag e | Limit (dBuV) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Line | Corr. (dB) |
|--------------------|---------------|--------------|-----------------|----------------|---------------|--------------------|------|---------------|
| | (dBuV) | (dBuV) | | | (ms) | | | |
| 0.244500 | | 25.15 | 51.94 | 26.79 | 1000.0 | 9.000 | Ν | 19.4 |
| 0.348000 | 33.22 | | 59.01 | 25.79 | 1000.0 | 9.000 | Ν | 19.4 |
| 0.690000 | | 36.69 | 46.00 | 9.31 | 1000.0 | 9.000 | N | 19.4 |
| 0.690000 | 41.27 | | 56.00 | 14.73 | 1000.0 | 9.000 | N | 19.4 |
| 0.883500 | 35.53 | | 56.00 | 20.47 | 1000.0 | 9.000 | Ν | 19.5 |
| 1.230000 | | 29.30 | 46.00 | 16.70 | 1000.0 | 9.000 | Ν | 19.5 |
| 2.611500 | 32.70 | | 56.00 | 23.30 | 1000.0 | 9.000 | Ν | 19.5 |
| 3.259500 | | 26.49 | 46.00 | 19.51 | 1000.0 | 9.000 | Ν | 19.5 |
| 5.203500 | 30.04 | | 60.00 | 29.96 | 1000.0 | 9.000 | Ν | 19.6 |
| 5.329500 | | 21.59 | 50.00 | 28.41 | 1000.0 | 9.000 | Ν | 19.6 |
| 12.574500 | | 17.84 | 50.00 | 32.16 | 1000.0 | 9.000 | N | 19.8 |
| 12.651000 | 26.04 | | 60.00 | 33.96 | 1000.0 | 9.000 | Ν | 19.8 |

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB) Factor (dB) = Cable Loss (dB) + LISN Factor (dB) + 10dB Attenuator



Test Method (1)

- 1. Measure the duty cycle D of the transmitter output signal.
- 2. Set span to at least 1.5 times the OBW.
- 3. Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
- 4. Set VBW \geq [3 × RBW].
- 5. Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
- 6. Sweep time = auto.
- 7. Detector = RMS (i.e., power averaging), if available. Otherwise, use the sample detector mode.
- 8. Do not use sweep triggering. Allow the sweep to "free run."
- 9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
- 10. Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- 11.Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission).

Test Method (2)

1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.

2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.

3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

4) Measure the peak power of the transmitter. This measurement is a peak over both the ON and OFF periods of the transmitter.



Wideband Power Sensor conducted test setup



Limits

According to §15.247 (b) (3), conducted peak output power limit as below:

| | Frequency Range | Limit | Limit |
|-----------------------------|-----------------|-------|-------|
| | MHz | W | dBm |
| Conducted peak output power | 2400-2483.5 | ≤1 | ≤30 |

Test result (conducted peak) as below table

| 802.11b | | | | | | |
|-----------|--------------------------------------|-------|---------|--|--|--|
| Frequency | Conducted Peak Output Power (dBm) | | | | | |
| (MHz) | §15.247 (b) (3) | | | | | |
| | Result | limit | Verdict | | | |
| 2412MHz | 15.34 | ≤30 | Pass | | | |
| 2437MHz | 15.85 | ≤30 | Pass | | | |
| 2462MHz | 16.32 | ≤30 | Pass | | | |

| 802.11g | | | | | | | | |
|-----------|---|-------|---------|--|---------------------------|--|--|--|
| | Conducted Peak Output Power (dBm) §15.247 (b) (3) | | | | Conducted Peak Output Pow | | | |
| Frequency | | | | | | | | |
| (MHz) | | | | | | | | |
| | Result | limit | Verdict | | | | | |
| 2412MHz | 20.87 | ≤30 | Pass | | | | | |
| 2437MHz | 20.81 | ≤30 | Pass | | | | | |
| 2462MHz | 19.21 | ≤30 | Pass | | | | | |

| 802.11n(HT20) | | | | | | |
|---------------|--------------------------|-----------------------------|---------|--|--|--|
| | Conduct | Conducted Peak Output Power | | | | |
| Frequency | (dBm) §15.247 (b) (3) | | | | | |
| (MHz) | | | | | | |
| | Result | limit | Verdict | | | |
| 2412MHz | 19.74 | ≤30 | Pass | | | |
| 2437MHz | 19.58 | ≤30 | Pass | | | |
| 2462MHz | 16.97 | ≤30 | Pass | | | |



9.3 6dB bandwidth

Test Method for 6 dB Bandwidth

- 1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
- 3. Use the following spectrum analyzer settings: RBW=100KHz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
- 4. Use the automatic bandwidth measurement capability of an instrument, use the X dB bandwidth mode with X set to 6 dB.
- 5. Allow the trace to stabilize, record the 6 dB Bandwidth value.

Limit

6dB bandwidth Limit [kHz]

≥500

Test result

| Test Mode | est Mode Frequency | | 6dB bandwidth (MHz) | | | |
|---------------|--------------------|--------|---------------------|---------|--|--|
| | MHZ | result | limit | verdict | | |
| | 2412 | 10.336 | ≥0.5 | Pass | | |
| 802.11b | 2437 | 10.335 | ≥0.5 | Pass | | |
| | 2462 | 10.334 | ≥0.5 | Pass | | |
| | 2412 | 16.293 | ≥0.5 | Pass | | |
| 802.11g | 2437 | 16.296 | ≥0.5 | Pass | | |
| | 2462 | 16.589 | ≥0.5 | Pass | | |
| | 2412 | 17.246 | ≥0.5 | Pass | | |
| 802.11n(HT20) | 2437 | 17.09 | ≥0.5 | Pass | | |
| | 2462 | 17.333 | ≥0.5 | Pass | | |



6 dB Bandwidth



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9.4 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

- 1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
- 3. Use the following spectrum analyzer settings:
- Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
- 5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.

Limit [dBm/3KHz]

6. Repeat above procedures until other frequencies measured were completed.

| | | ≤8 | |
|-------------------------|------------------------|----------------|--------|
| Test result 802.11 B | | | |
| | | Power spectral | |
| | Frequency | density | Result |
| | MHz | dBm/3kHz | |
| | Low channel 2412MHz | -7.76 | Pass |
| | Middle channel 2437MHz | -7.41 | Pass |
| | High channel 2462MHz | -12.18 | Pass |
| 802.11 G | | | |
| | | Power spectral | |
| | Frequency | density | Result |
| | MHz | dBm/3kHz | |
| | Low channel 2412MHz | -10.7 | Pass |
| | Middle channel 2437MHz | -10.16 | Pass |
| | High channel 2462MHz | -11.51 | Pass |
| 802.11 N20 | | | |
| | | Power spectral | |
| | Frequency | density | Result |
| | MHz | dBm/3kHz | |
| | Low channel 2412MHz | -11.85 | Pass |
| | Middle channel 2437MHz | -11.11 | Pass |
| | High channel 2462MHz | -13.19 | Pass |

Limit

Power spectral density



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9.5 Spurious RF conducted emissions

Test Method

- 1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
- 3. Use the following spectrum analyzer settings:
- Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span. RBW = 100 kHz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
- 4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
- 5. The level displayed must comply with the limit specified in this Section. Submit these plots.
- 6. Repeat above procedures until all frequencies measured were complete.

Limit

| Frequency Range MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000 | -20 |



Spurious RF conducted emissions



Note: The emission which exceed the limit is the fundamental.







EMC_SHA_F_R_02.04E

Page 30 of 70 Rev. 23.00





EMC_SHA_F_R_02.04E

Page 31 of 70 Rev. 23.00





EMC_SHA_F_R_02.04E

Page 32 of 70 Rev. 23.00



| | | | (| Jut-of-Band | d Emission | S | | |
|--|--|--|--|--|---|--|---|---|
| Reference point Spurious Emission (30MHz – 1GHz) Reference point Image: Spurious Emission (1GHz – 5GHz) Spurious Emission (1GHz – 5GHz) Spurious Emission (5GHz – 26.5GHz) Reference point Image: Spurious Emission (1GHz – 5GHz) Reference point Image: Spurious Emission (1GHz – 5GHz) Reference point Image: Spurious Emission (5GHz – 26.5GHz) Referen | | | (| Channel 11 | (2462MHz | <u>z</u>) | | |
| | | Refe | erence point | | Spu | irious Emis | ssion (30Mł | Hz – 1GHz) |
| Instruction Mixed 2.468 897 0HB Image: Second and and and and and and and and and a | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF RL + Align: Auto | Input Z: 50 Q Corrections: Off Freq Ref: Int (S) | IPNO: Fast Avg Type: Log-Power 1 2 3 4 5 6 Gate: 0ff AvgHold: 100/100 M W W W W IF Gain: Low Trig: Free Run P N N N N N | | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF RL ++ Coupling, AC Align: Auto | Input Z: 50 Q Corrections: Off Freq Ref: Int (S) | PNO: Fast Avg Type: Log-Pc Gate: Off Avg Hold: 10/10 IF Gain: Low Trig: Free Run Sig Track: Off | xwor 123456 MWWWWW PNNNN |
| | 1 Spectrum Scale/Div 10 dB | | Ref Lvi Offset 2.15 dB Ref Level 20.00 dBm | Mkr1 2.466 967 GHz 0.47 dBm | 1 Spectrum v Scale/Div 10 dB | | Ref Lvi Offset 2.15 dB Ref Level 20.00 dBm | Mkr1 855.28 Mł -56.47 dB |
| Spectrum Analyzer 1 Sweet 3A Spectrum Ana | | 0ci 22, 2024 | Prideo BW 300 kHz | Span 30.00 MHz Sweep 4.00 ms (3000 pts) | 100 100 100 100 200 100 | | Prideo BW 300 kHz | Colt 1953 d |
| Spectrum Analyzer 1 Image: | Sp | urious Emi | ssion (1GHz –5G | Hz) | Spu | rious Emis | sion (5GHz | –26.5GHz) |
| Log Image: Control of the set of the | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF Coupling: AC Align: Auto | Input Z 50 0 Corrections: Off Freq Ref: Int (S) | PNO-Field Avg Type Log Power 1 2 3 4 5 6 Gate Off Avg/Hold 1010 M 40 40 40 40 IF Gat. Nov Trig: Free Run M 40 40 40 40 So Track: Off P N N N N N Red Lowed 70 offset 2.15 dB Ref P N N N N | Mkr1 2.463 60 GHz -2 06 dBm | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF Coupling: AC Align: Auto | Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) | PNO Fast Avg Type: Log-Pc Gate: Off AvgHold: 10/10 IF Gain: Low Trig: Free Run Sig Track: Off Ref Lvi Offset 2.15 dB Ref Level 20 00 dBm | WW 123456 MWWWWW PNNNN Mkr1 25.9317 Gi -4617 dB |
| S #Video BW 300 kHz Start 5.00 GHz #Video BW 300 kHz Start 5.00 GHz | Scale/Dv 10 dB L00 L00 000 | X 2.453.80.GHz 2.760.00 GHz | Ref Level 20.00 dBm Q2 \$Video BW 300 kHz Y Punction Function Function State | -2.06 dBm | ScalarDiv 10 dB Log | | Ref Level 20.00 dBm | -46.17 GIS |
| | | Oct 22, 2024 | | | Start 5.00 GHz #Res BW 100 kHz | Oct 22 2024 | #Video BW 300 kHz | Stop 26.50 G Sweep ~2.06 s (30001 p |



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|---|--|--|---|---|--|--|---|--|
| | | <u> Out-of-Band</u> | Emission | S | | | | |
| | | Channel 1 (2 | 2412MHz |) | | | | |
| | Reference point | | Spu | irious Emis | sion (30 |)MHz – 10 | Hz) | |
| Spectrum Analyzer 1 Swept SA | • + | | Spectrum Analyzer 1 Swept SA | • + | | | | |
| RL ++ Coupling: AC Align: Auto | Input Z: 50 Q II/Atten: 30 dB PNO: Fast Avg Type: Log-Power 1 2 3 4 5 6 Corrections: Off Preamp: Off Glate: Off Avg Type: Log-Power 1 2 3 4 5 6 Freq Ref: Int (5) IF Grain: Low Trg: Free Run M W w W w W W W W Freq Ref: Int (5) S0 Track: Off P N N N N N | | R L ++ Coupling: AC Align: Auto | Input Z: 50 Q #Atten: 30 dB Corrections: Off Freq Ref: Int (S) | PNO: Fast Avg Ty Gate: Off Avg Hi IF Gain: Low Trig: F Sig Track: Off | rpe: Log-Power 1 2 3 4 5 6 old: 10/10 M W W W W W ree Run P N N N N N | | |
| 1 Spectrum Scale/Div 10 dB Log | Ref Lvi Offset 2.14 dB Ref Level 20.00 dBm | Mkr1 2.414 484 GHz 1.96 dBm | 1 Spectrum Scale/Div 10 dB Log | | Ref Lvi Offset 2.14 dB Ref Level 20.00 dBm | | Mkr1 75 -56 | 9.63 MHz 6.34 dBm |
| 10.0 | | | 10.0 | | | | | |
| 0.00 | mound and the second manufactures and | ν. | 0.00 | | | | | |
| -20.0 | | | -20.0 | | | | | DL1 -18.04 dBm |
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| Center 2.41200 GHz #Res BW 100 kHz | #Video BW 300 kHz | Span 30.00 MHz Sweep 4.00 ms (30001 pts) | Start 0.0300 GHz #Res BW 100 kHz | Oct 12 2024 | #Video BW 300 kHz | | Sweep ~94.1 ms | (30001 pts) |
| | | | | 3:54:11 PM | -ion (50 | | | X |
| Spectrum Analyzer 1 | Durious Emission (TGHZ -5G | HZ) | Spu | rious Emis | sion (5G | HZ -26.50 | JHZ) | |
| Swept SA KEYSIGHT Input: RF | · + | | Spectrum Anglyzer 1 | | | | | |
| TOUDING AC | Input Z: 50 Ω #Atten: 30 dB PNO: Fast Avg Type: Log-Power 1 2 3 4 5 6 | | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF | Input Z: 50 Ω #Atten: 30 dB Competing: Off Program: Off | PNO: Fast Avg Ty | /pe: Log-Power 1 2 3 4 5 6 | | |
| R L +++ Coupling: AC Align: Auto | Input Z 50 Ω Itathen: 30 dB PNO: Fast Avg Type: Log-Power 1 ≥ 3 4 5 6 Corrections: Off Preamp: Off Gate: Off Avg[Hold: 10/10 M ₩ ₩ ₩ ₩ ₩ Freq Ref. Int (S) IF Gain: Low Trig: Free Run M ₩ ₩ ₩ ₩ ₩ Sig Track: Off N N N N | | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF R L + Align: Auto | Input Z: 50 0 Corrections: Off Freq Ref: Int (S) | PNO: Fast Avg Ty Gate: Off Avg]H IF Gain: Low Trig: F Sig Track: Off | rpe: Log-Power old: 10/10 ree Run P N N N N N | | |
| RL ↔ Coupling: AC Align: Auto | Input 2: 50.0 IA/Em 30 dB PNO Finat Avg Type Log Power Strong Red Int (S) Phename OF Educ Of Avg Type Log Power Strong Red Int (S) Phename OF Educ Of Avg Type Log Power Sig Track: OF Ref Log ROM P N N N N Ref Log ROM OF Ref Log ROM OF N N N N | Mkr1 2.410 80 GHz 1.78 dBm | Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF RL + Coupling: AC Align: Auto 1 Spectrum + Scale/Div 10 dB | Input Z: 50 Ω #Atten: 30 dB Corrections: Off Preamp: Off Freq Ref. Int (S) Preamp: Off | PNO: Fast Avg Ty Gate: Off Avg[H IF Gain: Low Trig: F Sig Track: Off Ref Level 20.00 dBm | rpe: Log-Power loid: 10/10 me Run P N N N N N | Mkr1 26.4 | 56 3 GHz 5.36 dBm |
| RL → Louping: AC Align: Auto 1 Spectrum ▼ Scale/Div 10 dB Log 100 | Input 2: 50 0. IM46m : 30 dB PNO Finat Avg Type Log-Power 12: 3: 4: 5: 6 Corrections () Peamp OII IE class OII M W W W W W M W W W W W M W W W W W M W W W W W P N N N N N N W W W W W P N N N N N N N W W W W W P N N N N | Mkr1 2.410 80 GHz 1.78 dBm | Spectrum Analyzer 1 KEYSIGHT Input: RF RL ↔ Coupling Act Align: Auto Scale/Div 10 dB Log 10.0 | Imput 2:50 G Corrections: Off Freq Ref. Int (S) | PNO: Fast Avg Tr Gate: Off Avg[H IF Gain. Low Trg. F Sig Track: Off Ref Lvi Offset 2.14 dB Ref Level 20.00 dBm | rpe: Log-Power 1 2 3 4 5 6 old: 10/10 M W W W W W ree Run P N N N N N | Mkr1 26.4 -45 | 56 3 GHz 5.36 dBm |
| RL Coupling AC Align: Auto 1 Spectrum • Scale/Div 10 dB • 100 • | Input 2: 50 0. MAttem: 30 dB PNO First Ang Type Log Power 11 2 1 4 5 6 Correction: 01 Piedent Int (S) Piedent Int (S) Piedent Int (S) Piedent Int (S) Figs Truck Cell Piedent Int (S) Piedent Int (S) Piedent Int (S) Piedent Int (S) Ref Level 20.00 dBm Ref Level 20.00 dBm Piedent Int (S) Piedent Int (S) | Mkr1 2.410.80 GHz 1.78 dBm | Spectrum Analyzer 1 Swept Sa KEYSIGHT Input: RF Coupling AC Algn: Auto 1 Spectrum Coupling AC Algn: Auto 1 Spectrum Coupling AC Algn: Auto | Ingut 2: 50 a Gi Anter 30 dB Corrections Prog Ref. Int (5) | PNO Fast Avg1H Gate: Off Avg1H IF Gain: Low Trg: F Sig Track: Off Ref Lvi Offset 2.14 dB Ref Level 20.00 dBm | pe Log-Power 1 2 3 4 5 6 dd 1010 M W W W W W fee Ron P N N N N N | Mkr1 26.4 -45 | 56 3 GHz 5.36 dBm |
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| RL → Coupling AC Alam. Auto 1 Spectrum ✓ 5 Coupling AC Alam. Auto ✓ 1 Spectrum ✓ 5 Coupling AC Alam. Auto ✓ 1 Spectrum ✓ 5 Coupling AC Alam. Auto ✓ 1 Spectrum ✓ 0 Coupling AC Alam. Auto ✓ -0 Coupling AC Alam. Auto ✓ | Irond 2: 50 0 MART No. 04 B) PNO Final Ang Type Log Power 11 2 1 4 5 6 Prog Ref In (S) Pharme Off Educ Off Ang Type Log Power 11 2 1 4 5 6 Ref Level 20.00 dBm Ref Level 20.00 dBm PN N N N N N | Mkr1 2.410 80 GHz 1.78 dBm | Spectrum Analyzer 1 Weingt 2A KEYSIGHT Nager Alex Spectrum Spectrum 100 100 100 100 100 100 100 100 100 100 100 | A terminal 2:00 Corrections: 0f Preamp: 0f Freq Ref. Int (S) | PNO Fact Aug Ti Cato Of Aug Ti F Gain Low Sig Track: Of Tig F Ref Level 20.0 dBm | pe Lop Power 1 3 3 4 5 6 6 44 100 10 44 10 10 10 10 10 10 10 10 10 10 10 10 10 | Mkr1 26.4 | 56 3 GHz 5.36 dBm DL1-18 M alten |
| RL → Cooping AC Apr. Adv 1 Spectrum • Scalar/Div 10 dB • 100 </td <td>Ironiz 2:90 0 MARTIN 20 4B PNO Finit Ang Type Log Power Sing Rul In (5) Pename: 001 Educion Ang Type Log Power Sing Rul In (5) Pename: 001 Sing Track: 001 Trace Trace Ref Lvel 20.00 dBm Ref Lvel 20.00 dBm Pining Finit Pining Finit Sing Rul Lvel 20.00 dBm Sing Track: 001 Sing Trace Pining Finit Sing Rul Lvel 20.00 dBm Sing Trace Sing Trace Sing Trace</td> <td>Mkr1 2.410 80 GHz 1.78 dBm 0(1-864 dBm 500 5.000 GHz Sweep -384 ms (30001 pts)</td> <td>Spectrum Analyzer 1 Spectrum Analyzer 1 Cooping AA KEYSIGHT Houel Hi Cooping Auto Cooping Auto</td> <td>Heart 2: 50 dB Corrections: 0f Preamp: 0f Preamp: 0f Preamp: 0f Corrections: 0f Preamp: 0f Preamp: 0f Corrections</td> <td>PNO Fast Gato Cet IF Gant Low ISg Track Off Ref Level 20.00 dbm</td> <td>pe Lop Power 1 3 3 4 3 6 0 dd 10/10 M w w W w W w P K N N N N</td> <td>Mkr1 26.4</td> <td>56 3 GHz 5.36 dBm Dt1-1804 abn</td> | Ironiz 2:90 0 MARTIN 20 4B PNO Finit Ang Type Log Power Sing Rul In (5) Pename: 001 Educion Ang Type Log Power Sing Rul In (5) Pename: 001 Sing Track: 001 Trace Trace Ref Lvel 20.00 dBm Ref Lvel 20.00 dBm Pining Finit Pining Finit Sing Rul Lvel 20.00 dBm Sing Track: 001 Sing Trace Pining Finit Sing Rul Lvel 20.00 dBm Sing Trace Sing Trace Sing Trace | Mkr1 2.410 80 GHz 1.78 dBm 0(1-864 dBm 500 5.000 GHz Sweep -384 ms (30001 pts) | Spectrum Analyzer 1 Spectrum Analyzer 1 Cooping AA KEYSIGHT Houel Hi Cooping Auto Cooping Auto | Heart 2: 50 dB Corrections: 0f Preamp: 0f Preamp: 0f Preamp: 0f Corrections: 0f Preamp: 0f Preamp: 0f Corrections | PNO Fast Gato Cet IF Gant Low ISg Track Off Ref Level 20.00 dbm | pe Lop Power 1 3 3 4 3 6 0 dd 10/10 M w w W w W w P K N N N N | Mkr1 26.4 | 56 3 GHz 5.36 dBm Dt1-1804 abn |
| RL → Cooping AC App: Add 1 Spectrum • Scalar/Div 10 dB • Log • 000 </td <td>Imput: 2:90 Operating Control (Inc) MM (Inc) M (Inc)</td> <td>Mkr1 2.410 80 GHz 1.78 dBm 0(116 M dBm Stop 5.000 GHz Sweep ~384 ms (30001 pts) Function Value</td> <td>Beeting Analyzer 1 beept SA KEYSGET Poet RF Agen Auto Scale of the Same Scale of the Same Scale of the Same Scale of the Same Scale of the Same Sa</td> <td>Internet 2: 50 of the second sec</td> <td>PNO Fast Gato Off IF Gain: Low Ng Track Off Ref Lavel 20.00 dBm</td> <td>pe Lop Power 1</td> <td>Mkr1 26.4</td> <td>56 3 GHz 5.36 dBm DL1 18 04 dBm</td> | Imput: 2:90 Operating Control (Inc) MM (Inc) M (Inc) | Mkr1 2.410 80 GHz 1.78 dBm 0(116 M dBm Stop 5.000 GHz Sweep ~384 ms (30001 pts) Function Value | Beeting Analyzer 1 beept SA KEYSGET Poet RF Agen Auto Scale of the Same Scale of the Same Scale of the Same Scale of the Same Scale of the Same Sa | Internet 2: 50 of the second sec | PNO Fast Gato Off IF Gain: Low Ng Track Off Ref Lavel 20.00 dBm | pe Lop Power 1 | Mkr1 26.4 | 56 3 GHz 5.36 dBm DL1 18 04 dBm |
| RL → Coupling AC Appr. Ador 1 Spectrum ■ Scalar/Dr 10 dB ■ 100 | X Y Function Function Function X Y Function Function Function Function | Mkr1 2.410.80 GHz 1.78 dBm DL 18 M M Stop 5.000 GHz Sweep -384 m (3001 pts) Function Value | Spectrum Analyzer 1 Dempt 2A KEYSGHT Tuete Bir Align Auto Scale/Div 10 dB Log 00 100 100 100 100 100 100 100 | V + O | PNO Fact Date of Arg 1 Pr Gain Of Bright Sig Track Of Bright Ref Lavel 20.00 dBm | pe Log Power 1 2 3 4 5 6 44 100 0 44 10 | Mkr1 26.4 | 56 3 GHz 5.36 dBm |
| RL → Coupling AC Alon: Aloi 1 Spectrum → ScalarDiv 10 dB → 100 | Imput: 2:90 0 Freq Ref In (S) MARE TO BB Pename Cifi Sig Track Off PNO Fail Sig Track Off Ang Type Log Power (algorithm for fail) Trag Free Rein 12:4.5.6 M w w w w w P N N N N Ref Lvi Offset 2:14 dB Ref Level 2:0.00 dBm PLO Free Rein PLO Free Rein Video BW 300 kHz X Y Function Function Video BW 300 kHz X Y Function Log Colspan="2">Function X 10 B0 GHz X Y Function Function Function Function | Mkr1 2.410 80 GHz 1.78 dBm 01 100 dm 5top 5.000 GHz Sweep -384 ms (30001 pts) Function Value | Spectrum Analyzer 1 Spectrum Analyzer 1 KEYSIGHT Fuelt Fir Augn Auto Science 1 Societur 4 Societur 4 Socie | A the cost of | PNO Fact Cato Cet IF Gain: Low Sig Track: Off Ref Level 20.0 dBm Ref Level 20.0 dBm File | pe Lop Power I 2 3 4 5 6 A 40 W W W W P N N N N P N N N N | Mkr1 26.4 | 56 3 GHz 5.36 dBm |



| | | Out-of-Band | Emission | S | | | | |
|--|--|---|--|--|--|---|---|--|
| | | Channel 6 | (2437MHz |) | | | | |
| | Reference point | | Spu | urious Emis | sion (30N | ИНz – 1G | Hz) | |
| Spectrum Analyzer 1 Swept SA | | | Spectrum Analyzer 1 Swept SA | · + | x | | | |
| KEYSIGHT Input: RF RL → Align: Auto Freq Ref: In | Matter: 30 dB PNO: Fast Avg Type: Log.Power 1 ≥ 3 d Off Preamp: Off AvgHold: 100/100 If (S) IF Gain: Low Trig: Free Run M ₩ ₩ ₩ Sig Track: Off P N N N | 5 6 ₩₩ N N | RL ++ Align: Auto | Input Z: 50 Q #Atten: 30 dB Corrections: Off Freq Ref: Int (S) | PNO: Fast Avg Type: Gate: Off Avg[Hold: IF Gain: Low Trig: Free I Sig Track: Off | Log-Power 1 2 3 4 5 6 10/10 Run P N N N N N | | |
| 1 Spectrum Scale/Div 10 dB | Ref Lvi Offset 2.15 dB Ref Level 2000 dBm | Mkr1 2.438 265 GHz 1.82 dBm | 1 Spectrum V Scale/Div 10 dB | | Ref Lvi Offset 2.15 dB Ref Level 20.00 dBm | | Mkr1 8 | 31.22 MH 57.52 dBn |
| 10.0 | | | 10.0 | | | | | |
| 0.00 | marine marine marine marine and and and and | MM | 0.00 | | | | | |
| -10.0 | | | -10.0 | | | | | DL1 -18.18 dBr |
| -30.0 | | | -30.0 | | | | | |
| -40.0 Harden rate and a start a st | | Mar Marchard | -40.0 | | | | | |
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| -70.0 | | | -70.0 | | and the state of the product of the state of | e karan da dina masima kata karan karan | h na ha n | al de la composition |
| Center 2.43700 GHz | #Video BW 300 kHz | Span 30.00 MHz | Start 0.0300 GHz | | #Video BW 300 kHz | | Silver and 1 | top 1.0000 GH |
| Ct 12, 20 3:59:25 F | 124 D | | | ? Oct 12, 2024 3:59:30 PM | | | | |
| Spurio | us Emission (1GHz –5 | GHz) | Spu | rious Emis | sion (5GF | lz –26.50 | GHz) | |
| Spectrum Analyzer 1 | | | Spectrum Analyzer 1 Swent SA | · + | (| | | |
| KEYSIGHT Input: RF RL → Coupling: AC Align: Auto | Matter: 30 dB IPNO: Fast Avg Type: Log-Power 1 2 3 4 Off Preamp: Off Gate: Off Avg[Hold: 10/10 M W W W (S) IF Gain: Low Trig: Free Run P N N N | 5 6 ₩₩ N N | KEYSIGHT Input: RF RL ↔ Coupling: AC Align: Auto | Input Z: 50 Q Corrections: Off Freq Ref: Int (S) | PNO: Fast Avg Type: Gate: Off Avg Hold: IF Gain: Low Trig: Free I Sig Track: Off | Log-Power 10/10 Run P N N N N N | | |
| 1 Spectrum v Scale/Div 10 dB | Ref Lvi Offset 2.15 dB Ref Level 20.00 dBm | Mkr1 2.443 33 GHz -0.35 dBm | 1 Spectrum Scale/Div 10 dB | | Ref Lvi Offset 2.15 dB Ref Level 20.00 dBm | | Mkr1 25 | .402 1 GH 45.36 dBr |
| 10.0 | • • • • • • • • • • • • • • • • • • • | | 10.0 | | | | | |
| -10.0 -20.0 | | DL1 -18.18 dBm | 0.00 | | | | | |
| -40.0 | 02 | | -10.0 | | | | | DL1 -18.18 dB |
| -60.0 -70.0 -70.0 | | | -20.0 | | | | | |
| Start 1.000 GHz #Res BW 100 kHz | #Video BW 300 kHz | Stop 5.000 GHz Sweep ~384 ms (30001 pts) | -40.0 | | | | | ↓ 1 |
| 5 Marker Table | | | -50.0 | and the second second second second | | | No. | |
| A REAL PROPERTY AND A REAL | V Eurotion Franklan Middle | Eurotion Value | A state of the set o | | | | | |
| 1 N 1 f 2 N 1 f | Y Function Function Width 2.443 33 GHz -0.3470 dBm -0.3470 dBm 2.671 47 GHz -54.08 dBm -54.08 dBm | Function Value | -60.0 | | | | | |
| moure Halve Outer J 1 N 1 f 1 2 N 1 f 1 3 - - - - 4 - - - - - 5 - - - - - - | C 47 Y Function Function Width 2.473 33 GHz - 0.3470 dBm 2.671 47 GHz -54.08 dBm | Function Value | -60.0 -70.0 Start 5.00 GHz | | #Video BW 300 kHz | | | Stop 26.50 GH |
| 1 N 1 f 2 N 1 f 3 4 5 6 0 0d 12 20 | C 424 33 0 GHz 424 33 0 GHz 43 470 dBm 2.871 47 GHz -54.08 dBm 24 △ | Function Value | -00 0 -70 0 Start 5.00 GHz #Res BW 100 kHz | ● Oct 12 2024 ● △ | #Video BW 300 kHz | | Sweep ~2.0 | Stop 26.50 GH 6 s (30001 pts |