



Test report No:
 NIE: 63185REM.079A1

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

| | |
|---|---|
| (*) Identification of item tested | Headunit with radio and Bluetooth |
| (*) Trademark | Panasonic |
| (*) Model and /or type reference tested | MIB3E_MQB37w_BTWIFI |
| Other identification of the product | PN: 5FA.035.869 HW Version: X05 SW Version: X765 FCC ID: WUQ-MIB3VBTWIFI IC: 216R-MIB3VBTWIFI |
| (*) Features | Bluetooth, WLAN, FM, AM, DAB, USB |
| Manufacturer | PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH Robert Bosch Str. 27-29 63225 Langen, GERMANY |
| Test method requested, standard | FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04) |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | Rafael López EMC Consumer & RF Lab. Manager |
| Date of issue | 2020-12-02 |
| Report template No | FDT08_22 (*) "Data provided by the client" |

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Competences and guarantees

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DEKRA Testing and Certification guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $I = \pm 4,9$ dB for quasi-peak measurements, $I = \pm 4,6$ dB for peak measurements ($k = 2$)

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 26 GHz is $I = \pm 2,6$ dB for peaks and average measurements ($k = 2$)

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

The sample consists of an automotive head unit to be installed in cars with the following features: Bluetooth, WLAN, FM, AM, DAB, USB.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples under test have been selected by: The client.

Sample S/01 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|------------|-----------------------------------|-------------------------|-----------------------------|-------------------|
| 63185/008 | Headunit with radio and bluetooth | MIB3E_MQB37w _BTWIFI | PM6- 00127.03.20412F0024 | 2020-06-30 |

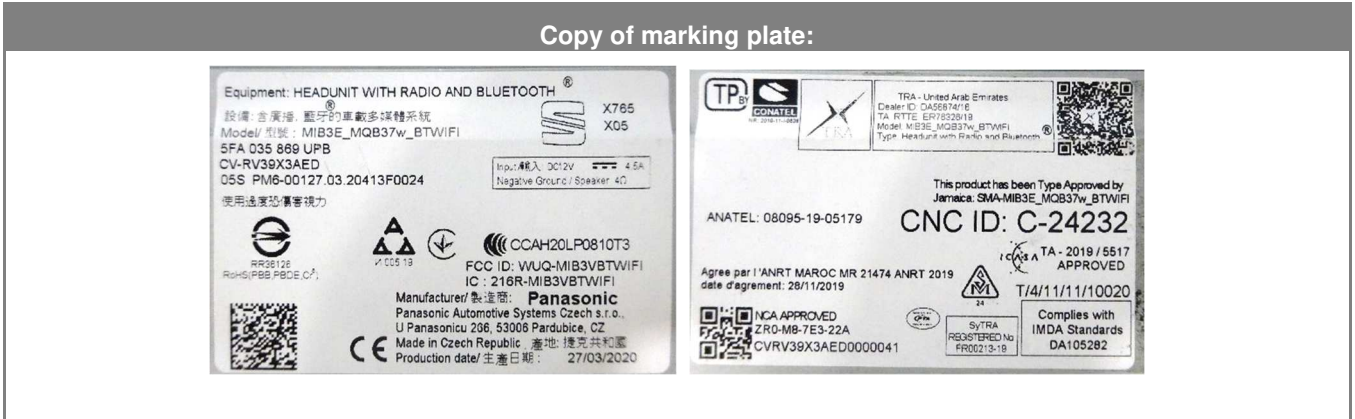
Auxiliary elements used with the sample S/01:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|------------|-------------|-------|-----------|-------------------|
| 51929B/117 | USB Module | --- | --- | 2018-12-10 |
| 51929B/450 | Harness | --- | --- | 2019-02-26 |

Test sample description

| | | | | | | |
|---|--|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Ports..... : | Port name and description | Cable | | | | |
| | | Specified length [m] | Attached during test | Shielded | | |
| | -- | | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | | | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Supplementary information to the ports..... : | | | | | | |
| Rated power supply | Voltage and Frequency | Reference poles | | | | |
| | | L1 | L2 | L3 | N | PE |
| | <input type="checkbox"/> AC: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> DC: 12Vdc | | | | | | |
| Rated Power | -- | | | | | |
| Clock frequencies | -- | | | | | |
| Other parameters..... : | PN: 5FA.035.869 FCC ID: WUQ-MIB3VBTWIFI IC: 216R-MIB3VBTWIFI | | | | | |
| Software version | X765 | | | | | |
| Hardware version..... : | X05 | | | | | |
| Dimensions in cm (W x H x D).... : | -- | | | | | |
| Mounting position..... : | <input type="checkbox"/> | Table top equipment | | | | |
| | <input type="checkbox"/> | Wall/Ceiling mounted equipment | | | | |
| | <input type="checkbox"/> | Floor standing equipment | | | | |
| | <input type="checkbox"/> | Hand-held equipment | | | | |
| | <input checked="" type="checkbox"/> | Other: Automotive head unit | | | | |
| Modules/parts | Module/parts of test item | Type | Manufacturer | | | |
| | -- | | | | | |
| Accessories (not part of the test item) | Description | Type | Manufacturer | | | |
| | -- | | | | | |
| Documents as provided by the applicant..... : | Description | File name | Issue date | | | |
| | -- | | | | | |

Copy of marking plate:



Identification of the client

PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Robert Bosch Str. 27-29
 63225 Langen, GERMANY

Testing period and place

| | |
|---------------|--|
| Test Location | DEKRA Testing and Certification S.A.U. |
| Date (start) | 2020-10-26 |
| Date (finish) | 2020-10-26 |

Document history

| Report number | Date | Description |
|----------------|------------|--|
| 63185REM.079 | 2020-11-19 | First release |
| 63185REM.079A1 | 2020-12-02 | The FM reception mode is considered in the definition of the operation modes under test. |

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

| | |
|--------------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 30 % Max. = 75 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

In the semianechoic chamber, the following limits were not exceeded during the test.

| | |
|--------------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 30 % Max. = 75 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

In the chamber for conducted measurements, the following limits were not exceeded during the test:

| | |
|--------------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 30 % Max. = 60 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

Remarks and comments

The test have been performed by the technical personnel: Antonio Sanchez & Jaime Barranquero.

Testing verdicts

| | |
|------------------|-----|
| Not applicable : | N/A |
| Pass : | P |
| Fail : | F |
| Not measured : | N/M |

List of equipment used during the test

| Control Number | Description | Model | Manufacturer | Next Calibration |
|----------------|--|--------------|-----------------------------|------------------|
| 3258 | SONDA DE TEMPERATURA Y HUMEDAD RELATIVA | HUMIDIPROBE | PICO TECHNOLOGY | 2021-04-22 |
| 4575 | ETHERNET TEMPERATURE AND HUMIDITY LOGGER | TR-702W | T&D | 2021-04-22 |
| 7763 | HORN ANTENNA 1-18GHz | BBHA 9120D | SCHWARZBECK MESS-ELEKTRONIK | 2022-11-15 |
| 7769 | PREAMPLIFIER 30dB 500MHz-18GHz | BBV 9718 C | SCHWARZBECK | 2021-01-09 |
| 7817 | EMI TEST RECEIVER 2Hz-44GHz | ESW44 | ROHDE AND SCHWARZ | 2021-10-29 |
| 7826 | ULTRALOG ANTENNA 30MHz-6GHz | HL562E_UPG | ROHDE AND SCHWARZ | 2022-10-15 |
| 7862 | PRE-AMPLIFIER G>30dB 18-40GHz | BLMA 1840-3G | BONN ELEKTRONIK | 2021-11-21 |
| 7922 | HORN ANTENNA 17-40GHz | BBHA 9170 | SCHWARZBECK | --- |
| 8130 | SEMIANECHOIC ABSORBER LINED CHAMBER VI | P29419 | ALBATROSS | --- |
| 8134 | SHIELDED ROOM | P29419 | ALBATROSS PROJECTS GMBH | --- |

Summary

| Emission Test | | |
|---|---------|--------|
| Requirement – Test case | Verdict | Remark |
| Radiated emission test (30 MHz – 1000 MHz) | Pass | -- |
| Radiated emission test (1 GHz – 17 GHz) | Pass | -- |
| Radiated emission test (17 GHz – 26 GHz) | Pass | -- |
| Conducted emission test (150 kHz to 30 MHz) | N/A | See 1 |
| <u>Supplementary information and remarks:</u> 1) The test is not applicable, not required by the standard. Equipment powered by DC | | |

Appendix A: Test results

Appendix A content

| | |
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DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself. The operation modes used by the samples to which the present report refers, are shown in the following table:

| OPERATION MODE | DESCRIPTION |
|----------------|---|
| OM#01 | EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. |
| OM#02 | EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. FM in reception mode. Display showing the radio station information. Power supply: 12Vdc. |

After a preview, it is determined that the work case operation mode is OM#01. The complete results for this mode are included in this report.

RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

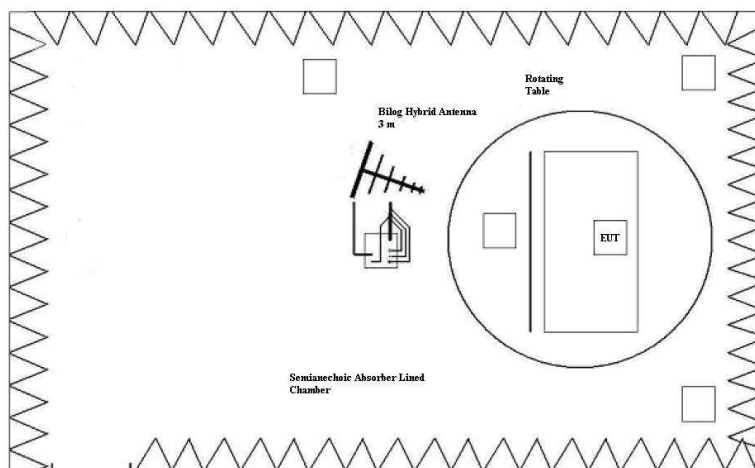
| | | |
|----------------|-------------------|--|
| LIMITS: | Product standard: | FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04) |
| | Test standard: | FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04) |

Limits of interference Class B

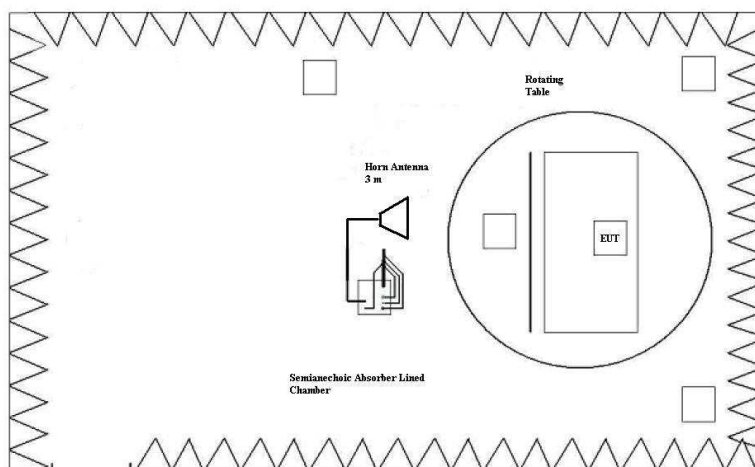
The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 (Updated April 2019) in the frequency range 30 MHz to 26 GHz for class B equipments.

| Frequency range (MHz) | QP* Limit for 3 m | | PK Limit for 3 m |
|-----------------------|---------------------|------------------------------|------------------------------|
| | ($\mu\text{V/m}$) | ($\text{dB}\mu\text{V/m}$) | ($\text{dB}\mu\text{V/m}$) |
| 30 to 88 | 100 | 40 | --- |
| 88 to 216 | 150 | 43.5 | --- |
| 216 to 960 | 200 | 46 | --- |
| Above 960 | 500 | 54 | 74 |

*Above 1GHz, the limit is defined for an AVG detector.



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

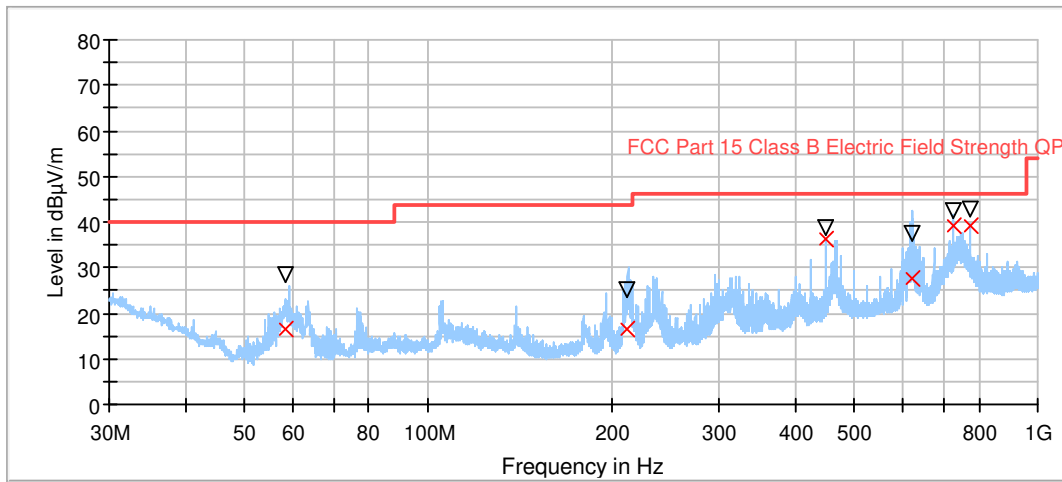
| | |
|--------------------------------|---|
| TESTED SAMPLE: | S/01 |
| TESTED OPERATION MODES: | OM#01 |
| TEST RESULTS: | CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization. |

| CRmmnnRRPP | Description | Result |
|------------|---------------------------|--------|
| CR0101LR | Range: 30 MHz - 1000 MHz. | P |
| CR0101HR1 | Range: 1 GHz – 17 GHz. | P |
| CR0101HR2 | Range: 17 GHz – 26 GHz. | P |

Radiated Emission. CR0101LR

Project: 63185REM.079
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc.

RE FCC Part 15 Class B



— Peak Preview
 × QuasiPeak
 — FCC Part 15 Class B Electric Field Strength QP
 ▽ MaxPeak

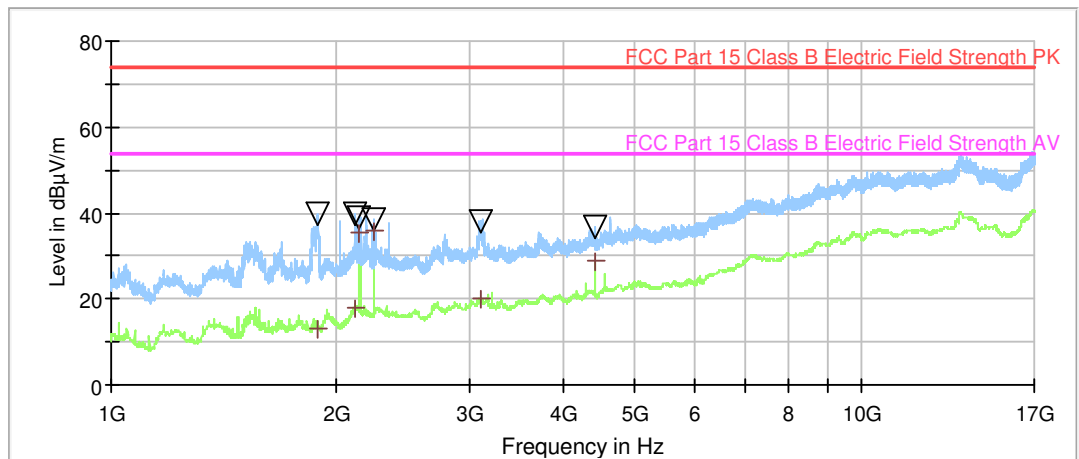
Maximizations

| Frequency (MHz) | QuasiPeak (dBµV/m) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|------------------|----------------|-------------|-------------|-----|---------------|
| 58.546000 | 16.61 | 28.26 | 40.00 | 23.39 | 118.0 | V | 19.0 |
| 212.615000 | 16.53 | 25.33 | 43.52 | 26.99 | 124.0 | V | 136.0 |
| 449.994000 | 36.40 | 38.79 | 46.00 | 9.60 | 198.0 | H | 16.0 |
| 623.984000 | 27.48 | 37.41 | 46.00 | 18.52 | 190.0 | V | 124.0 |
| 725.013000 | 39.02 | 42.35 | 46.00 | 6.98 | 154.0 | V | 27.0 |
| 774.988000 | 38.97 | 42.93 | 46.00 | 7.03 | 140.0 | V | 15.0 |

Radiated Emission. CR0101HR1

Project: 63185REM.079
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. Horizontal and vertical polarization

RE FCC Part 15 Class B



— Average Preview — Peak Preview
— FCC Part 15 Class B Electric Field Strength PK — FCC Part 15 Class B Electric Field Strength AV
▽ MaxPeak + Average

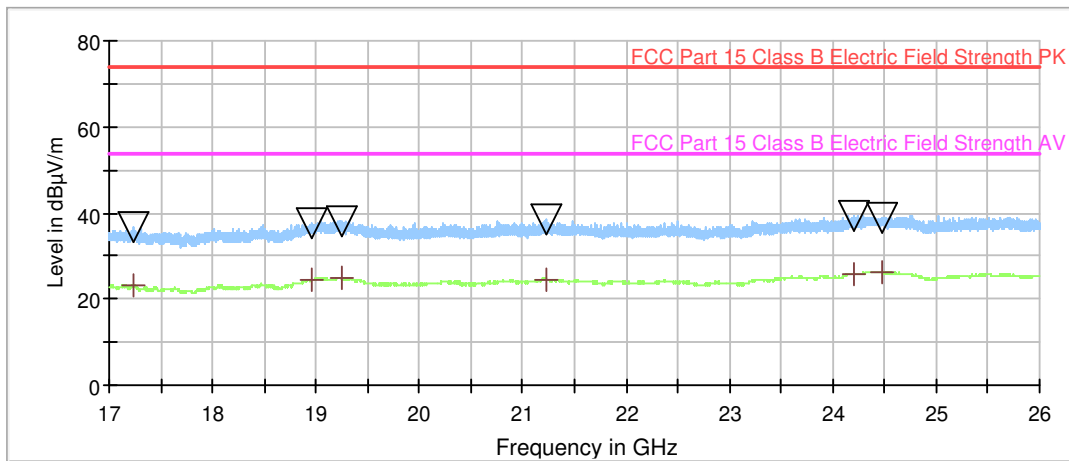
Maximizations

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) |
|-----------------|------------------|------------------|
| 1886.800000 | 39.81 | 13.28 |
| 2108.800000 | 39.72 | 18.09 |
| 2133.600000 | 38.77 | 35.41 |
| 2235.200000 | 38.46 | 35.94 |
| 3110.800000 | 38.04 | 19.98 |
| 4409.600000 | 36.67 | 28.88 |

Radiated Emission. CR0101HR2

Project: 63185REM.079
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. Horizontal and vertical polarization

RE FCC Part 15 Class B



— Average Preview — Peak Preview
— FCC Part 15 Class B Electric Field Strength PK — FCC Part 15 Class B Electric Field Strength AV
▽ MaxPeak + Average

Maximizations

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) |
|-----------------|------------------|------------------|
| 17236.800000 | 36.86 | 23.07 |
| 18955.600000 | 37.78 | 24.57 |
| 19245.600000 | 38.18 | 24.84 |
| 21228.400000 | 38.50 | 24.46 |
| 24203.200000 | 39.36 | 25.75 |
| 24467.600000 | 38.98 | 26.15 |