

Project No: TM-2509000092P  
Report No.: TMWK2509003860KS FCC ID: P4Q-N711

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# RF Exposure Evaluation Report

**FCC 47 CFR § 2.1091**

for  
**Motorcycle Dashcam**

**Model Name.: N711**

Prepared for:

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Prepared by

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**New Taipei City, Taiwan.**  
**Issue Date: October 9, 2025**

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### Revision History

| Rev. | Issue Date      | Revisions     | Effect Page | Revised By |
|------|-----------------|---------------|-------------|------------|
| 00   | October 9, 2025 | Initial Issue | ALL         | Peggy Tsai |



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## 1 Attestation of Test Results

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Applicant Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MiTAC Digital Technology Corporation                                                                      |
| Model Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N711                                                                                                      |
| Applicable Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | FCC 47 CFR § 2.1091<br>FCC 47 CFR § 1.1307<br>FCC 47 CFR § 1.1310<br>Published RF exposure KDB procedures |
| Receive EUT Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | September 4, 2025                                                                                         |
| Date of Test:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | September 23, 2025                                                                                        |
| Compliance Certification Services Inc. , tested the above equipment in accordance with the requirements set forth in the above standards. Determination of compliance is based on the results of the compliance measurement,not taking into account measurement instrumentation uncertainty.All indications of Pass/Fail in this report are opinions expressed by Compliance Certification Services Inc, based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report. |                                                                                                           |
| Approved & Released By:<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Tested by:<br>        |
| Sky Zhou<br>Asst. Section Manager<br>Compliance Certification Services Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | KW Huang<br>Engineer<br>Compliance Certification Services Inc.                                            |



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## 2 Accreditation

|                          |                                                             |
|--------------------------|-------------------------------------------------------------|
| Test Laboratory Name:    | Compliance Certification Services Inc. Wugu Laboratory      |
| Test Laboratory Address: | No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan. |
| FCC Registration No. :   | 444940                                                      |
| MRA:                     | APEC TEL                                                    |



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### **3 Test Specification, Methods and Procedures**

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1091, the following FCC Published RF exposure [KDB](#) procedures:

- 447498 D04 Interim General RF Exposure Guidance v01
- 865664 D02 RF Exposure Reporting v01r02



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## 4 Device Under Test (DUT) Information

### 4.1 DUT Description

|                   |                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------|
| Product           | Motorcycle Dashcam                                                                             |
| Trade Name        | Mio / MAGELLAN / NAVMAN                                                                        |
| Model No.         | N711                                                                                           |
| Model Discrepancy | Difference of the those brand names (list on this report) are just for marketing purpose only. |
| Hardware Version  | R01A                                                                                           |
| Software Version  | VQ02.09.23.NM1AT.21                                                                            |
| Sample Stage      | Identical prototype                                                                            |

## 4.2 Wireless Technologies

| <b>Frequency bands</b>         | <input type="checkbox"/> Bluetooth: 2402MHz-2480MHz<br><input checked="" type="checkbox"/> 802.11b/g/n HT20: 2412MHz ~ 2462 MHz<br><input checked="" type="checkbox"/> 802.11n HT40: 2422MHz ~ 2452 MHz<br><input type="checkbox"/> 802.11a/n HT20: 5180MHz ~ 5240MHz / 5260 ~ 5320MHz / 5500 ~ 5700MHz / 5745MHz ~ 5825MHz<br><input type="checkbox"/> 802.11n HT40: 5190 MHz ~ 5230 MHz / 5270 MHz ~ 5310 MHz / 5510 MHz ~ 5670 MHz / 5755 MHz ~ 5795MHz<br><input type="checkbox"/> 802.11ac VHT20: 5180MHz ~ 5240MHz / 5260 ~ 5320MHz / 5500 ~ 5700MHz / 5745MHz ~ 5825MHz<br><input type="checkbox"/> 802.11ac VHT40: 5190 MHz ~ 5230 MHz / 5270 MHz ~ 5310 MHz / 5510 MHz ~ 5670 MHz / 5755 MHz ~ 5795MHz<br><input type="checkbox"/> 802.11ac VHT80: 5210 MHz / 5290 MHz / 5530 MHz / 5775 MHz<br><input type="checkbox"/> Others |             |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--|--|--------------------|-----------|-------------|--------------------|-----------|-------------|--------------------------|-----------|-------------|--------------------------|-----------|-------------|
| <b>Exposure classification</b> | <input type="checkbox"/> Occupational/Controlled exposure<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
| <b>Antenna Specification</b>   | <p><b>Type:</b> PIFA Antenna<br/> <b>Gain:</b> -3.54 dBi</p> <p>2.4GHz:    Gain :        -3.54 dBi    (Numeric gain: 0.44)        Worst</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
| <b>Maximum tune up power</b>   | <table border="1"> <thead> <tr> <th>2.4GHz</th><th></th><th></th></tr> </thead> <tbody> <tr> <td>IEEE 802.11b Mode:</td><td>14.50 dBm</td><td>(28.184 mW)</td></tr> <tr> <td>IEEE 802.11g Mode:</td><td>18.00 dBm</td><td>(63.096 mW)</td></tr> <tr> <td>IEEE 802.11n HT 20 Mode:</td><td>17.50 dBm</td><td>(56.234 mW)</td></tr> <tr> <td>IEEE 802.11n HT 40 Mode:</td><td>12.50 dBm</td><td>(17.783 mW)</td></tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                    | 2.4GHz      |  |  | IEEE 802.11b Mode: | 14.50 dBm | (28.184 mW) | IEEE 802.11g Mode: | 18.00 dBm | (63.096 mW) | IEEE 802.11n HT 20 Mode: | 17.50 dBm | (56.234 mW) | IEEE 802.11n HT 40 Mode: | 12.50 dBm | (17.783 mW) |
| 2.4GHz                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
| IEEE 802.11b Mode:             | 14.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (28.184 mW) |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
| IEEE 802.11g Mode:             | 18.00 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (63.096 mW) |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
| IEEE 802.11n HT 20 Mode:       | 17.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (56.234 mW) |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |
| IEEE 802.11n HT 40 Mode:       | 12.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (17.783 mW) |  |  |                    |           |             |                    |           |             |                          |           |             |                          |           |             |

### Notes:

- For more details, please refer to the User's manual of the EUT.
- Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
- Disclaimer: The variant trademarks are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.
- Disclaimer: Variant information between/among trademarks is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.
- The tune up power referred the AVG power of the test report TMWK2509003859KR for RF Exposure assessment purpose.



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## 5 Measurement Uncertainty

| PARAMETER                                    | UNCERTAINTY  |
|----------------------------------------------|--------------|
| AC Powerline Conducted Emission              | +/- 2.21 dB  |
| Channel Bandwidth                            | +/- 2.79 dB  |
| RF output power (Power Meter + Power sensor) | +/- 0.24 dB  |
| Power Spectral density                       | +/- 2.74 dB  |
| Conducted Bandedge                           | +/- 2.74 dB  |
| Conducted Spurious Emission                  | +/- 2.74 dB  |
| Radiated Emission_9kHz-30MHz                 | +/- 3.492 dB |
| Radiated Emission_30MHz-200MHz               | +/- 3.62 dB  |
| Radiated Emission_200MHz-1GHz                | +/- 3.899 dB |
| Radiated Emission_1GHz-6GHz                  | +/- 5.063 dB |
| Radiated Emission_6GHz-18GHz                 | +/- 5.122 dB |
| Radiated Emission_18GHz-26GHz                | +/- 3.032 dB |
| Radiated Emission_26GHz-40GHz                | +/- 3.271 dB |



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## 6 Maximum Permissible Exposure

### 6.1 Limits for Maximum Permissible Exposure (MPE)

**Table 1 - Limits for Maximum Permissible Exposure (MPE)**

| Frequency range<br>(MHz)                                | Electric field<br>strength<br>(V/m) | Magnetic field<br>strength<br>(A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging time<br>(minutes) |
|---------------------------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------|
| (A) Limits for Occupational/Controlled Exposure         |                                     |                                     |                                        |                             |
| 0.3-3.0                                                 | 614                                 | 1.63                                | * 100                                  | 6                           |
| 3.0-30                                                  | 1842/f                              | 4.89/f                              | * 900/f <sup>2</sup>                   | 6                           |
| 30-300                                                  | 61.4                                | 0.163                               | 1.0                                    | 6                           |
| 300-1,500                                               |                                     |                                     | f/300                                  | 6                           |
| 1,500-100,000                                           |                                     |                                     | 5                                      | 6                           |
| (B) Limits for General Population/Uncontrolled Exposure |                                     |                                     |                                        |                             |
| 0.3-1.34                                                | 614                                 | 1.63                                | * 100                                  | 30                          |
| 1.34-30                                                 | 824/f                               | 2.19/f                              | * 180/f <sup>2</sup>                   | 30                          |
| 30-300                                                  | 27.5                                | 0.073                               | 0.2                                    | 30                          |
| 300-1,500                                               |                                     |                                     | f/1500                                 | 30                          |
| <b><u>1,500-100,000</u></b>                             |                                     |                                     | 1.0                                    | 30                          |

## 6.2 MPE Calculation Method

### Calculation

Given  $E = \frac{\sqrt{30 \times P \times G}}{d}$  &  $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \text{ Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm<sup>2</sup>

If, Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

### 6.3 MPE EXEMPTION

- (A) The available maximum time-averaged power is no more than 1 mW
- (B) The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold  $P_{th}$  (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

$d$  = the separation distance (cm);

- (C) Using Table 1 and the minimum separation distance ( $R$  in meters) from the body of a nearby person for the frequency ( $f$  in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply,  $R$  must be at least  $\lambda/2\pi$ , where  $\lambda$  is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of  $\lambda/4$  or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

| Single RF Sources Subject to Routine Environmental Evaluation |                       |
|---------------------------------------------------------------|-----------------------|
| RF Source frequency (MHz)                                     | Threshold ERP (watts) |
| 0.3-1.34                                                      | $1,920 R^2$ .         |
| 1.34-30                                                       | $3,450 R^2/f^2$ .     |
| 30-300                                                        | $3.83 R^2$ .          |
| 300-1,500                                                     | $0.0128 R^2 f$ .      |
| 1,500-100,000                                                 | $19.2 R^2$ .          |
| Note: $R$ is in meters, $f$ is in MHz.                        |                       |

#### 6.4 Multiple RF sources

In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation),

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$



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## 7 MPE Exemption Option B

### WIFI 2.4GHz (DTS)

| Mode               | Frequency (MHz) | R(m) | Max Tune-up power (dBm) | G(dBi) | Max Tune-up EIRP (dBm) | Max Tune-up ERP (dBm) | Max Tune-up ERP (mW) | ERP Threshold (mW) | MPE Exemption |
|--------------------|-----------------|------|-------------------------|--------|------------------------|-----------------------|----------------------|--------------------|---------------|
| IEEE 802.11b       | 2412            | 0.2  | 14.5                    | -3.54  | 10.96                  | 8.81                  | 7.603                | 3060               | Complies      |
| IEEE 802.11g       | 2417            | 0.2  | 18.0                    | -3.54  | 14.46                  | 12.31                 | 17.022               | 3060               | Complies      |
| IEEE 802.11n HT 20 | 2417            | 0.2  | 17.5                    | -3.54  | 13.96                  | 11.81                 | 15.171               | 3060               | Complies      |
| IEEE 802.11n HT 40 | 2437            | 0.2  | 12.5                    | -3.54  | 8.96                   | 6.81                  | 4.797                | 3060               | Complies      |

END OF REPORT