# ECE TYPE-APPROVAL CERTIFICATE

E24

Concerning[2]: Approval granted
~~Approval extended~~
~~Approval refused~~
~~Approval withdrawn~~
~~Production definitively discontinued~~

of a type of electrical/electronic sub-assembly[2] with regard to Regulation No. 10

Approval No: ***E24*10R06/03*7295*00***

| | | |
|---|---|---|
| 1. | Make (trade name of manufacturer): | ***Albrecht / MAN*** |
| 2. | Type and general commercial description: | ***Albrecht AE 6390***<br>*Albrecht AE 6390 / MAN 2008* |
| 3. | Means of identification of type, if marked on the ~~vehicle/~~component~~/separate technical unit~~[2] | ***Type designation*** |
| 3.1 | Location of that marking: | ***On the top side of the housing*** |
| 4. | Category of vehicle: | ***N/A*** |
| 5. | Name and address of manufacturer: | ***Alan Electronics GmbH***<br>***Daimlerstraße 1g***<br>***D-63303 Dreieich, Germany*** |
| 6. | In the case of components and separate technical units, location and method of affixing of the approval mark: | ***Adhesive label on the top side of the housing*** |
| 7. | Address(es) of assembly plant(s): | ***Qixiang Electron Science & Technology Co., Ltd.***<br>***Qixiang Building, Tangxi Industrial Zone,***<br>***Luojiang District, Quanzhou,***<br>***362011 Fujian, China*** |

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(1) Distinguishing number of the country which has granted/extended/refused/withdrawn an approval (see approval provisions in the Regulation).
(2) Strike out what does not apply


NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (+353+1) 807 3800, Facsimile: 01-807 3844

Approval No: ***E24*10R06/03*7295*00***

| | | |
|---|---|---|
| 8. | Additional information (where applicable): | ***See appendix below*** |
| 9. | Technical service responsible for carrying out the tests: | ***Eurofins Product Service GmbH<br>Storkower Str. 38 C<br>15526 Reichenwalde<br>Germany*** |
| 10. | Date of test report: | ***17.10.2025*** |
| 11. | Number of test report: | ***G0M-2506-3161-EA01-V01*** |
| 12. | Remarks (if any): | ***See appendix below*** |
| 13. | Place: | ***Dublin*** |
| 14. | Date: | ***22nd October, 2025*** |
| 15. | Signature: | |

NATIONAL STANDARDS AUTHORITY OF IRELAND
NSAI Certification
TRANSPORT DEPARTMENT

16. The index to the information package lodged with the approval authority, which may be obtained on Request, is attached.

17. Reasons for extension: ***N/A***


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Approval No: ***E24*10R06/03*7295*00***

# Appendix

**Appendix to Type Approval Communication Form No *E24*10R06/03*7295*00***
**Concerning the Type Approval of an Electrical/Electronic Sub-assembly under**
**UN Regulation No. 10**

| | | |
|---|---|---|
| 1. | Additional information | |
| 1.1. | Electrical system rated voltage: | ***DC 12 /24 V ~~pos~~/neg ground***[1] |
| 1.2. | This ESA can be used on any vehicle type with the following restrictions: | ***See manufacturer's specifications.*** |
| 1.2.1 | Installation conditions, if any: | ***See manufacturer's specifications.*** |
| 1.3. | This ESA can be used only on the following vehicle types: | ***N/A*** |
| 1.3.1 | Installation conditions, if any: | ***N/A*** |
| 1.4. | The specific test method(s) used and the frequency ranges covered to determine immunity were: (Please specify precise method used from Annex 9): | ***N/A*** |
| 1.5. | Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests: | ***Eurofins Product Service GmbH*** |
| 2. | Remarks: | ***N/A*** |

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(1) Strike out what does not apply


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Approval No: ***E24*10R06/03*7295*00***

# Index to the Information Package

| | |
|---|---|
| Date of issue: | ***22nd October, 2025*** |
| Date of latest amendment: | ***N/A*** |
| Reason for extension/revision: | ***N/A*** |

1. Additional conditions, and advisory notes on legal alternatives.

2. Test report(s)

| | |
|---|---|
| - numbers(s): | ***G0M-2506-3161-EA01-V01*** |
| - date of issue: | ***17.10.2025*** |
| - date of latest amendment: | ***N/A*** |

3. Information document

| | |
|---|---|
| - number(s): | ***G0M-2506-3161-BB01-V01*** |
| - date of issue: | ***17.10.2025*** |
| - date of latest amendment: | ***N/A*** |
| Documentation: | ***82 pages*** |



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Approval No: ***E24*10R06/03*7295*00***

Appendix: **Additional conditions, and advisory notes on legal alternatives**

A: Additional conditions:

1. The attached technical report, with any of its attachments, forms part of this Type Approval certificate.
2. Each device from series production shall be to the measurements specified in the attached drawings, and shall be manufactured only from the materials specified in the Approval documents.
3. Changes in the type are permitted only with the explicit permission of NSAI. Breaches of this requirement will lead to a withdrawal of the Type Approval, and in addition may be subject to criminal prosecution.
4. At regular intervals, any tests or associated checks prescribed by the applicable legislation to verify continued conformity with the approved type shall be carried out. The manufacturer shall demonstrate compliance with this by submitting to NSAI evidence of adequate arrangements and documented control plans for each type approved.
5. Any set of samples or test pieces showing evidence of non-conformity shall give rise to further sampling and testing and all steps shall be taken to restore conformity of production.
6. This Type Approval will expire when it is surrendered by the holder, or withdrawn by NSAI, or when the approved type no longer conforms to legal requirements. The recall of the Type Approval can be issued by NSAI when the conditions required for the issuing or continuation of the Type Approval are no longer current, or when the Approval holder is in breach of the duties attached to the Type Approval, or when it is established that the approved type no longer meets the requirements of traffic safety.
7. Changes in the company name, address or manufacturing site, as well as in any of the sales or other agents specified in the issuing of the approval must immediately be notified to NSAI.
8. The duties imposed by the issuing of this certificate are not transferable. The legal protection of third parties is not affected by this certificate.
9. When the manufacture or sale of the system, component or separate technical unit has not been started within one year of the date of issue of this certificate, then NSAI is to be informed. This requirement also applies when the manufacture or sale has been halted for more than one year, or when it ought to have been halted for more than one year. The initial commencement of manufacture or sale, or the resumption of manufacture or sale, shall then be notified to NSAI within one month of commencement or resumption.

B: Legal Options:

Any objection to the requirements set out in this certificate shall be made within one month of the date of issue. The objection shall be made, in writing, to NSAI in Dublin.



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eurofins | Product Service

# Prüfbericht / *Test Report*
## *Nr./No.* G0M-2506-3161-EA01-V01

über die einheitliche Prüfung einer elektrischen/elektronischen Unterbaugruppe (EUB) hinsichtlich der elektromagnetischen Verträglichkeit gemäß der Regelung Nr. 10 der UNECE

*on the uniform testing of an electrical/electronic sub-assembly (ESA) relating to the electromagnetic compatibility in accordance with Regulation No. 10 of the UNECE*

# UN - R 10
## Änderungsserie 06, Ergänzung 03
## *06 series of amendments, supplement 03*

| **Genehmigungsstand** *Approval status* | |
|---|---|
| ☒ | Erteilung einer Typgenehmigung *Granting of a type approval* |
| ☐ | Erweiterung zur Typgenehmigung Nr. ..... *Extension to type approval no. …* |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

## 1. Allgemeine Angaben *General information*

| | | |
|---|---|---|
| 1.1 | Marke<br>*Make* | : Albrecht / MAN |
| 1.2 | Typ<br>*Type* | : Albrecht AE 6390 |
| | ggf. Ausführung(en)<br>*Version(s), if applicable* | : MAN 2008 |
| | Handelsbezeichnung(en)<br>*General commercial description(s)* | : Albrecht AE 6390 / MAN 2008 |
| 1.3 | Name und Anschrift des Herstellers<br>*Name and address of the manufacturer* | : Alan Electronics GmbH<br>Daimlerstraße 1g<br>D-63303 Dreieich<br>Germany |
| | ggf. Name und Anschrift des bevollmächtigten Vertreters<br>*Name and address of representative, if applicable* | : N/A |
| 1.4 | Beschreibungsbogen<br>*Information document* | |
| | Nr.<br>*No.* | : G0M-2506-3161-BB01-V01 |
| | Ausgabedatum<br>*Date of issue* | : 2025-09-02 |
| | Änderungsdatum<br>*Date of change* | : 2025-10-17 |
| 1.5 | Liste der Änderungen<br>*List of modifications* | : N/A |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

## 2. Prüfobjekt(e) *Test object(s)*

| | | | |
|---|---|---|---|
| 2.1 | Funktionsbeschreibung<br>*Function description* | : | The Albrecht AE 6390 and MAN 2008 are CB radios featuring a large 2.4-inch display and a powerful front speaker. Additionally, they are equipped with VOX hands-free functionality, enabling communication within the vehicle without needing to hold the microphone. The radio automatically detects when the driver is speaking and begins transmission seamlessly. The sensitivity and delay of the VOX feature can be adjusted in multiple stages, allowing for customized performance. This ensures that the CB radios can be used confidently and in compliance with the latest road traffic regulations § 23 (1a) StVO.<br><br>The Albrecht AE 6390 and MAN 2008 are variants of the same device, identical in all aspects except for the antenna connector, power connector, and display backlighting. |
| 2.2 | Geprüfte Ausführung(en)<br>*Tested construction(s)* | : | Albrecht AE 6390<br><br>Sample ID: 51731<br><br>SN: prototype<br><br>After an initial scan, the Albrecht AE 6390 model was selected due to its highest emission level. |
| | Softwarestand und ggf. Checksumme<br>*Software version and checksum (if applicable)* | : | V1.0 |
| | Hardware<br>*Hardware* | : | V1.1 |
| 2.3 | Geprüfte Betriebszustand(-zustände)<br>*Tested operating state(s)* | : | The EUT is operating in transmitting mode. Transmitting is considered the most likely to produce electromagnetic radiation, as it involves the generation of high-power RF signals.<br><br>Transmission is on channel FM 40, EU band. |
| 2.4 | Geprüfte Nennspannung(en)<br>*Tested rated voltage(s)* | : | 12 V DC and 24 V DC |

2.5 Bei dem Genehmigungsobjekt handelt es sich um…
*The approval object is…*

☒ eine EUB, die nicht im Zusammenhang mit einem Anschlusssystem zum Laden eines REESS steht
*an ESA that is not related to a connection system for charging a REESS*

☐ ein vollständiges REESS
*a complete REESS*

Wurden die HV-Spannungen und HV-Ströme bei den Prüfungen bzw. Messungen berücksichtigt?
*Have the HV voltages and HV currents been taken into account in the tests and measurements?*
☐ Ja / *Yes* ☐ Nein / *No*

☐ ein vollständiges Anschlusssystem zum Laden eines REESS
*a complete connection system for charging a REESS*

Wurden die HV-Spannungen und HV-Ströme bei den Prüfungen bzw. Messungen berücksichtigt?
*Have the HV voltages and HV currents been taken into account in the tests and measurements*
☐ Ja / *Yes* ☐ Nein / *No*

☐ eine Komponente eines Anschlusssystems zum Laden eines REESS
*a component of a connection system for charging a REESS*

Wurden die HV-Spannungen und HV-Ströme bei den Prüfungen bzw. Messungen berücksichtigt?
*Have the HV voltages and HV currents been taken into account in the tests and measurements?*
☐ Ja / *Yes* ☐ Nein / *No*

☐ eine Lichtquelle oder einen Teil einer Lichtquelle gem. Punkt 3.2.10 der Regelung
*a light source or a part of a light source acc. to item 3.2.10 of the regulation*

Genehmigungsnummer gemäß Punkt 3.2.10 (a) der Regelung oder Nummer des Prüfberichtes gemäß Punkt 3.2.10 (b) der Regelung :
*Approval number according to item 3.2.10 (a) of the regulation or number of test report according to item 3.2.10 (b) of the regulation*

2.6 Haben die Geräte des Typs Funktionen im Zusammenhang mit der Störfestigkeit?
*Do the devices of the type have immunity related functions?*
☐ Ja / *Yes* ☒ Nein / *No*

Ggf. Begründung : No connection to immunity related functions or systems
*Reason, if necessary*

Typ / *Type* : Albrecht AE 6390

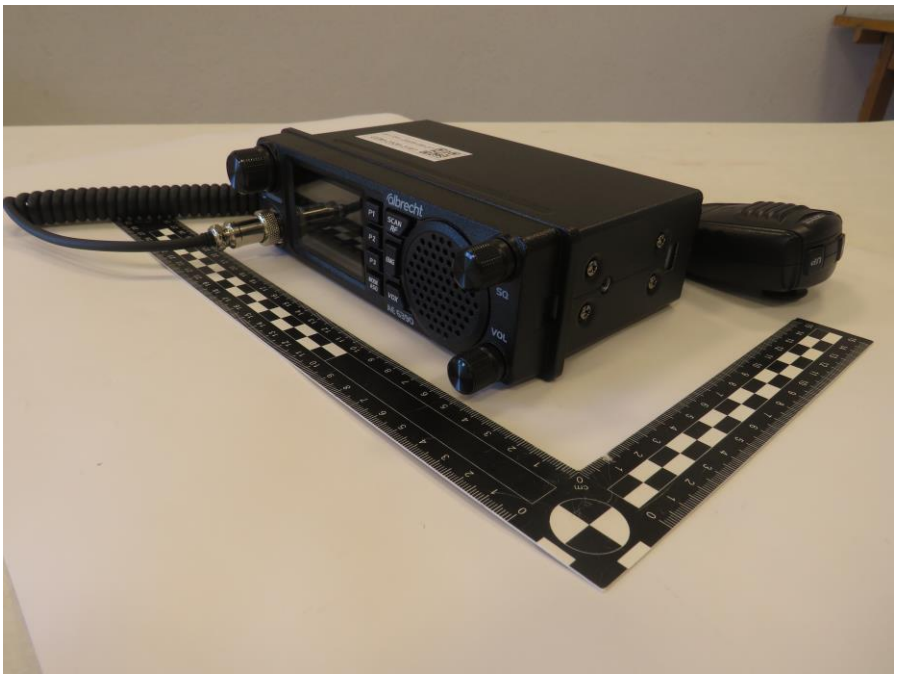
Hersteller / *Manufacturer* : Alan Electronics GmbH

| | | | |
|---|---|---|---|
| 2.7 | Müssen die Geräte des Typs während der Motorstartphase in Betrieb sein?<br>*Do the devices of the type have to be in operation during the engine start phase?* | ☐ Ja / *Yes* | ☒ Nein / *No* |
| 2.8 | Fotodokumentation des Prüflings inkl. vorhandener Aufschriften<br>*Photo documentation of the examinee including existing labels* | :siehe nächste Seiten / *see next pages* | |

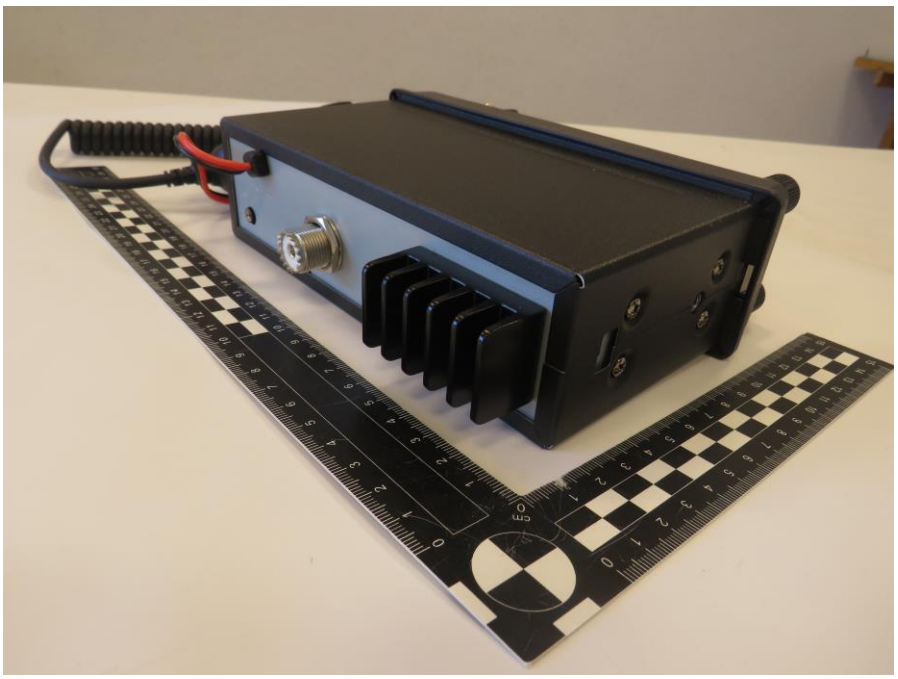
Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

**DUT IN PERSPECTIVE I**




**DUT IN PERSPECTIVE II**

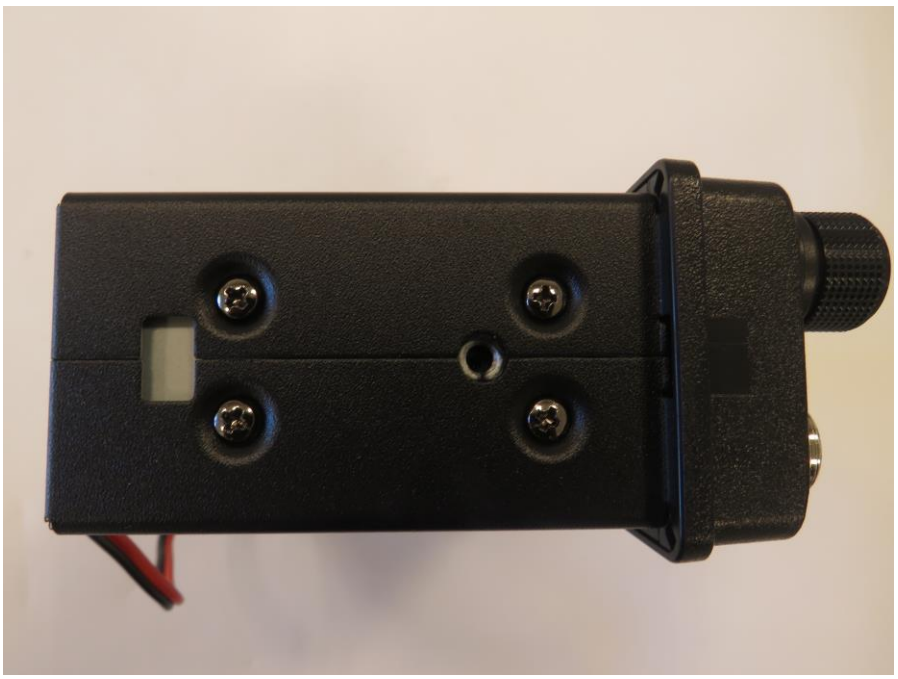


Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

**FRONT SIDE**

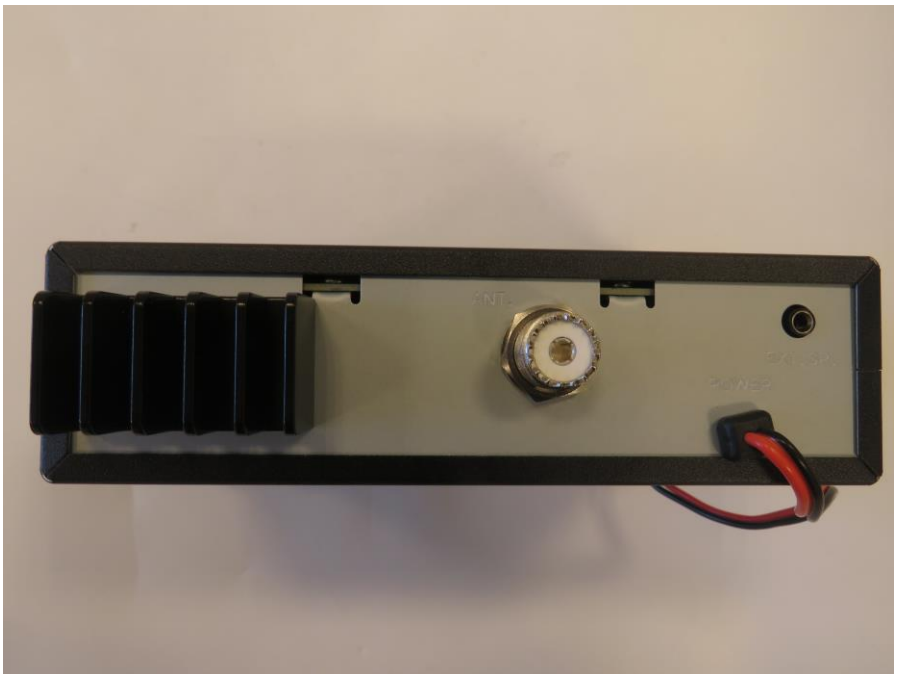

**LEFT SIDE**



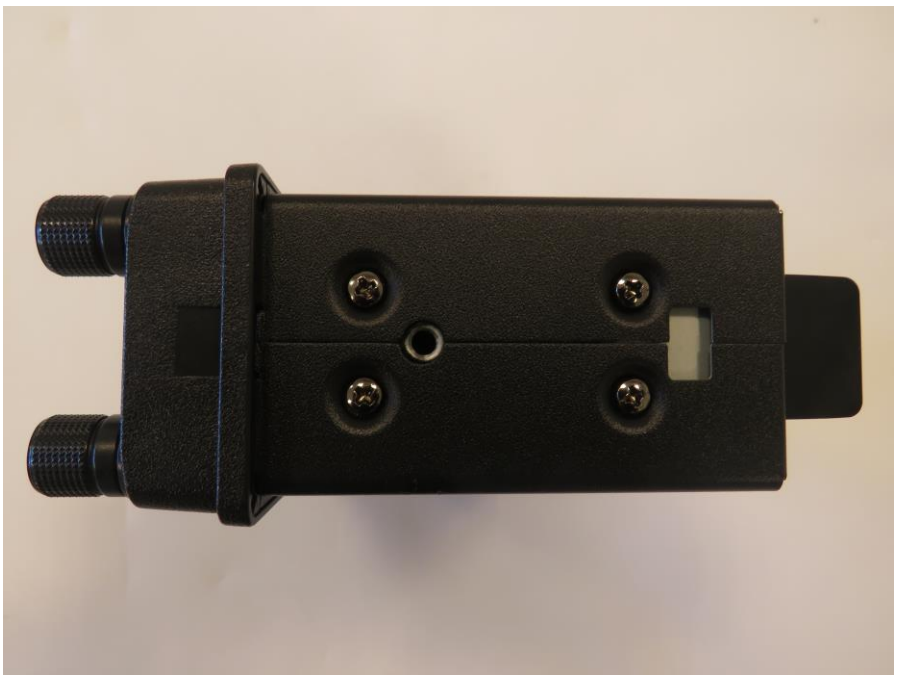
Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

**REAR SIDE**



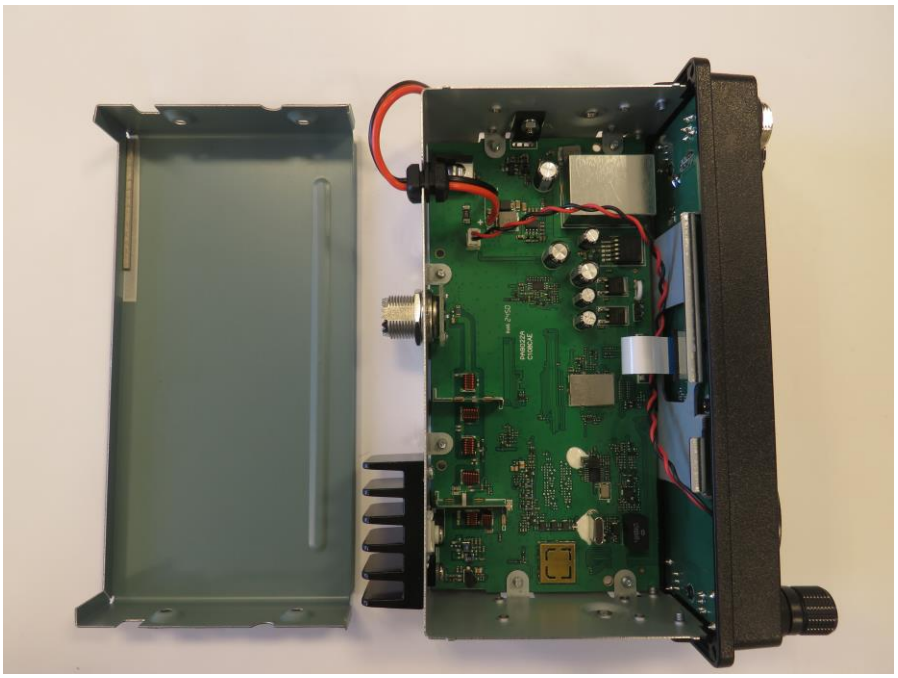
**RIGHT SIDE**



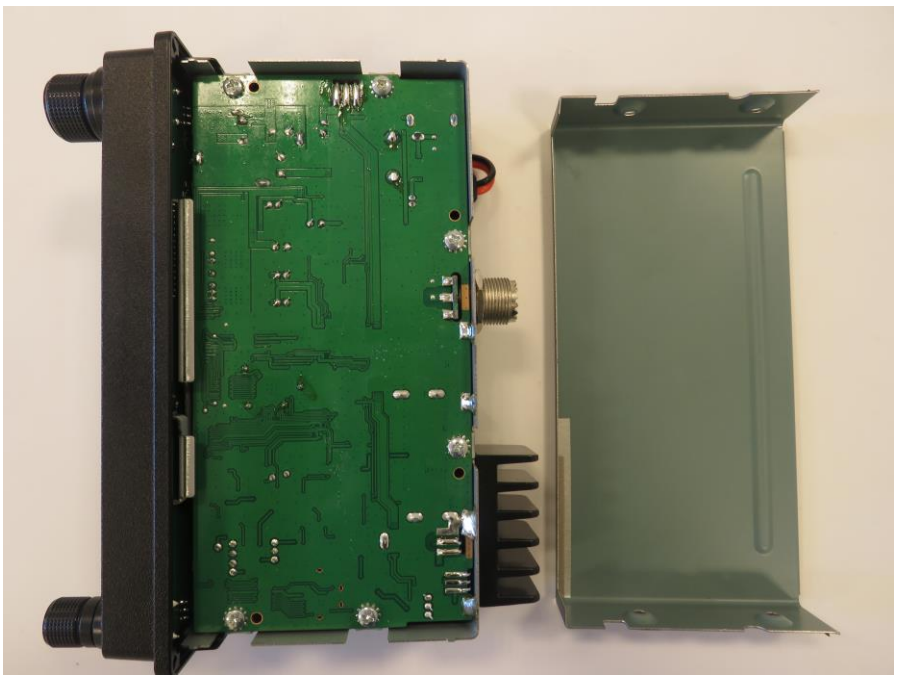
Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

**DUT OPEN I**



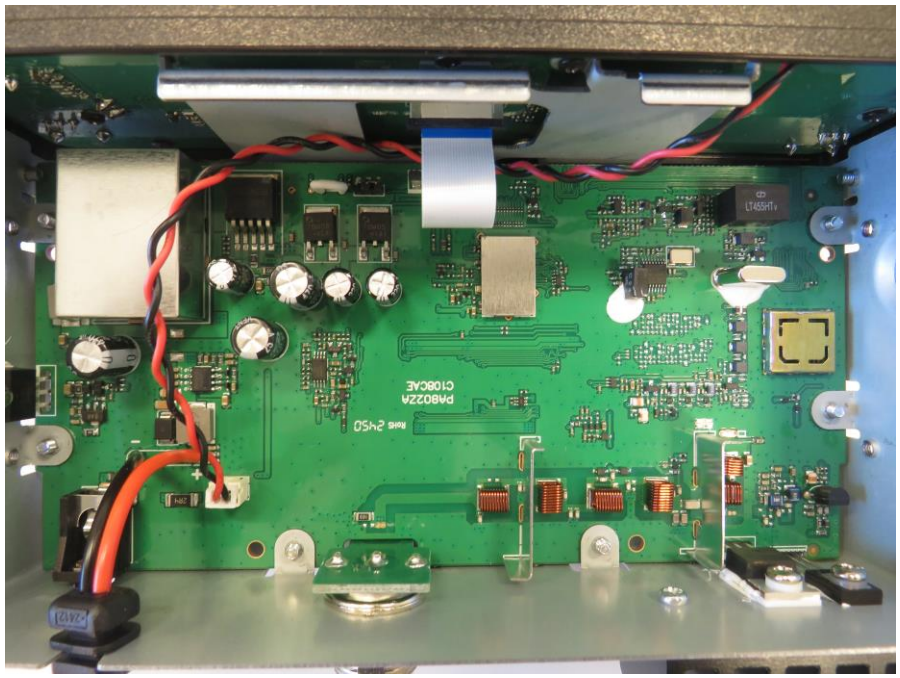
**DUT OPEN II**



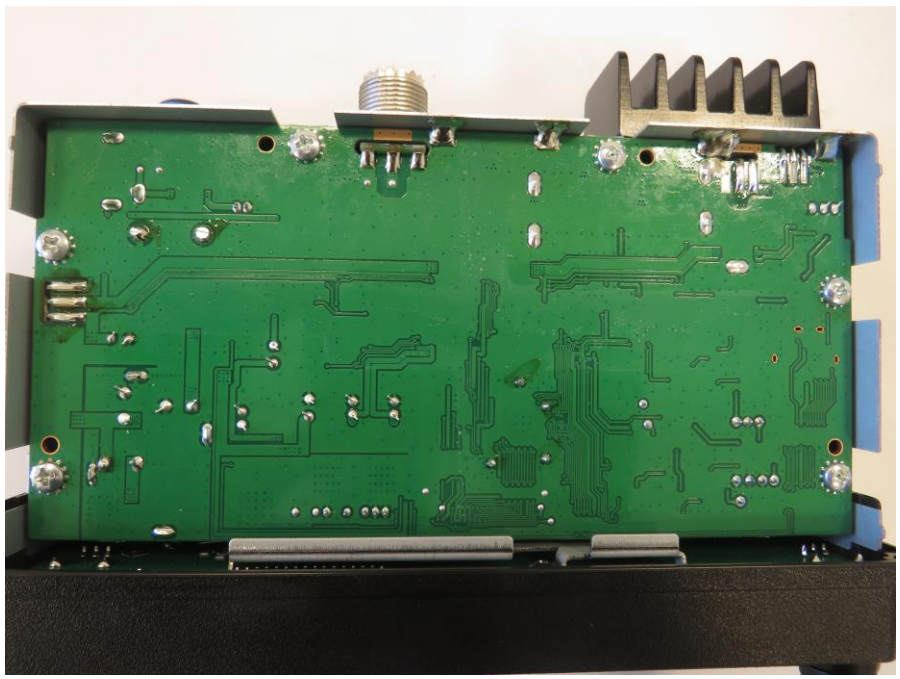
Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

**PCB TOP SIDE**



**PCB BOTTOM SIDE**



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

**LABEL Albrecht AE 6390**


**LABEL MAN 2008**

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

## 3. Angaben zur Prüfung
***Test details***

3.1 Ansprechpartner beim Technischen Dienst für diese Genehmigung
*Contact person at the technical service for this approval*

| | | |
|---|---|---|
| Name<br>*Name* | : | Dipl.-Ing. (FH) Stephan Liebich, M.A. |
| Telefonnummer<br>*Telephone number* | : | 033631 888-301 |
| E-Mail-Adresse<br>*E-mail address* | : | stephanliebich@eurofins.de |

| | | | |
|---|---|---|---|
| 3.2 | Ort der Prüfung<br>*Place of testing* | : | Eurofins Product Service GmbH<br>Storkower Str. 38 C<br>15526 Reichenwalde<br>Germany |
| 3.3 | Datum der Prüfung<br>*Date of testing* | : | 2025-08-11 to 2025-08-13 |
| 3.4 | Mess- und Prüfeinrichtungen<br>*Equipment for measuring and testing* | : | Die Prüfungen wurden auf Anlagen durchgeführt, die den Anforderungen der Regelung entsprechen.<br>/<br>*The equipment on which the tests were carried out, fulfilled the requirements of the regulation.* |
| 3.5 | Bemerkung<br>*Remark* | : | EUT reception: 2025-06-16<br>Ambient temperature: 24°C ± 3<br>Humidity: 45 % |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

## 4. Prüfprotokoll / *Test protocol*

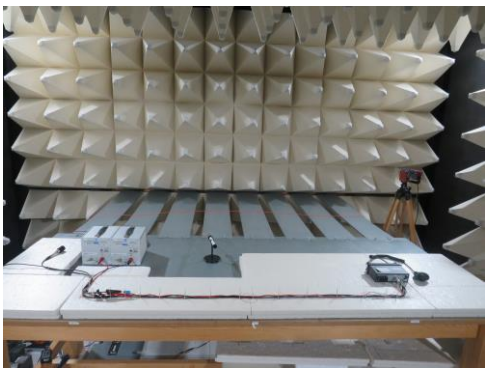
4.1 Messung breitbandiger elektromagnetischer Störstrahlungen von EUB gemäß Punkt 6.5 bzw. Punkt 7.10 der Regelung
*Measurement of radiated broadband electromagnetic emissions from ESAs according to item 6.5 or item 7.10 of the regulation*

Die Messung wurde durchgeführt / *The measurement was realised* ☒ Ja / *Yes* ☐ Nein / *No*
Begründung / *Reason*: N/A

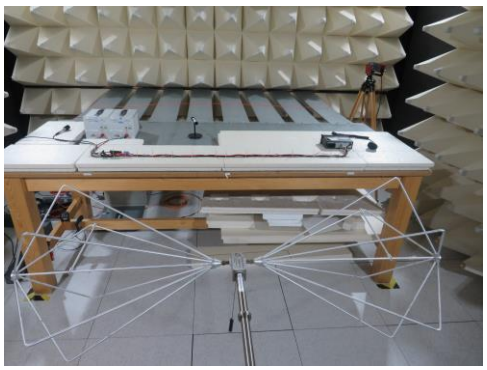
4.1.1 Messverfahren / *Measurement procedure* : Spitzenwert / peak

4.1.2 Messaufbau / *Measurement setup* : Halle gemäß CISPR 25 Ed. 2 / *Chamber acc. to CISPR 25 ED. 2*

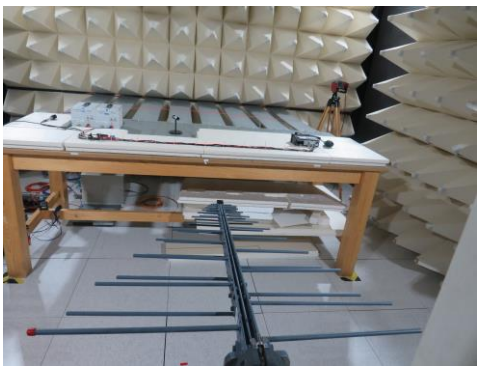
4.1.3 Fotodokumentation des Messaufbaus / *Photo documentation of the measurement setup* :



TEST SETUP



TEST SETUP < 200 MHz



TEST SETUP > 200 MHz

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

Liste der Messmittel
List of test equipment

| | | | |
|---|---|---|---|
| Software: Radimation | | | Version 2024.1.8 |
| Semi-Anechoic chamber | | | EF 00395 |
| Biconical Antenna | Schwarzbeck | VHBB912/ BBA9106 | EF01392 |
| LPD antenna | R&S | HL 223 | EF00212 |
| EMI Receiver | R&S | ESU | EF00379 |
| LISN | Schwarzbeck | NNBM 8124 N | EF01691 |
| LISN | Schwarzbeck | NNBM 8124 N | EF01692 |

4.1.4 Betriebszustand des Prüflings während der Messung
*Operational state of the test sample during the measurement*
: Siehe Punkt 2.3 / *see item 2.3*

4.1.5 Messergebnisse
*Measurement results*
: Siehe nächste Seiten / *see next pages*

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-11 17:04:08 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 13.5 V DC |
| Antenna, Distance & Polarization: | Schwarzbeck VHBB 9124, 1 m, Vertical |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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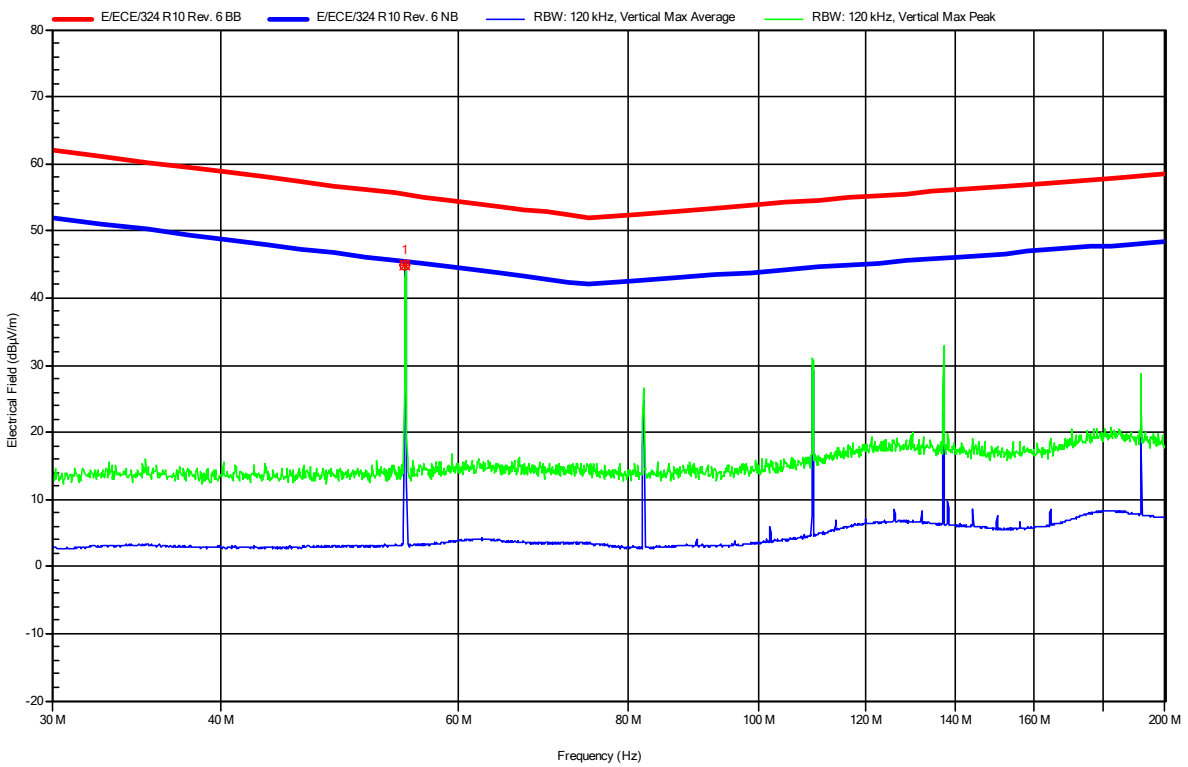


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 30 MHz | 200 MHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 44.95 | 55.42 | -10.48 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 44.96 | 45.42 | -0.46 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-12 09:00:06 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 13.5 V DC |
| Antenna, Distance & Polarization: | Schwarzbeck VHBB 9124, 1 m, Horizontal |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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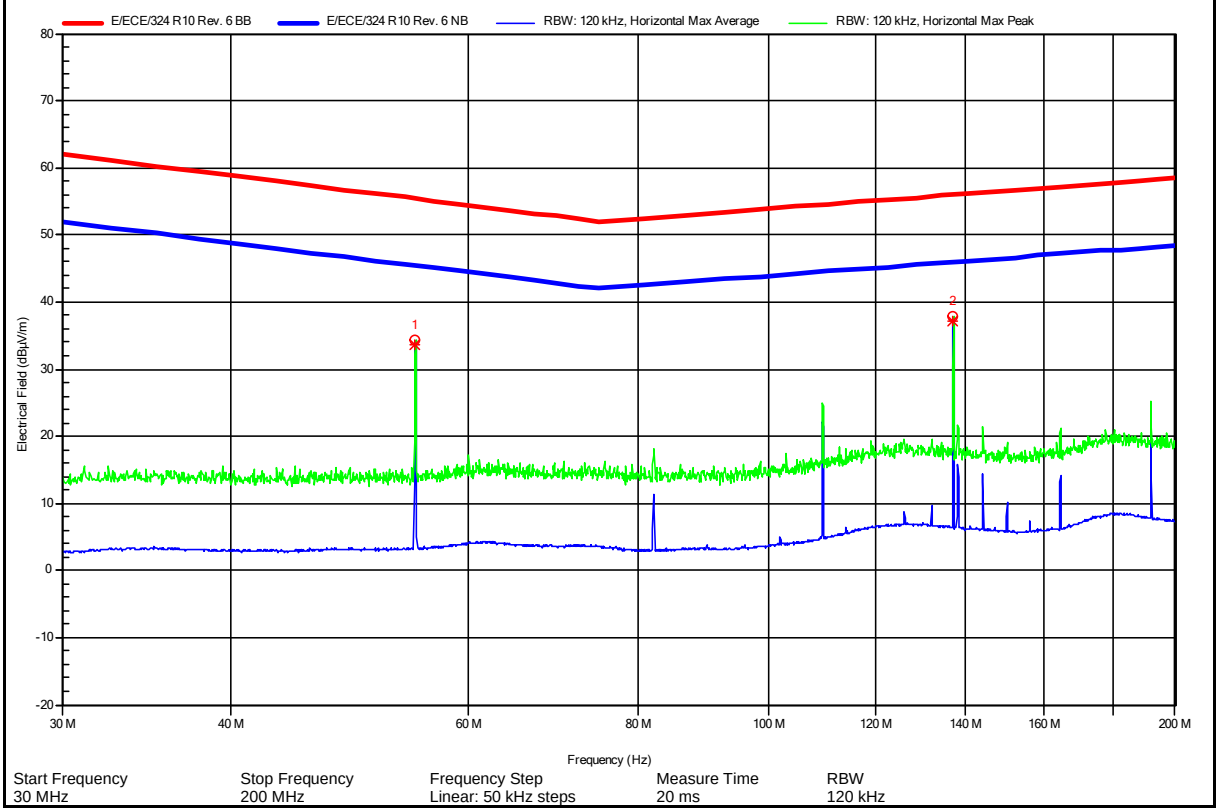


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 30 MHz | 200 MHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 33.72 | 55.42 | -21.7 | Pass |
| 2 | 137.025 | 37.13 | 55.96 | -18.83 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 33.7 | 45.42 | -11.72 | Pass |
| 2 | 137.025 | 37.12 | 45.96 | -8.84 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-11 15:45:34 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 13.5 V DC |
| Antenna, Distance & Polarization: | Rohde & Schwarz HL 223, 1 m, Vertical |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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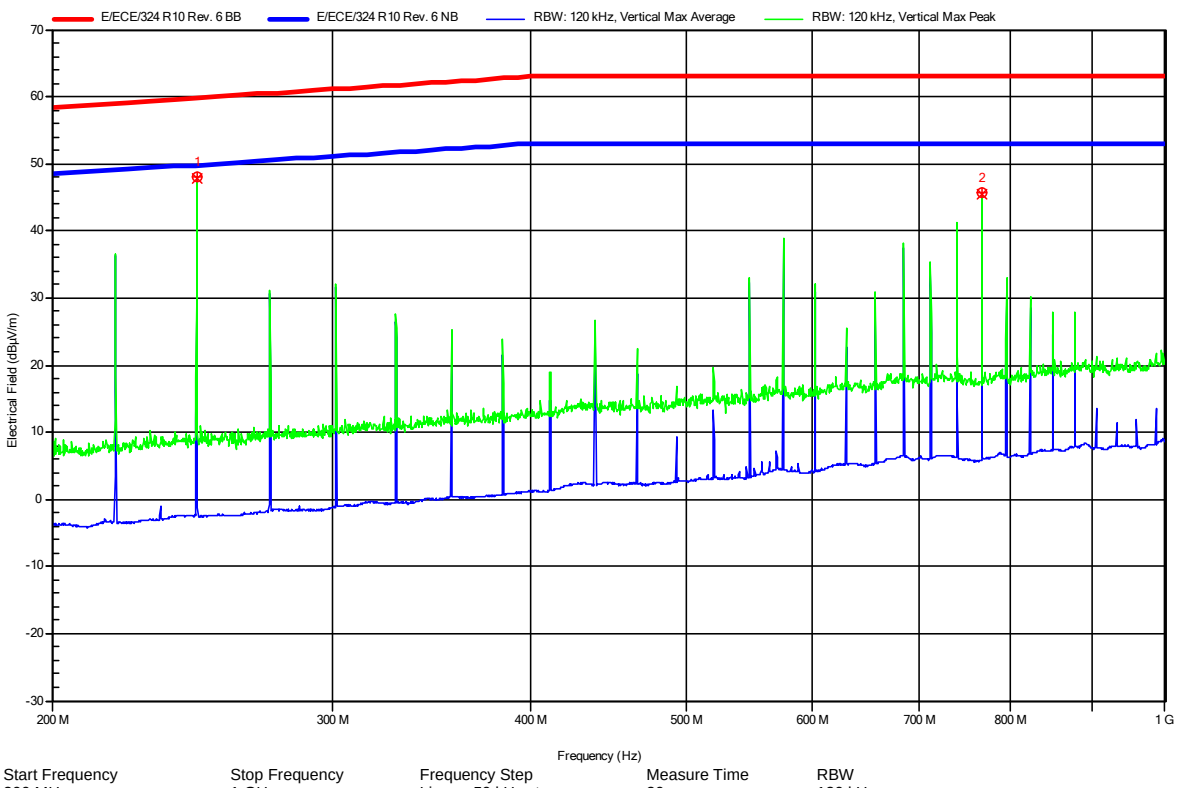


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 200 MHz | 1 GHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 47.82 | 59.82 | -12 | Pass |
| 2 | 767.339 | 45.5 | 63 | -17.5 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 48.02 | 49.82 | -1.8 | Pass |
| 2 | 767.339 | 45.65 | 53 | -7.35 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-11 16:45:57 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 13.5 V DC |
| Antenna, Distance & Polarization: | Rohde & Schwarz HL 223, 1 m, Horizontal |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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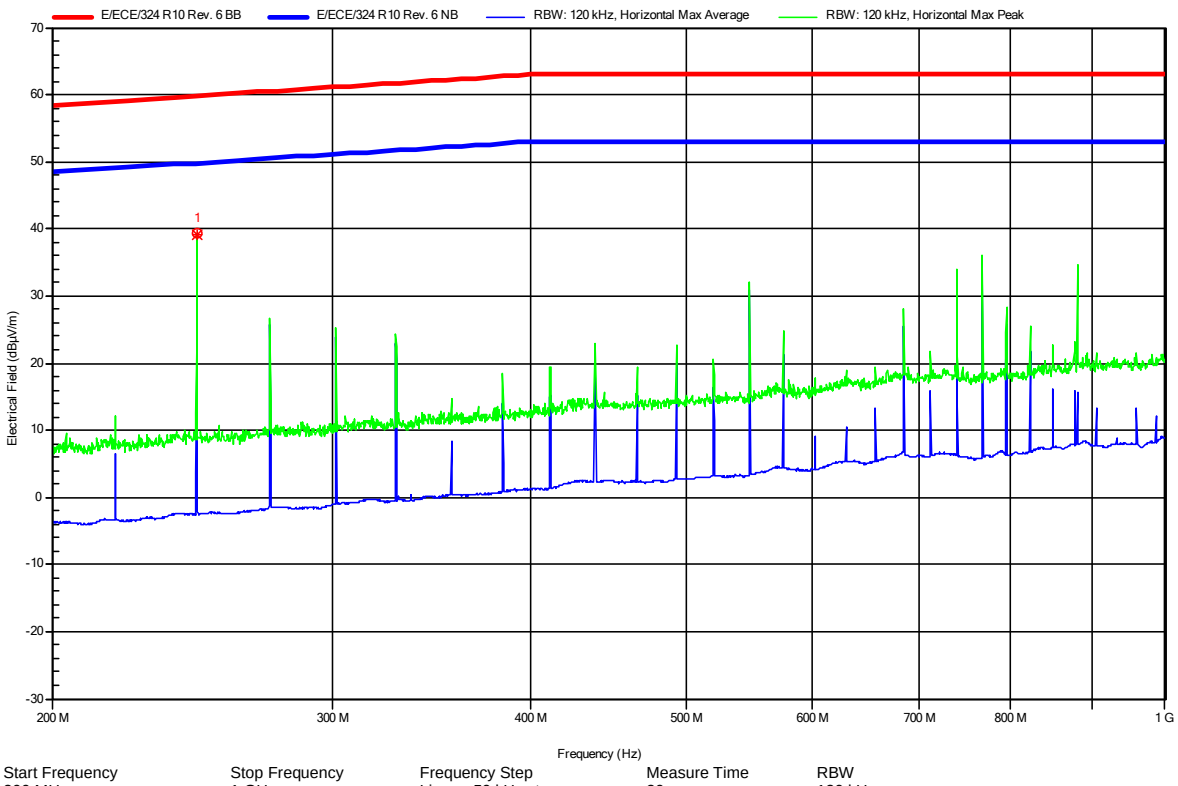


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 200 MHz | 1 GHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 39.05 | 59.82 | -20.77 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 39.22 | 49.82 | -10.6 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-11 17:07:58 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 27 V DC |
| Antenna, Distance & Polarization: | Schwarzbeck VHBB 9124, 1 m, Vertical |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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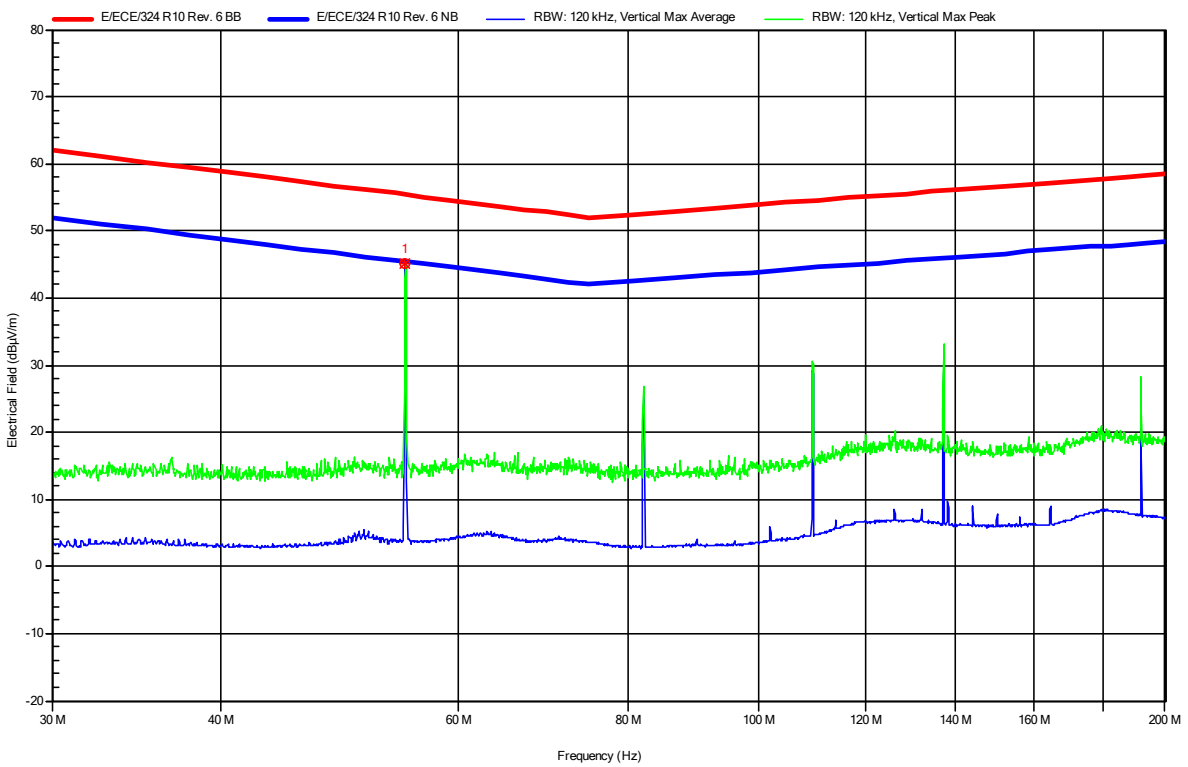


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 30 MHz | 200 MHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 45.07 | 55.42 | -10.35 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 45.09 | 45.42 | -0.33 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-12 08:55:05 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 27 V DC |
| Antenna, Distance & Polarization: | Schwarzbeck VHBB 9124, 1 m, Horizontal |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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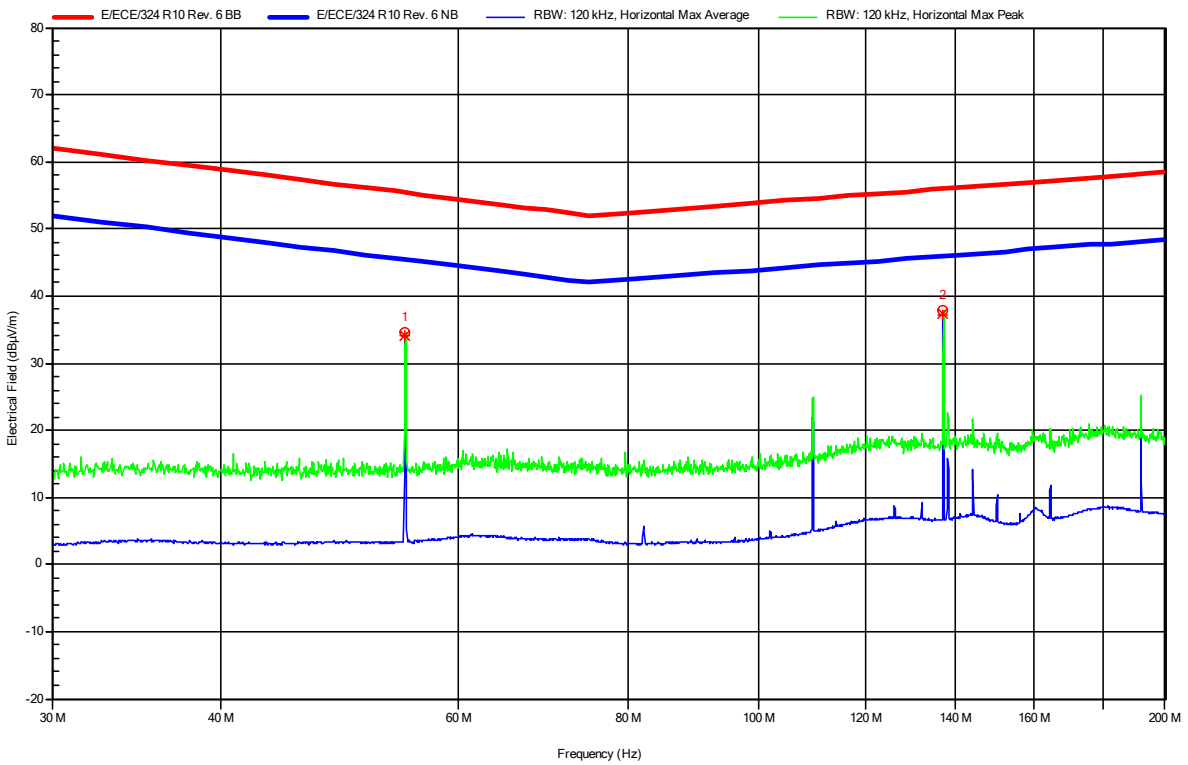


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 30 MHz | 200 MHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 34.1 | 55.42 | -21.32 | Pass |
| 2 | 137.025 | 37.29 | 55.96 | -18.68 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 54.81 | 34.09 | 45.42 | -11.34 | Pass |
| 2 | 137.025 | 37.27 | 45.96 | -8.69 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-11 16:01:25 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 27 V DC |
| Antenna, Distance & Polarization: | Rohde & Schwarz HL 223, 1 m, Vertical |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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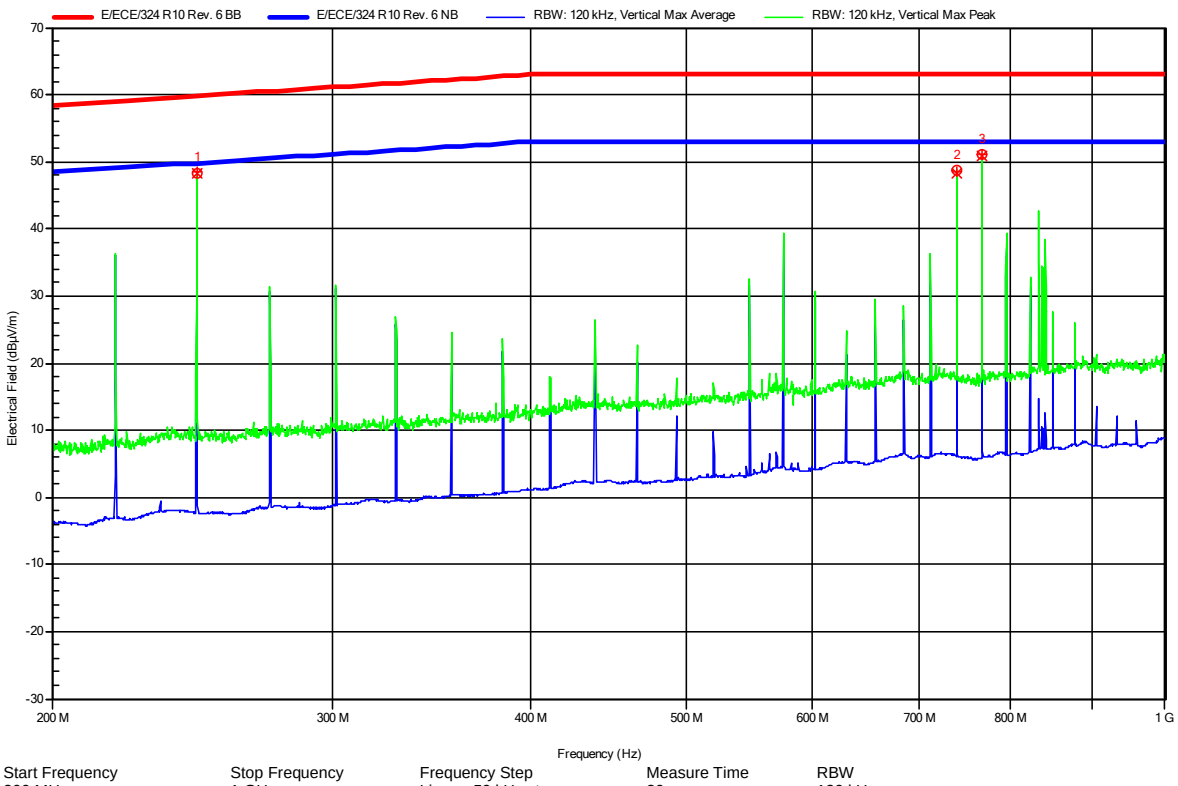


| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 200 MHz | 1 GHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 48.33 | 59.82 | -11.49 | Pass |
| 2 | 739.933 | 48.36 | 63 | -14.64 | Pass |
| 3 | 767.338 | 50.94 | 63 | -12.06 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 48.53 | 49.82 | -1.29 | Pass |
| 2 | 739.933 | 48.53 | 53 | -4.47 | Pass |
| 3 | 767.338 | 51.12 | 53 | -1.88 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Radiated emissions from components/modules - ALSE method according to E/ECE/324/Add.9/Rev.6/Amend.3** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Test Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Test Date & Time: | 2025-08-11 16:34:54 |
| Operating Conditions: | ambient temperature: 24 °Celsius<br>power input: 27 V DC |
| Antenna, Distance & Polarization: | Rohde & Schwarz HL 223, 1 m, Horizontal |
| Operational Mode:<br>DUT Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Note 1: | - |

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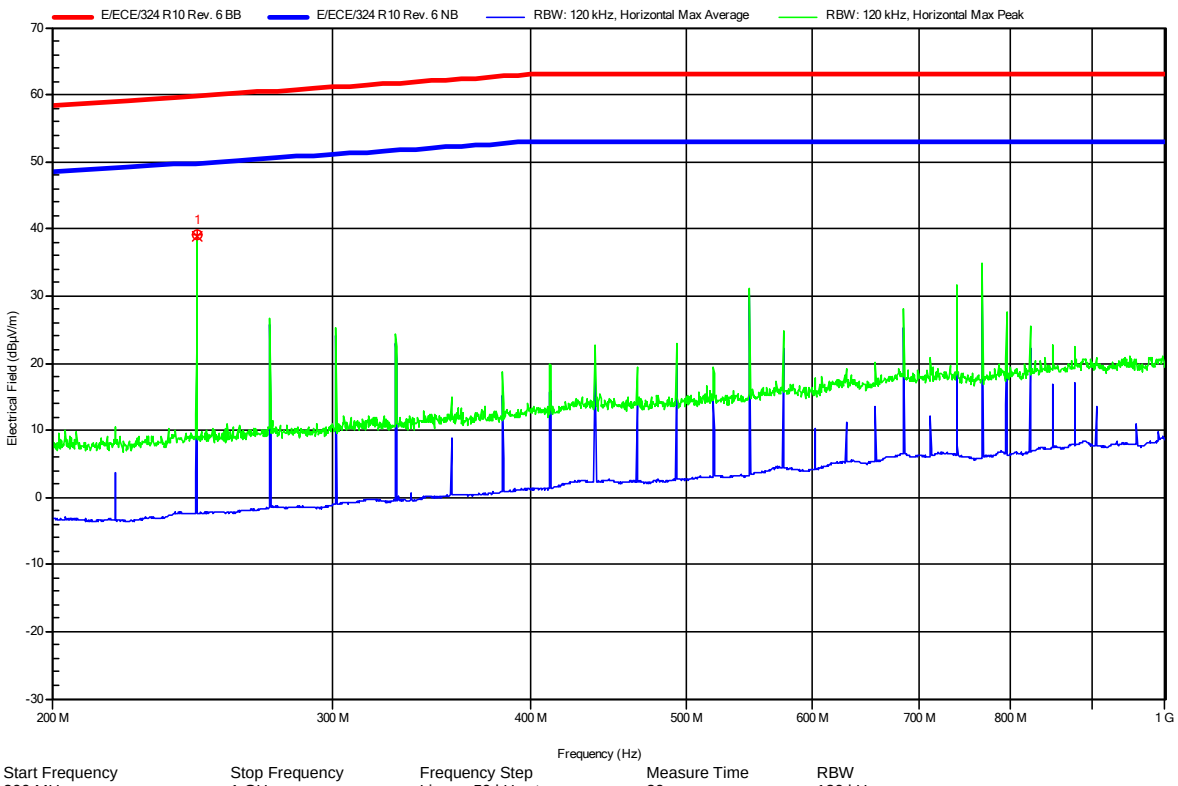



| Start Frequency | Stop Frequency | Frequency Step | Measure Time | RBW |
|---|---|---|---|---|
| 200 MHz | 1 GHz | Linear: 50 kHz steps | 20 ms | 120 kHz |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| Peak Number | Frequency (MHz) | Quasi-Peak (dBµV/m) | Quasi-Peak Limit (dBµV/m) | Quasi-Peak Difference (dB) | Quasi-Peak Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 38.89 | 59.82 | -20.93 | Pass |

| Peak Number | Frequency (MHz) | Average (dBµV/m) | Average Limit (dBµV/m) | Average Difference (dB) | Average Status |
|---|---|---|---|---|---|
| 1 | 246.645 | 39.06 | 49.82 | -10.76 | Pass |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| | | |
|---|---|---|
| 4.1.6 | Bemerkungen<br>*Remarks* | : Die Messungen der breitbandigen und schmalbandigen Störungen werden gleichzeitig gemessen und daher in einem Plot dargestellt / *the measurement results for broadband and narrowband emissions were done simultaneously and hence there are shown in the same diagram* |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.2 Messung gestrahlter schmalbandiger elektromagnetischen Störstrahlungen von EUB gemäß Punkt 6.6 der Regelung
*Measurement of radiated narrowband electromagnetic emissions from ESAs according to item 6.6 of the regulation*

Die Messung wurde durchgeführt
*The measurement was realised*

☒ Ja / *Yes* ☐ Nein / *No*
Begründung / *Reason:*
N/A

| | | |
|---|---|---|
| 4.2.1 | Messverfahren<br>*Measurement procedure* | : Mittelwert / Average |
| 4.2.2 | Messaufbau<br>*Measurement setup* | : Halle gemäß CISPR 25 Ed. 2 / *Chamber acc. to CISPR 25 ED. 2* |
| 4.2.3 | Fotodokumentation des Messaufbaus<br>*Photo documentation of the measurement setup* | : Siehe Punkt 4.1.3 / *see item 4.1.3* |
| 4.2.4 | Betriebszustand des Prüflings während der Messung<br>*Operational state of the test sample during the measurement* | : Siehe Punkt 4.1.4 / *see item 4.1.4* |
| 4.2.5 | Messergebnisse<br>*Measurement results* | : Siehe Punkt 4.1.5 / *see item 4.1.5* |
| 4.2.6 | Bemerkungen<br>*Remarks* | Die Messungen der breitbandigen und schmalbandigen Störungen werden gleichzeitig gemessen und daher in einem Plot dargestellt / *the measurement results for broadband and narrowband emissions were done simultaneously and hence there are shown in the same diagram*. |

Typ / *Type* : Albrecht AE 6390

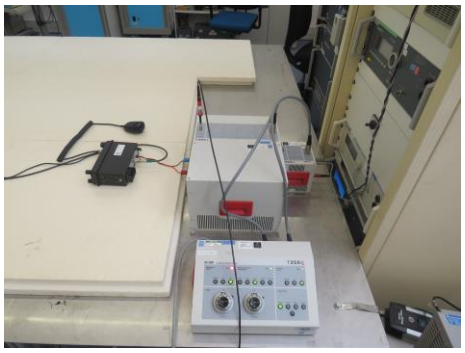
Hersteller / *Manufacturer* : Alan Electronics GmbH

4.3 Messung der Störaussendungen von elektrischen/elektronischen Unterbaugruppen gemäß Punkt 6.7 bzw. Punkt 7.17 der Regelung
*Measurement of emission of transients from electrical/electronic subassemblies according to item 6.7 or item 7.17 of the regulation*

Die Messung wurde durchgeführt
*The measurement was realised*

☒ Ja / *Yes* ☐ Nein / *No*
Begründung / *Reason*:
N/A

4.3.1 Fotodokumentation des Messaufbaus :
*Photo documentation of the measurement setup*


TEST SETUP – SLOW PULSE


TEST SETUP – FAST PULSE

Liste der Messmittel
List of test equipment

| | | | |
|---|---|---|---|
| Automotive Emissions System | TESEQ | AES5501 | EF00716 |
| Voltage drop simulator | EM Test | VDS200 | EF00147 |
| Digital oscilloscope | R&S | RTO1014 | EF00888 |
| High voltage probe | Teledyne LeCroy GmbH | PPE4KV | EF01386 |

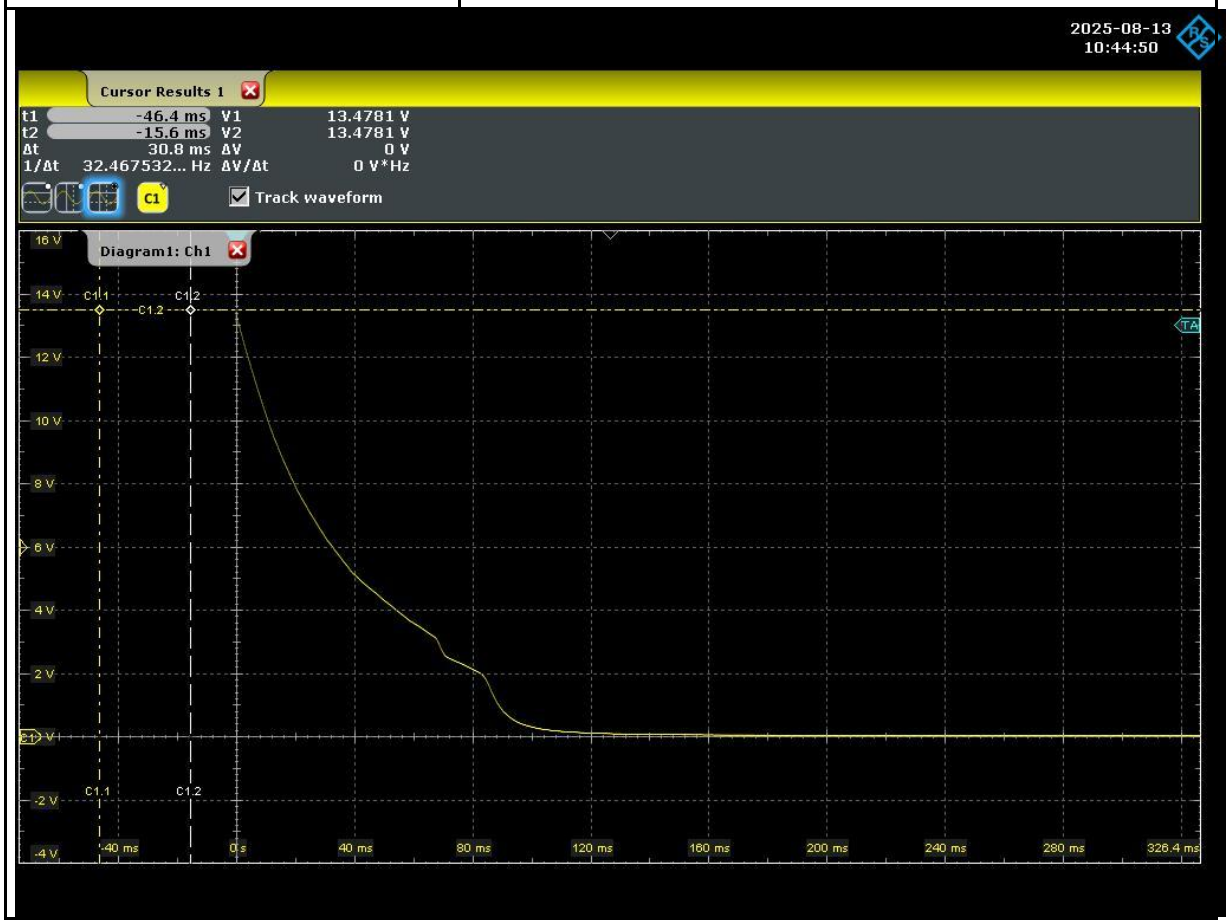
4.3.2 Betriebszustand des Prüflings während der Messung : Siehe Punkt 2.3 / *see item 2.3*
*Operational state of the test sample during the measurement*

4.3.3 Messergebnisse :
*Measurement results*
Siehe nächste Seiten / *see next pages*

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

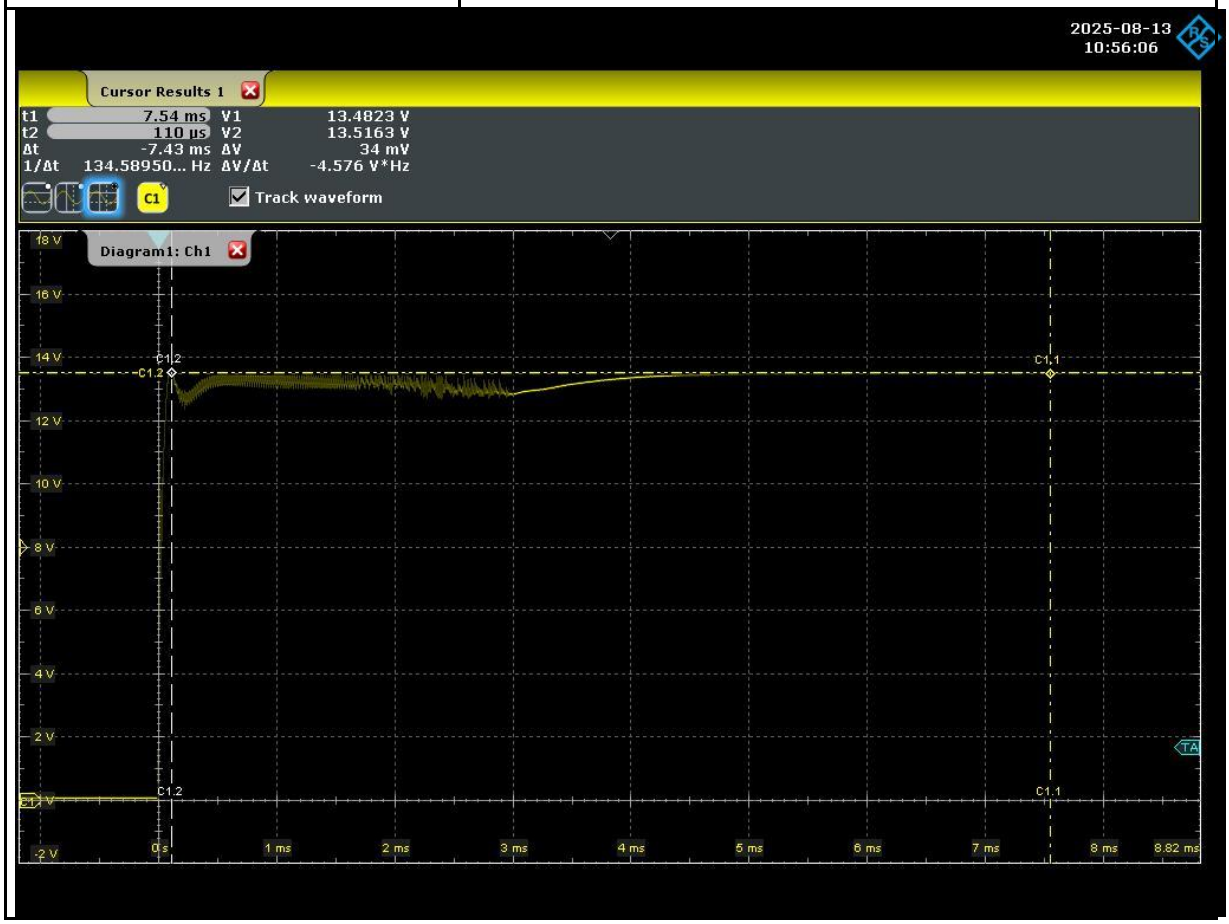
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 10:44 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 13.5 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Slow switch off |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

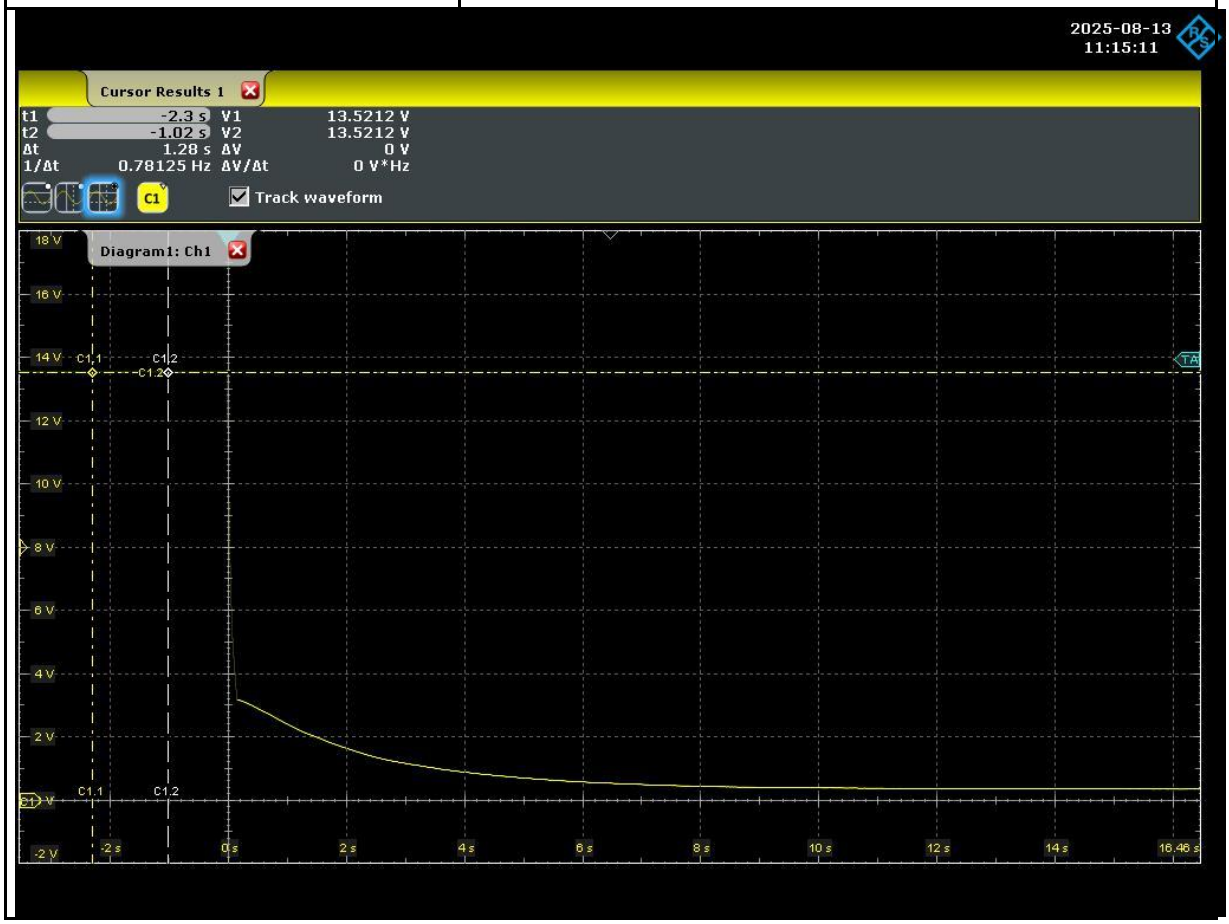
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 10:56 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 13.5 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Slow switch on |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

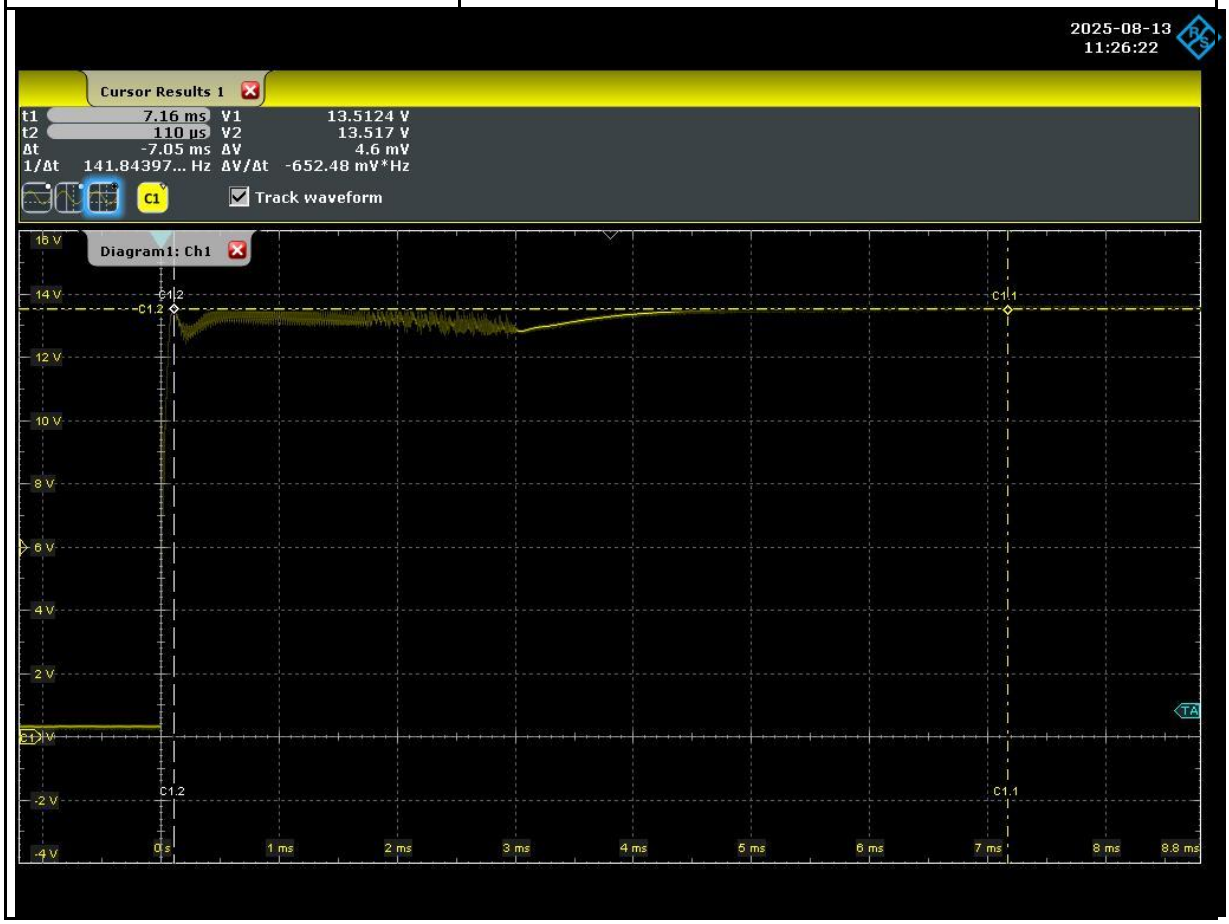
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 11:15 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 13.5 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Fast switch off |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

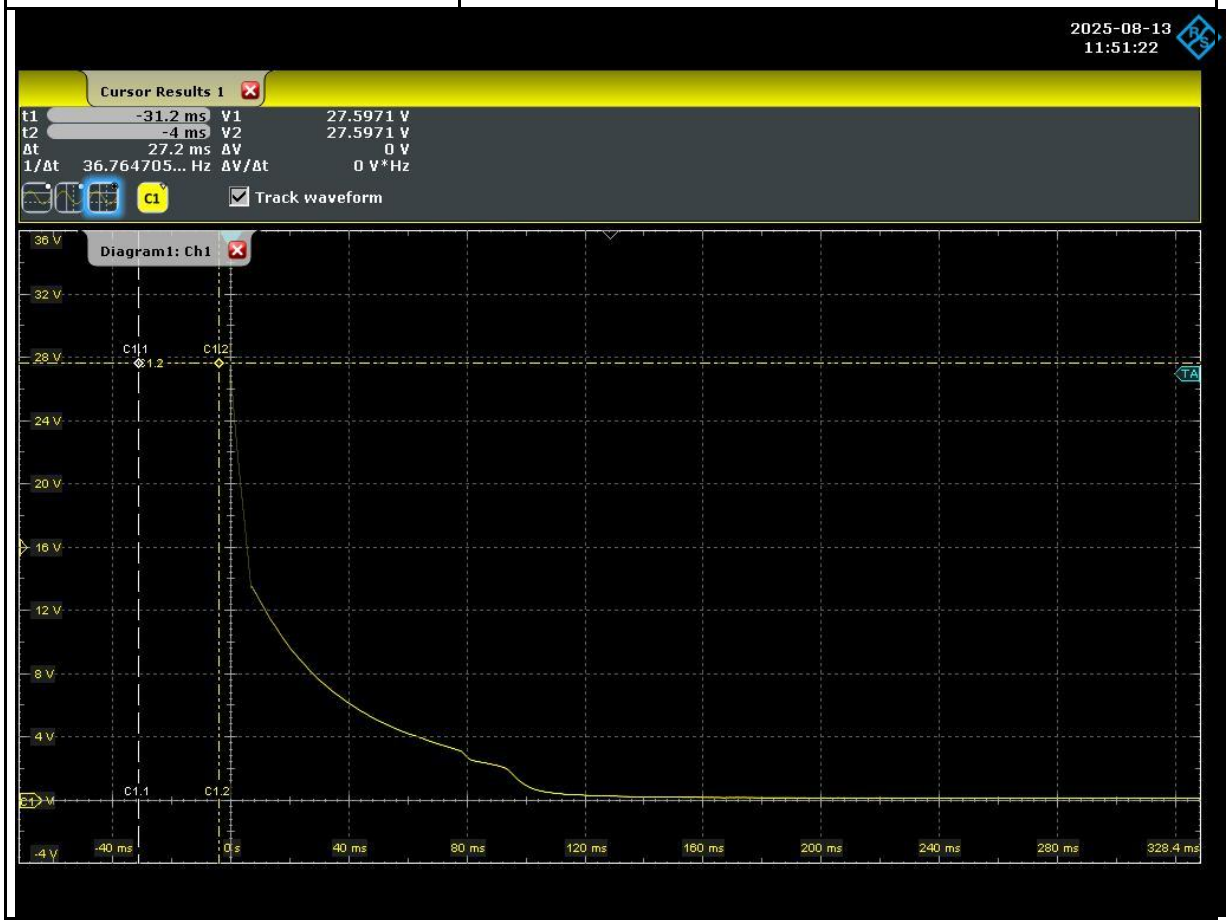
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 11:26 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 13.5 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Fast switch on |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

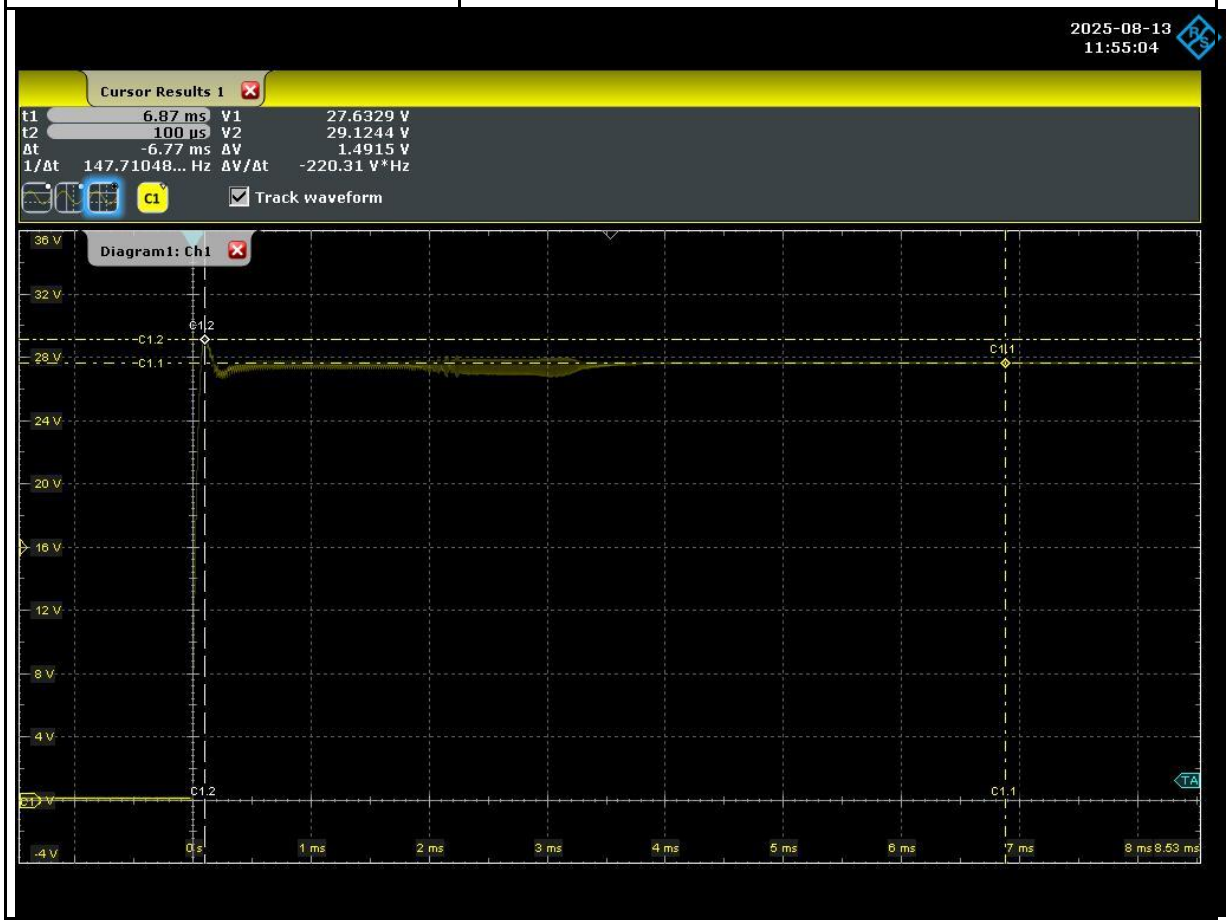
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 11:51 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 27 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Slow switch off |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

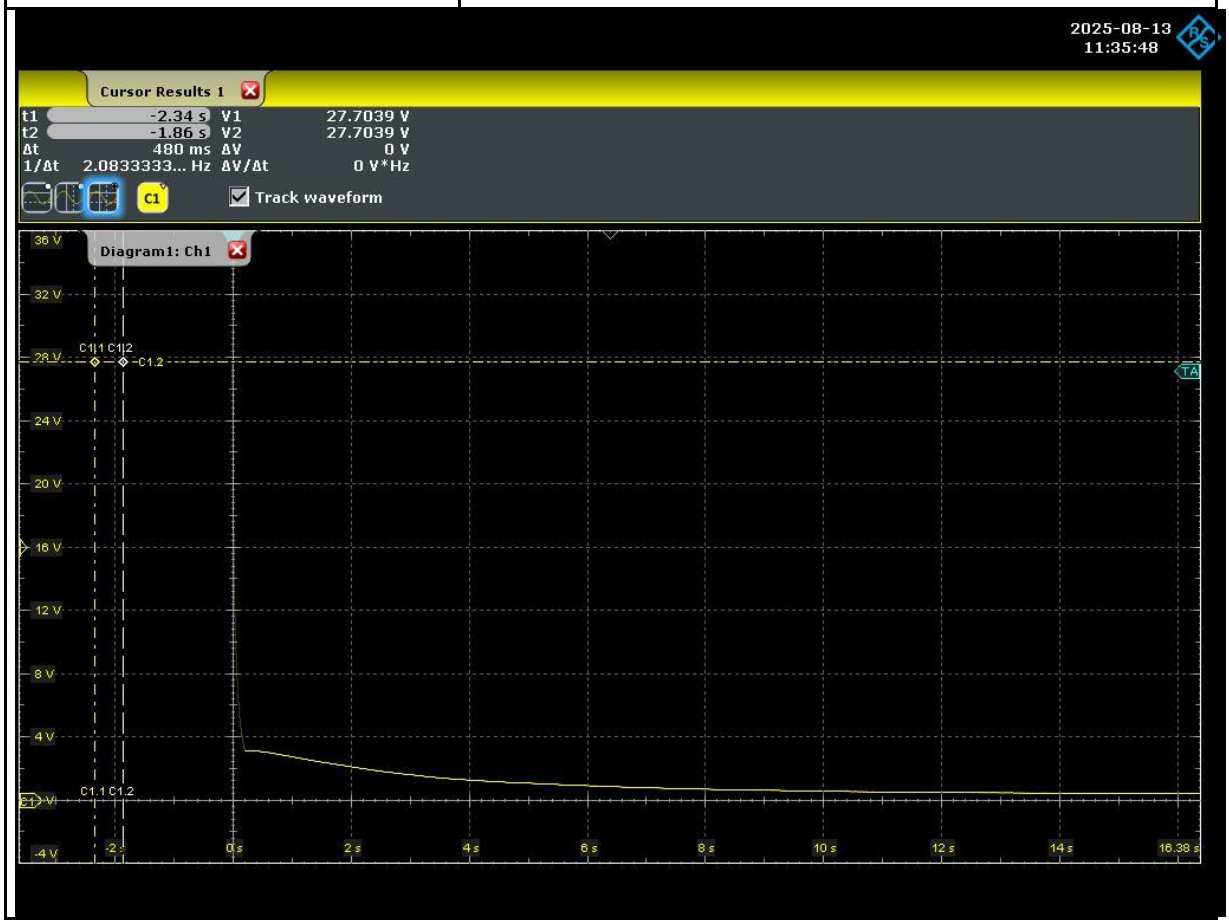
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 11:55 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 27 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Slow switch on |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

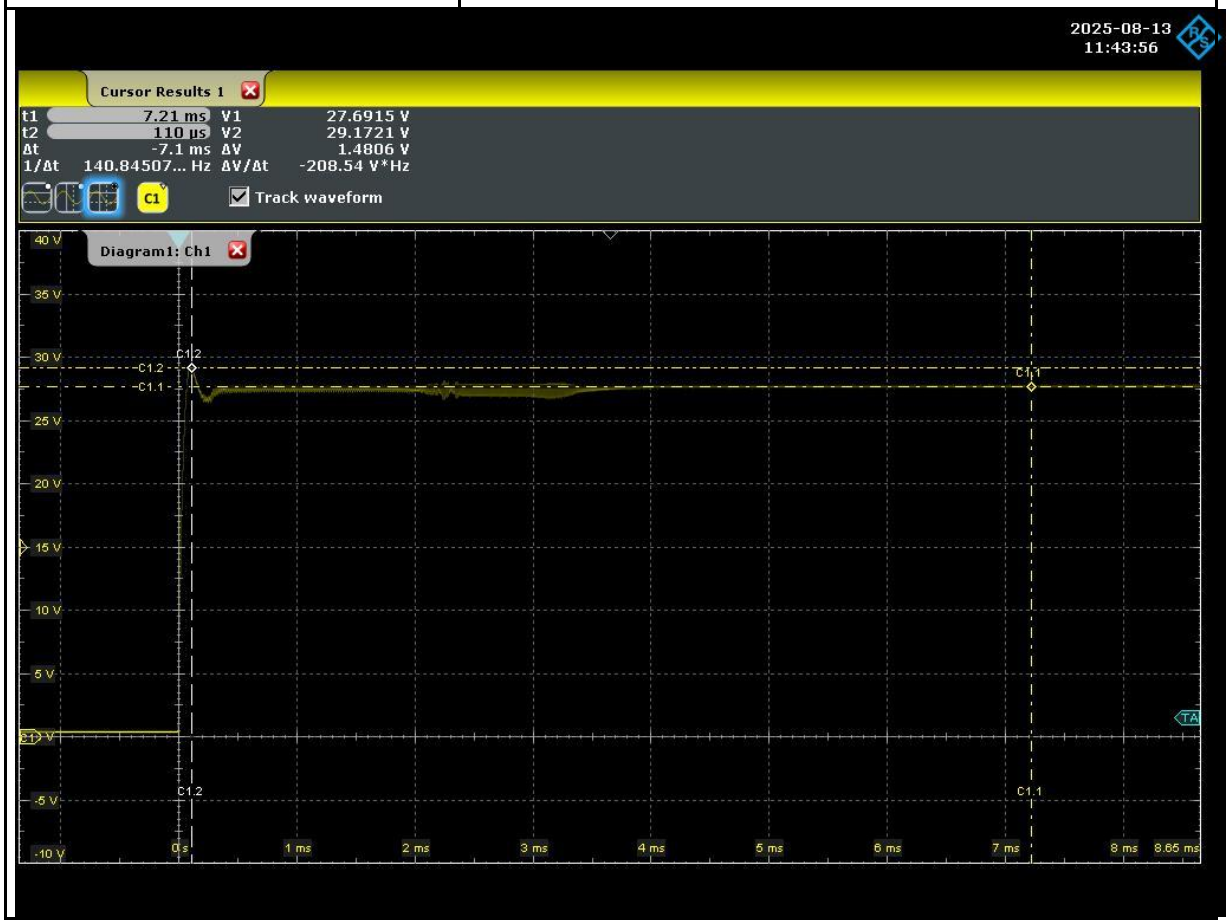
| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 11:35 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 27 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Fast switch off |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Voltage transient emission test** | |
|---|---|
| Project Number: | G0M-2506-3161 |
| Applicant: | Alan Electronics GmbH |
| Model Description: | CB Radio |
| Model: | AE 6390 |
| Sample ID: | 51731 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Drabo |
| Date & Time: | 2025-08-13 / 11:43 |
| Ambient Conditions: | 27 °C, 41 % |
| Power: | 27 V DC |
| Operation Mode Configuration: | Siehe Punkt 2.3 / see item 2.3 |
| Test Case: | Fast switch on |
| Notes: | - |



Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **12 V** | | | | |
|---|---|---|---|---|
| **Grenzwert** ***Limit value*** | **Messwert** ***Measured value*** | | | |
| | **langsames Einschalten** ***slow switch on*** | **langsames Ausschalten** ***slow switch off*** | **schnelles Einschalten** ***fast switch on*** | **schnelles Ausschalten** ***fast switch off*** |
| 75 V | 34 mV | 0 V | 4.6 mV | 0 V |
| - 100 V | 0 V | 0 V | 0 V | 0 V |

| **24 V** | | | | |
|---|---|---|---|---|
| **Grenzwert** ***Limit value*** | **Messwert** ***Measured value*** | | | |
| | **langsames Einschalten** ***slow switch on*** | **langsames Ausschalten** ***slow switch off*** | **schnelles Einschalten** ***fast switch on*** | **schnelles Ausschalten** ***fast switch off*** |
| 150 V | 1.49 V | 0 V | 1.48 V | 0 V |
| - 450 V | 0 V | 0 V | 0 V | 0 V |

4.3.4 Bemerkungen *Remarks* : N/A

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.4 Prüfung der Störfestigkeit von elektrischen/elektronischen Unterbaugruppen gegenüber eingestrahlten elektromagnetischen Feldern gemäß Punkt 6.8 bzw. Punkt 7.18 der Regelung
*Testing for immunity of electrical/electronic subassemblies to electromagnetic radiation according to item 6.8 or item 7.18 of the regulation*

| | | |
|---|---|---|
| Die Prüfung wurde durchgeführt<br>*The test was realised* | ☐ Ja / *Yes* | ☒ Nein / *No*<br>Begründung / *Reason*:<br>ESAs with no immunity related functions need not be tested for immunity to radiated disturbance according item 6.10 of the regulation |

| | | | |
|---|---|---|---|
| 4.4.1 | Prüfverfahren<br>*Test procedure* | : | Verfahren entsprechend Anhangs 9 Punkt 1.2.1 a (ISO 11452-2) und c (ISO 11452-4) der Richtlinie / *procedure in accordance with annex 9 item 1.2.1 a (ISO 11452-2) and c (ISO 11452-4) of the directive* |
| 4.4.2 | Fotodokumentation des Prüfaufbaus<br>*Photo documentation of the test setup* | : | N/A |
| | Liste der Messmittel<br>List of test equipment | | N/A |
| 4.4.3 | Betriebszustand des Prüflings während der Prüfung<br>*Operational state of the test sample during the test* | : | N/A |
| 4.4.4 | Prüfergebnisse<br>*Test results* | : | N/A |
| 4.4.5 | Bemerkungen<br>*Remarks* | : | N/A |

Typ / *Type* : Albrecht AE 6390

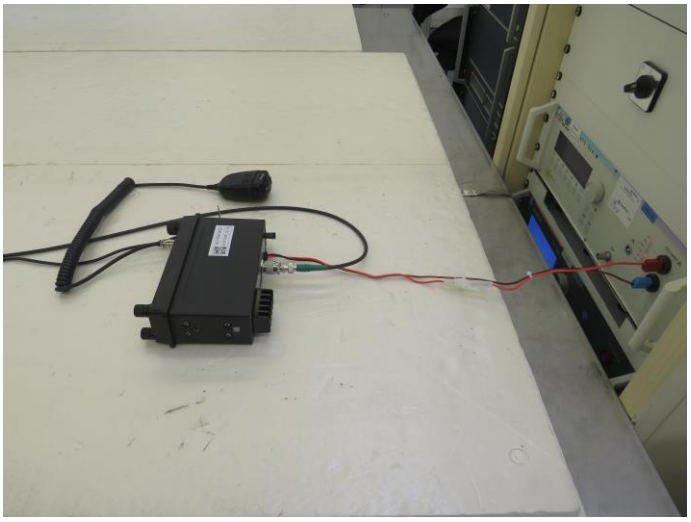
Hersteller / *Manufacturer* : Alan Electronics GmbH

4.5 Prüfung der Störfestigkeit von elektrischen/elektronischen Unterbaugruppen gemäß Punkt 6.9 bzw. Punkt 7.19 der Regelung
*Testing for immunity of electrical/electronic subassemblies according to item 6.9 or item 7.19 of the regulation*

Die Prüfung wurde durchgeführt
*The test was realised*

☒ *Ja / Yes* ☐ *Nein / No*
*Begründung / Reason:*
N/A

4.5.1 Fotodokumentation des Messaufbaus :
*Photo documentation of the measurement setup*



TEST SETUP

Liste der Messmittel
List of test equipment

| Software: iso.control | | | V6.2.0 |
|---|---|---|---|
| Ultra Compact Simulator | EM Test | Ultra Compact Simulator | EM Test |
| Voltage drop simulator | EM Test | Voltage drop simulator | EM Test |

4.5.2 Betriebszustand des Prüflings während der Prüfung : Siehe Punkt 2.3 / *see item 2.3*
*Operational state of the test sample during the test*

4.5.3 Prüfergebnisse :
*Test results*

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

| **Spannung** ***Voltage*** | | **Puls** ***Pulse*** | | **Einzuhaltender Funktionsstatus** ***Functional status to be maintained*** | | | | **Erreichter Funktionsstatus** ***Actual functional status*** | **Bemerkung (Prüflingsreaktion)** ***Remark (reaction of the test sample)*** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | ☐ | ☐ | ☒ | | | |
| 12 V | | 1 | | C | C | D | | C | R3 |
| | | 2a | | B | B | D | | A | R1 |
| | | 2b | | C | C | D | | C | R3 |
| | | 3a | | A | A | D | | A | R1 |
| | | 3b | | A | A | D | | A | R1 |
| | | 4* | | B | C | D | | B | R2 |

*entfällt bei Prüfung nach Punkt 7.19
*does not apply to test according to item 7.19

| **Spannung** ***Voltage*** | | **Puls** ***Pulse*** | | **Einzuhaltender Funktionsstatus** ***Functional status to be maintained*** | | | | **Erreichter Funktionsstatus** ***Actual functional status*** | **Bemerkung (Prüflingsreaktion)** ***Remark (reaction of the test sample)*** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | ☐ | ☐ | ☒ | | | |
| 24 V | | 1 | | C | C | D | | C | R3 |
| | | 2a | | B | B | D | | A | R1 |
| | | 2b | | C | C | D | | C | R3 |
| | | 3a | | A | A | D | | A | R1 |
| | | 3b | | A | A | D | | A | R1 |
| | | 4* | | B | C | D | | B | R2 |

*entfällt bei Prüfung nach Punkt 7.19
*does not apply to test according to item 7.19

Prüflingsreaktionen / *EUT responses*:

**R1:** The function performs as designed during and after the test.

**R2:** The function does not fully perform as designed during the test, but returns automatically to normal operation after the test.

**R3:** The function does not perform as designed during the test, but returns automatically to normal operation after the test.

4.5.4 Bemerkungen *Remarks* : N/A

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.6 Messung der Oberwellen auf AC-Versorgungsleitungen von elektrischen/elektronischen Unterbaugruppen gemäß Punkt 7.11 der Regelung
*Measurement of emissions of harmonics on AC power lines from electrical/electronic subassemblies according to item 7.11 of the regulation*

| | | |
|---|---|---|
| Die Messung wurde durchgeführt<br>*The measurement was realised* | ☐ Ja / *Yes* | ☒ Nein / *No*<br>Begründung / *Reason*:<br>Keine AC Versorgungsleitungen vorhanden / *No AC power supply lines available at ESA.* |

| | | |
|---|---|---|
| 4.6.1 | Messverfahren<br>*Measurement procedure* | : N/A |
| 4.6.2 | Messaufbau<br>*Measurement setup* | : N/A |
| 4.6.3 | Fotodokumentation des Messaufbaus<br>*Photo documentation of the measurement setup* | : N/A |
| 4.6.4 | Betriebszustand des Prüflings während der Messung<br>*Operational state of the test sample during the measurement* | : N/A |
| 4.6.5 | Messergebnisse<br>*Measurement results* | N/A |
| 4.6.6 | Bemerkungen<br>*Remarks* | : N/A |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.7 Messungen von Spannungsänderungen, Spannungsschwankungen und Flicker auf AC-Versorgungsleitungen von elektrischen/elektronischen Unterbaugruppen gemäß Punkt 7.12 der Regelung
*Measurement of emission of voltages changes, voltage fluctuation and flicker on AC power lines from ESAs according to item 7.12 of the regulation*

| | | |
|---|---|---|
| Die Messung wurde durchgeführt<br>*The measurement was realised* | ☐ Ja / *Yes* | ☒ Nein / *No*<br>Begründung / *Reason:*<br>Keine AC Versorgungsleitungen vorhanden / *No AC power supply lines available at ESA.* |

4.7.1 Messaufbau : N/A
*Measurement setup*

4.7.2 Fotodokumentation des Messaufbaus : N/A
*Photo documentation of the measurement setup*

4.7.3 Betriebszustand des Prüflings während der Messung : N/A
*Operational state of the test sample during the measurement*

4.7.4 Messergebnisse : N/A
*Measurement results*

4.7.5 Bemerkungen : N/A
*Remarks*

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.8 Messungen von hochfrequenten Störungen auf AC- oder DC-Versorgungsleitungen von elektrischen/elektronischen Unterbaugruppen gemäß Punkt 7.13 der Regelung
*Measurement of emission of radiofrequency conducted disturbances on AC or DC power lines from ESAs according to item 7.13 of the regulation*

| | | |
|---|---|---|
| Die Messung wurde durchgeführt<br>*The measurement was realised* | ☐ Ja / *Yes* | ☒ Nein / *No*<br>Begründung / *Reason:*<br>Nicht anwendbar, da der Prüfling nicht in Verbindung mit REESS steht. / *Test not applicable because ESA is not part of REESS.* |

| | | |
|---|---|---|
| 4.8.1 | Messverfahren<br>*Measurement procedure* | : N/A |
| 4.8.2 | Messaufbau<br>*Measurement setup* | : N/A |
| 4.8.3 | Fotodokumentation des Messaufbaus<br>*Photo documentation of the measurement setup* | : N/A |
| 4.8.4 | Betriebszustand des Prüflings während der Messung<br>*Operational state of the test sample during the measurement* | : N/A |
| 4.8.5 | Messergebnisse<br>*Measurement results* | : N/A |
| 4.8.6 | Bemerkungen<br>*Remarks* | : N/A |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.9 Messungen von hochfrequenten Störungen auf Netzwerk- oder Kommunikationsleitungen von elektrischen/elektronischen Unterbaugruppen gemäß Punkt 7.14 der Regelung
*Measurement of emission of radiofrequency conducted disturbances on network or telecommunication access from ESAs according to item 7.14 of the regulation*

Die Messung wurde durchgeführt
*The measurement was realised*

☐ Ja / *Yes*

☒ Nein / *No*
Begründung / *Reason:*
Nicht anwendbar nach Punkt 7.20.1 der Richtlinie. / *Not applicable acc. to item 7.20.1 of directive*

| | | |
|---|---|---|
| 4.9.1 | Messverfahren<br>*Measurement procedure* | : N/A |
| 4.9.2 | Messaufbau<br>*Measurement setup* | : |
| 4.9.3 | Fotodokumentation des Messaufbaus<br>*Photo documentation of the measurement setup* | : N/A |
| 4.9.4 | Betriebszustand des Prüflings während der Messung<br>*Operational state of the test sample during the measurement* | : N/A |
| 4.9.5 | Messergebnisse<br>*Measurement results* | : N/A |
| 4.9.6 | Bemerkungen<br>*Remarks* | : N/A |

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.10 Prüfung der Störfestigkeit von elektrischen/elektronischen Unterbaugruppen gegenüber schnellen Transienten/Burst auf AC- und DC-Versorgungsleitungen gemäß Punkt 7.15 der Regelung
*Measurement of immunity of ESAs to electrical transient/burst disturbances conducted along AC and DC power lines according to item 7.15 of the regulation*

| | | |
|---|---|---|
| Die Prüfung wurde durchgeführt<br>*The test was realised* | ☐ Ja / *Yes* | ☒ Nein / *No*<br>Begründung / *Reason:*<br>Nicht anwendbar, da der Prüfling nicht in Verbindung mit REESS steht. / *Test not applicable because ESA is not part of REESS.* |

4.10.1 Prüfaufbau
*Test setup* : N/A

4.10.2 Fotodokumentation des Prüfaufbaus
*Photo documentation of the test setup* : N/A

4.10.4 Betriebszustand des Prüflings während der Prüfung
*Operational state of the test sample during the test* : N/A

4.10.4 Prüfergebnis
*Test result* : N/A

4.10.5 Bemerkungen
*Remarks* : N/A

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

4.11 Prüfung der Störfestigkeit von elektrischen/elektronischen Unterbaugruppen gegenüber Surge-Impulsen auf AC- und DC-Versorgungsleitungen gemäß Punkt 7.16 der Regelung
*Measurement of immunity of ESAs to surge conducted along AC and DC power lines according to item 7.16 of the regulation*

Die Prüfung wurde durchgeführt
*The test was realised*

☐ Ja / *Yes*

☒ Nein / *No*
Begründung / *Reason:*
Nicht anwendbar, da der Prüfling nicht in Verbindung mit REESS steht. / *Test not applicable because ESA is not part of REESS.*

4.11.1 Prüfaufbau
*Measurement setup* : N/A

4.11.2 Fotodokumentation des Messaufbaus
*Photo documentation of the measurement setup* : N/A

4.11.3 Betriebszustand des Prüflings während der Prüfung
*Operational state of the test sample during the test* : N/A

4.11.4 Prüfergebnis
*Measurement result* : N/A

4.11.5 Bemerkungen
*Remarks* : N/A.

Typ / *Type* : Albrecht AE 6390

Hersteller / *Manufacturer* : Alan Electronics GmbH

## 5. Schlussbescheinigung
***Statement of conformity:***

Die unter Nr. 1.4 angegebene Beschreibungsmappe und der darin beschriebene Typ entsprechen der auf dem Deckblatt genannten Prüfspezifikation. Der ungünstigste Fall wurde gemäß Dokument WI_Lab_7.2_01_52 bestimmt.
Dieser Prüfbericht entspricht dem Revisionsstand Nr. 06 der Vorgaben des Kraftfahrt-Bundesamtes für die Erstellung von Prüfberichten für dieses Genehmigungsobjekt.
Dieser Prüfbericht umfasst die Seiten 1 bis 52. Der Prüfbericht darf nur vom Auftraggeber und nur in vollem Wortlaut vervielfältigt und weitergegeben werden. Eine auszugsweise Vervielfältigung und Veröffentlichung des Prüfberichtes ist nur nach schriftlicher Genehmigung des Prüflaboratoriums zulässig.
*The information folder specified under No. 1.4 and the type described therein correspond to the test specification mentioned above. The worst-case was determined in accordance with document WI_Lab_7.2_01_52.*
*This test report corresponds to revision 06 of the requirements issued by the Kraftfahrt-Bundesamt for this approval object.*
*This test report comprises pages 1 to 52. The test report may be reproduced and published in full and by the client only. It can be reproduced partially with the written permission of the test laboratory only.*

**PRÜFLABORATORIUM / *TEST LABORATORY***
**EUROFINS PRODUCT SERVICE GMBH**
als Technischer Dienst benannt durch das Kraftfahrt-Bundesamt
*nominated as a Technical Service by the Kraftfahrt-Bundesamt*
*nominated as a Technical Service by the National Standards Authority of Ireland*

Benennungsnummer: KBA-P 00059-12
*Nomination number:* *64*

Ort : Reichenwalde
*Place*
Datum : 2025-10-17
*Date*

Unterschrift / Signature

Head of the technical service
Dipl.-Ing. (FH) Stephan Liebich, M.A.

Anlagen : Beschreibungsbogen, Technische Unterlagen /
*Attachments* *Information document, technical documents*

Datum / *date*: **2025-10-17**

# Informationsdokument Nr. / *Information Document No*:

# G0M-2506-3161-BB01-V01

hinsichtlich der Typgenehmigung für eine elektrische/elektronische Unterbaugruppe
in Bezug auf die elektromagnetische Verträglichkeit (ECE - R 10) /
*for type approval of an electric/electronic sub-assembly*
*with respect to electromagnetic compatibility (ECE - R 10)*

| | | |
|---|---|---|
| 1 | Marke / *Make* : | Albrecht / MAN |
| 2 | Typ / *Type :* | Albrecht AE 6390 |
| | Varianten des Typs / *variants of the type* : | MAN 2008 |
| | Handelsbezeichnung(en) / *general commercial description(s)* : | Albrecht AE 6390 / MAN 2008 |
| 3 | Merkmal zur Typidentifizierung / *Means of identification of type* : | Typbezeichnung / Type designation |
| 3.1 | Stelle, an der die Kennzeichnung angebracht ist / *Location of that marking* : | Auf der Gehäuseoberseite / On the top side of the housing |
| 4 | Name und Anschrift des Herstellers / *Name and address of manufacturer* : | Alan Electronics GmbH<br>Daimlerstraße 1g<br>D-63303 Dreieich, Germany |
| | ggf. Name und Anschrift des Beauftragten der Herstellers / *Name and address of authorised representative, if any* : | N/A |
| 5 | Stelle, an der das Genehmigungszeichen angebracht wird, und Art der Anbringung / *Location and method of affixing of the EC approval mark* : | Klebeschild auf der Gehäuseoberseite / Adhesive label on the top side of the housing |
| 6 | Name(n) und Anschrift(en) der/s Montagebetriebe(s) / *Name(s) and address(es) of assembly plant(s)* : | Qixiang Electron Science & Technology Co., Ltd.<br>Qixiang Building, Tangxi Industrial Zone,<br>Luojiang District, Quanzhou,<br>362011 Fujian, China |

| | | |
|---|---|---|
| 7 | Diese EUB wird genehmigt als / *This ESA shall be approved as a :* | Bauteil / component |
| 8 | Beschränkungen hinsichtlich der Verwendung und Einbaubedingungen / Any restrictions of use and conditions for fitting : | N/A |
| 9 | Nennspannung des elektrischen Systems / *Electrical system rated voltage* : | 12 / 24 **V** neg **Masse / *ground*** |

**Verzeichnis der zur Beschreibung der EUB beigefügten Unterlagen / *Table of documents for description of ESA***

| **Nr. / *No.*** | **Inhalt / *Content*** | **Dokumenten- / Zeichnungsnr. *Document / Drwaing No.*** | **Ausgabe-datum / *Date of Issue*** | **Letztes Änderungs-datum / *Last Change Date*** | **Seiten-anzahl / *Number of Pages*** |
|---|---|---|---|---|---|
| 1 | Funktionsbeschreibung / *Technical Description of the product* | Albrecht AE 6390<br>MAN 2008 | 2025-03-21<br>2025-06-27 | N/A<br>N/A | 2<br>1 |
| 2 | Blockschaltbild / *Block Diagram* | MAN2008 | 2025-06-10 | N/A | 1 |
| 3 | Stückliste / *Bill of Materials* | PARTS LIST | 2025-06-27 | N/A | 11 |
| 4 | Stromlaufpläne / *Product Schematic* | CIRCUIT DESCRIPTION<br>SCHEMATIC DIAGRAM | 2025-06-27<br>2025-06-10 | N/A<br>N/A | 3<br>2 |
| 5 | Gesamtzeichnung oder Foto des Gerätes / *Photographs of the Product* | Dimensioned drawings | 2025-10-17 | N/A | 1 |
| 6 | Zeichnung o. Foto des Typschildes / *Product label incl. location* | Albrecht AE 6390 CB radio<br>MAN 2008 CB radio | 2025-07-08<br>2025-10-17 | N/A<br>N/A | 1<br>1 |
| 7 | Leiterplattenlayout / *PCB (bottom & top layer)* | PC board views | 2025-06-10 | N/A | 4 |
| 8 | Variantenmatrix / *Declaration of Model differences (if applicable)* | Albrecht AE6390 / MAN 2008 variant matrix | 2025-08-21 | N/A | 1 |

albrecht

CB-FUNK

# ALBRECHT
# AE 6390

Das **Albrecht AE 6390** CB-Funkgerät hat ein großes **2,4“ Display** und einen kräftigen **Frontlautsprecher**.

Zusätzlich ermöglicht die **VOX Freisprechfunktion** die Kommunikation im Fahrzeug, ohne das Mikrofon in die Hand nehmen zu müssen. Das Funkgerät erkennt, wenn der Fahrer spricht und startet **automatisch** die Funkübertragung. Die Empfindlichkeit und Verzögerung der VOX Freisprechfunktion kann in mehreren **Stufen** eingestellt werden. Somit kann das **CB-Funkgerät** bedenkenlos **gemäß der neuesten Straßenverkehrsordnung** § 23 (1a) StVO in Fahrzeugen verwendet werden.

## KEY FEATURES

**Großes 2,4“ Display**
gute Lesbarkeit aus verschiedenen Blickwinkeln und dimmbare Beleuchtung

**VOX-Freisprechfunktion**
erlaubt konform der § 23 (1a) StVO die Benutzung in Fahrzeugen

**Kräftiger 2-Watt Frontlautsprecher**
sorgt für klaren, lauten Sound ohne zusätzlichen externen Lautsprecher

**Autosquelch (ASQ)**
erspart lästige Nachjustieren der Rauschsperre

CB-FUNK



# ALBRECHT
# AE 6390

## EIGENSCHAFTEN

- VOX Freisprechfunktion
- Großes 2,4“ Display mit gutem Blickwinkel aus allen Richtungen
- Automatische Rauschsperre (ASQ)
- 12/24 Volt Betrieb
- Kräftiger 2 Watt Frontlautsprecher
- DIN-Größe zum Einbau im Fahrzeug
- S-Meter Anzeige
- Kanal 9/19 Direkttaste
- Kanalsuchlauf (SCAN)
- RF Gain
- 3 Kanal Schnellwahltasten
- Tastentöne
- Zusätzliche UP/DOWN Tasten am Mikrofon
- Displaybeleuchtung dimmbar
- Abmessungen: 188 x 57 x 131 mm
- Gewicht: 1,9 kg (inkl. Standardzubehör)
- Buchse für externen Lautsprecher: 3,5 mm Klinke

## LIEFERUMFANG

CB-Funkgerät, Mikrofon mit Up/Down Tasten, Mikrofonhalterung, DIN Einbau-rahmen mit 2 Entriegelungsschlüsseln, Montagebügel, DC Stromkabel, Anleitung

**Art.-Nr.: 12639**

**ALAN ELECTRONICS GMBH**

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Nikolaus-Otto-Str. 1 · D-22946 Trittau
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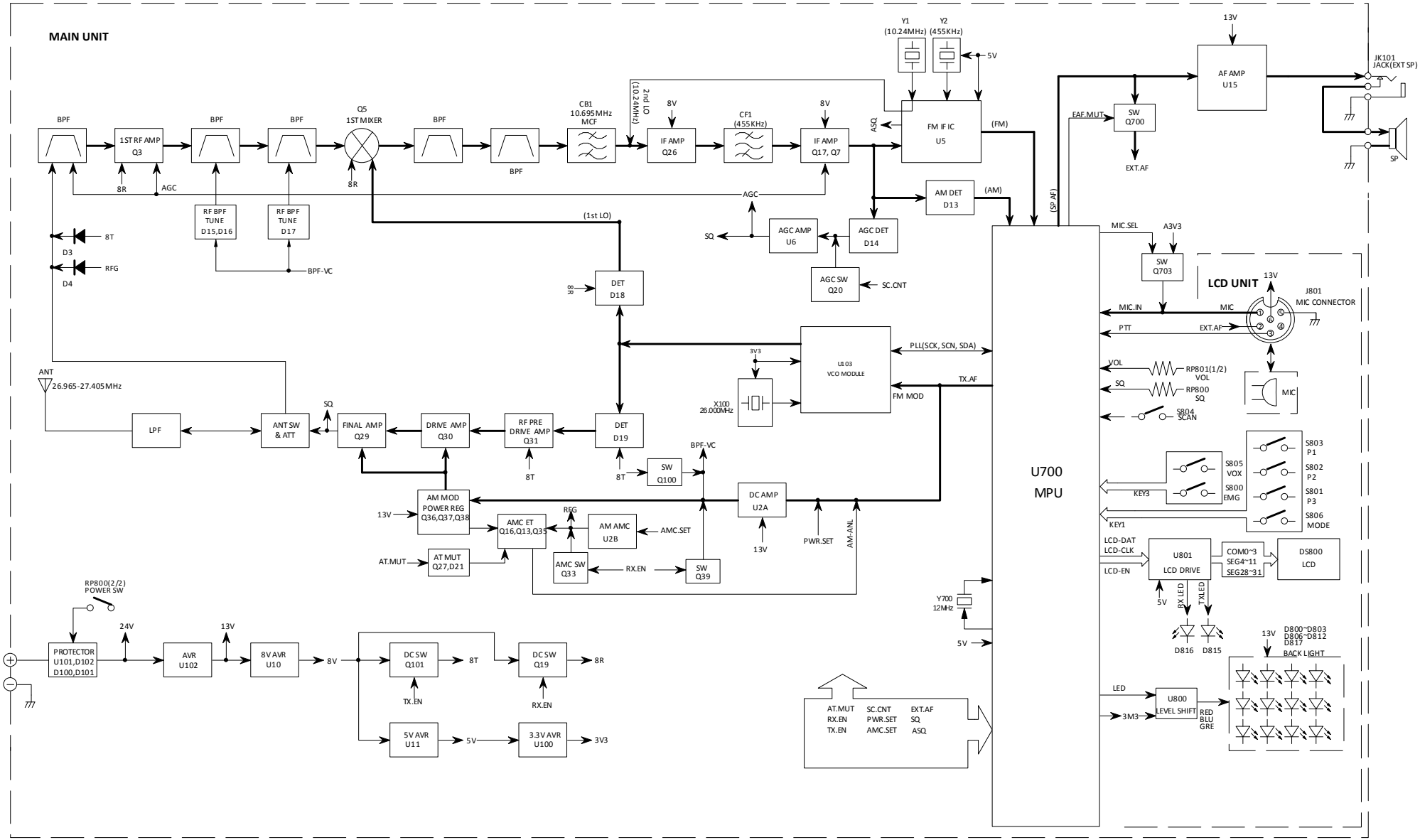
kontakt@albrecht-midland.de · www.albrecht-midland.de

E24*10R06/03*7295*00

# SPECIFICATIONS

| | | |
|---|---|---|
| **General** | | |
| Frequency coverage | | 26.965 ~ 27.405MHz |
| Operating mode | | F3E (FM), A3E (AM) |
| Number of channels | | 40 |
| Antenna Impedance | | 50 Ω |
| Working temperature | | –10℃~+55℃ |
| Frequency Tolerance | | Better than 0.002% |
| Input Voltage | | 13.2V & 26.4V DC |
| Grounding Method | | Negative ground |
| Current Drain | Transmitter | 13.2V : 2.0A Max. |
| | | 26.4V : 1.5A Max. |
| | Receiver | About 300mA(max.) 0.8A (VOL Max.) |
| Dimensions (W x H x D)<br>With projections | | 151 x 58 x 188 mm |
| Weight | | Approx.0.75kg |
| **RECEIVER** | | |
| Receiving System | | Dual conversion superheterodyne |
| IF Frequencies | | Double Conversion 1st 10.695MHz/ 2nd 455KHz |
| Selectivity | | 1.0μV for 10dB(S+N)/N in AM Mode |
| | | 1.0μV for 20dB SINAD in FM Mode |
| Audio Output Power | | 3 watts max @8 Ω |
| Audio Distortion | | Less than 5% @ 1KHz |
| Image Rejection | | 70dB |
| Adjacent Channel Rejection | | 60dB |
| Frequency Response | | 300Hz to 3000Hz |
| Squelch | | Less than 1.0μV |
| **TRANSMITTER** | | |
| Output Power | | FM/AM: 4.0 W |
| Modulated signal distortion | | Inferior to 5% |
| Frequency Response | | 300Hz to 3000Hz |
| Output Impedance | | 50ohms, Unbalanced |
| Transmission interference | | inferior to 4 nW (- 54 dBm) |

# BLOCK DIAGRAM



# PARTS LIST

## MAINBOARD UNIT

| Designators | Comment | Footprint |
|---|---|---|
| C1 | 103P | S0402 |
| C2 | 103P | S0402 |
| C5 | 103P | S0402 |
| C6 | 103P | S0402 |
| C9 | 103P | S0402 |
| C11 | 103P | S0402 |
| C12 | 103P | S0402 |
| C13 | NC | S0402 |
| C14 | 103P | S0402 |
| C15 | 103P | S0402 |
| C18 | 475PC | S0603 |
| C22 | 102PJ | S0402 |
| C23 | 102PJ | S0402 |
| C24 | 102PJ | S0402 |
| C25 | 56PJ | S0603 |
| C26 | 39PG | S0402 |
| C27 | 181PJ | S0402 |
| C28 | 475PC | S0603 |
| C31 | 102PJ | S0402 |
| C32 | 221PJ | S0402 |
| C37 | 12PG | S0402 |
| C38 | 12PG | S0402 |
| C39 | 12PG | S0402 |
| C40 | 13PJ | S0402 |
| C41 | 475PC | S0603 |
| C42 | 103P | S0402 |
| C43 | 104PC | S0402 |
| C44 | 475PA | S0402A |
| C45 | 56PG | S0402 |
| C46 | 56PG | S0402 |
| C47 | 39PG | S0402 |
| C51 | 7PB | S0402 |
| C52 | 7PB | S0402 |
| C55 | 101PG | S0402 |
| C56 | 101PG | S0402 |
| C57 | 101PG | S0402 |
| C58 | 101PG | S0402 |
| C59 | 101PG | S0402 |
| C60 | 101PG | S0402 |
| C61 | 101PJ | S0402 |
| C64 | 15PG | S0402 |
| C65 | 15PG | S0402 |
| C67 | 47PG | S0402 |
| C68 | 103P | S0402 |
| C71 | 103P | S0402 |
| C72 | 103P | S0402 |
| C73 | 103P | S0402 |
| C74 | 103P | S0402 |
| C76 | 104PC | S0402 |
| C82 | 181PJ | S0402 |
| C83 | 102PJ | S0402 |
| C84 | 224PC | S0402 |
| C85 | 224PC | S0402 |
| C88 | 101PJ | S0402 |
| C89 | 151PJ | S0402 |
| C90 | 56PG | S0402 |

| Designators | Comment | Footprint |
|---|---|---|
| C91 | 104PC | S0402 |
| C92 | 103P | S0402 |
| C93 | 105PC | S0402 |
| C95 | 105PC | S0402 |
| C96 | 104PC | S0402 |
| C97 | 104PC | S0402 |
| C100 | 561PJ | S0402 |
| C101 | 391PJ | S0402 |
| C102 | 102PJ | S0402 |
| C103 | 102PJ | S0402 |
| C104 | 102PJ | S0402 |
| C105 | 225PA | S0402 |
| C106 | 225PA | S0402 |
| C107 | 103P | S0402 |
| C108 | NC | S0603 |
| C109 | 103P | S0603 |
| C110 | 103P | S0603 |
| C111 | 68PJ | S0603 |
| C112 | 27PJ | S0603 |
| C113 | NC | S0603 |
| C114 | 101PJ | S0603 |
| C115 | 27PJ | S0603 |
| C116 | 39PJ | S0603 |
| C117 | 101PJ | S0603 |
| C118 | 121PJ | S0603 |
| C119 | 43PJ | S0603 |
| C120 | 101PJ | S0603 |
| C121 | 1PB | S0603 |
| C122 | 104P | S0603 |
| C123 | 103P | S0603 |
| C124 | 103P | S0603 |
| C125 | 103P | S0603 |
| C126 | 103P | S0402 |
| C127 | 103P | S0402 |
| C128 | 105PC | S0402 |
| C129 | 103P | S0603 |
| C130 | 103P | S0603 |
| C131 | 103P | S0402 |
| C132 | 106PA | S0402A |
| C133 | 103P | S0402 |
| C134 | 103P | S0402 |
| C135 | 475PA | S0402A |
| C136 | 221PJ | S0402 |
| C137 | 103P | S0402 |
| C138 | 105P | S0805 |
| C139 | 103P | S0402 |
| C140 | 106PA | S0603 |
| C141 | 103P | S0603 |
| C142 | 103P | S0402 |
| C143 | 102PJ | S0402 |
| C144 | 104PC | S0402 |
| C145 | 105PC | S0402 |
| C146 | 101PJ | S0402 |
| C147 | 226PE | S0805 |
| C148 | 104P | S0603 |
| C149 | 104P | S0603 |
| C150 | 104P | S0603 |
| C151 | 33PJ | S0603 |
| C152 | 151P2D/J | S0805 |

| Designators | Comment | Footprint |
|---|---|---|
| C153 | 102P | S0603 |
| C154 | 104P | S0603 |
| C155 | 102P2D/J | S1206 |
| C156 | 271P2D/J | S0805 |
| C157 | 22PJ | S0402 |
| C158 | 33P2D/J | S0805 |
| C159 | NC | S0603 |
| C160 | 33PJ | S0603 |
| C161 | 331PJ | S0603 |
| C162 | 271PJ | S0603 |
| C163 | 104P | S0603 |
| C164 | 104P | S0603 |
| C165 | 102PJ | S0402 |
| C166 | 105PC | S0402 |
| C167 | 105P | S0805 |
| C168 | 105P | S0805 |
| C169 | 105P | S0805 |
| C170 | 105P | S0805 |
| C171 | 105P | S0805 |
| C172 | 225PA | S0402 |
| C173 | 475PC | S0603 |
| C174 | 105PC | S0402 |
| C175 | 106PA | S0402A |
| C176 | 102P | S0603 |
| C177 | 106PA | S0402A |
| C178 | 106PA | S0402A |
| C179 | 103P | S0402 |
| C180 | 102P | S0603 |
| C181 | 103P | S0402 |
| C182 | 103P | S0402 |
| C183 | 103P | S0402 |
| C184 | 221PJ | S0402 |
| C185 | 105PC | S0402 |
| C186 | 475PE | S0805 |
| C187 | 102P | S0402 |
| C188 | 103P | S0603 |
| C189 | 102P | S0603 |
| C190 | 103P | S0603 |
| C191 | 103P | S0402 |
| C192 | 333PE | S0402 |
| C193 | 475PC | S0603 |
| C194 | 103P | S0603 |
| C195 | 102P | S0402 |
| C196 | NC | S0402 |
| C198 | 106P | S1206 |
| C199 | 105PC | S0402 |
| C200 | 121PJ | S0402 |
| C201 | 121PJ | S0402 |
| C202 | 102P | S0603 |
| C203 | NC | S0402 |
| C204 | NC | S0402 |
| C205 | 3PB | S0603 |
| C206 | 103P | S0603 |
| C207 | 475PC | S0603 |
| C208 | 103P | S0402 |
| C209 | 104P | S0603 |
| C211 | 474P | S0805 |
| C212 | 103P | S0402 |
| C216 | 104PC | S0402 |

| Designators | Comment | Footprint |
|---|---|---|
| C217 | 103P | S0402 |
| C218 | 103P | S0402 |
| C219 | 103P | S0402 |
| C220 | 103P | S0402 |
| C221 | 104PC | S0402 |
| C222 | 103P | S0402 |
| C223 | 104PC | S0402 |
| C225 | 106PA | S0402A |
| C226 | 475PC | S0603 |
| C227 | 104PC | S0402 |
| C228 | 104PC | S0402 |
| C229 | NC | S0402 |
| C230 | 104PC | S0402 |
| C231 | 102P | S0603 |
| C232 | NC | S0402 |
| C233 | NC | S0402 |
| C234 | NC | S0402 |
| C235 | NC | S0402 |
| C236 | NC | S0402 |
| C237 | NC | S0402 |
| C238 | NC | S0402 |
| C239 | 104P | S0603 |
| C240 | NC | S0402 |
| C241 | NC | S0402 |
| C242 | NC | S0402 |
| C243 | 103P | S0402 |
| C244 | 103P | S0402 |
| C245 | 103P | S0603 |
| C246 | 475PC | S0603 |
| C247 | 103P | S0402 |
| C248 | NC | S0402 |
| C249 | 105PC | S0402 |
| C250 | 5PB | S0402 |
| C251 | NC | S0402 |
| C252 | 27PJ | S0402 |
| C253 | 16PJ | S0402 |
| C254 | NC | S0402 |
| C255 | 0R | S0402 |
| C256 | NC | S0402 |
| C257 | NC | S0402 |
| C258 | NC | S0402 |
| C259 | NC | S0402 |
| C260 | 103P | S0402 |
| C261 | 103P | S0402 |
| C266 | NC | S0603 |
| C280 | 106PA | S0402A |
| C282 | 103P | S0402 |
| C289 | 106P | S1206 |
| C290 | 106P | S1206 |
| C700 | NC | S0201 |
| C701 | 103P | S0402 |
| C702 | 103P | S0603 |
| C703 | 103P | S0402 |
| C704 | 103P | S0402 |
| C705 | 106PA | S0603 |
| C706 | 103P | S0201 |
| C707 | 103P | S0201 |
| C708 | 103P | S0201 |
| C709 | 103P | S0201 |

| Designators | Comment | Footprint |
|---|---|---|
| C710 | 106PA | S0603 |
| C711 | NC | S0201 |
| C712 | 103P | S0201 |
| C713 | 221PJ | S0402 |
| C714 | 103P | S0201 |
| C715 | 104PC | S0402 |
| C716 | 106PA | S0603 |
| C717 | 104PC | S0402 |
| C718 | 106PA | S0603 |
| C719 | 103P | S0201 |
| C720 | 103P | S0402 |
| C721 | 104PC | S0402 |
| C723 | 472P | S0402 |
| C724 | 104PC | S0402 |
| C725 | 104PC | S0402 |
| C726 | 475PA | S0402A |
| C727 | 106PA | S0603 |
| C728 | NC | S0201 |
| C729 | 103P | S0201 |
| C730 | 102P | S0402 |
| C732 | 102P | S0402 |
| C747 | 103P | S0402 |
| CB1 | QI-0014 | M10.7 |
| CF1 | FCI-0006 | K455E5 |
| D1 | DS-0358 | SOD323 |
| D2 | DS-0358 | SOD323 |
| D3 | DS-0013 | SOD523 |
| D4 | DS-0013 | SOD523 |
| D5 | DS-0013 | SOD523 |
| D7 | DS-0013 | SOD523 |
| D8 | DS-0013 | SOD523 |
| D9 | DS-0013 | SOD523 |
| D10 | NC | SOD523 |
| D13 | DS-0251 | SOT323A |
| D14 | DS-0251 | SOT323A |
| D15 | DS-0082 | SOD523 |
| D16 | DS-0082 | SOD523 |
| D17 | DS-0082 | SOD523 |
| D18 | DS-0362 | SOD523 |
| D19 | DS-0362 | SOD523 |
| D21 | DS-0013 | SOD523 |
| D22 | DS-0013 | SOD523 |
| D23 | DS-0322 | SOD523 |
| D24 | DS-0008 | SOD323 |
| D100 | DS-0322 | SOD523 |
| D101 | DS-0322 | SOD523 |
| D102 | DS-0306 | DO-214AA(SMB)-V1 |
| D103 | DS-0357 | DO-214AB |
| D104 | DS-0358 | SOD323 |
| D105 | NC | SOD323 |
| D106 | NC | SOT323A |
| D107 | DS-0013 | SOD523 |
| D700 | 0R | SOD523 |
| D701 | DS-0335 | sc70-123 |
| D703 | DS-0356 | SOD523 |
| E6 | 220uF/16V | SRB0.125(6MM) |
| E13 | 220uF/16V | SRB0.125(6MM) |
| E101 | 470uF/25V | SRB0.160(8MM) |
| E102 | 330uF/35V | SRB0.200(10MM) |

| Designators | Comment | Footprint |
|---|---|---|
| E103 | 330uF/35V | SRB0.200(10MM) |
| E104 | 470uF/25V | SRB0.160(8MM) |
| E105 | 470uF/25V | SRB0.160(8MM) |
| E106 | 47uF/35V | SRB0.125(6MM) |
| J2 | CGJ-JCJ-0035 | SIP2T2 |
| J5 | POWER | TSK13.3*15*3.8 |
| J701 | CGJ-JCJ-0040 | CON2.0-3 |
| J702 | CGJ-JCJ-0269(CB-LJX-0165) | SIPM24 |
| JK101 | CGJ-JCJ-0288 | PJ-302-V3 |
| L1 | LWS0805-0071 | WCCI2012.0805 |
| L4 | LWS0805-0077 | WCCI2012.0805 |
| L5 | LWS0805-0077 | WCCI2012.0805 |
| L6 | LWS0805-0077 | WCCI2012.0805 |
| L7 | LWS1008-0052 | WCCI2520.1008 |
| L8 | LWS2520-0011 | WCFI2520.NLV25T |
| L9 | LWS2520-0011 | WCFI2520.NLV25T |
| L10 | LWS2520-0011 | WCFI2520.NLV25T |
| L11 | 22uH | S0603 |
| L12 | 6.8uH | S0603 |
| L13 | LWS3225-0006 | WCFI3225.NLV32T |
| L14 | LWS-0008 | 0.5*10TR-S-V2.0 |
| L15 | LWS-0008 | 0.5*10TR-S-V2.0 |
| L16 | LWS-0008 | 0.5*10TR-S-V2.0 |
| L17 | LWS-0008 | 0.5*10TR-S-V2.0 |
| L18 | 220nH | S0402 |
| L19 | LASAS-0014 | 0.5*7TR.110NH--V2.0 |
| L20 | LASAS-0013 | 0.5*6TR.90NH--V2.0 |
| L21 | LWS1008-0053 | WCCI2520.1008 |
| L22 | 6.8uH | S0603 |
| L24 | LWS0805-0078 | WCCI2012.0805 |
| L31 | LWS3225-0003 | WCFI3225.NLV32T |
| L100 | LWS0630-0003 | INDUCTORS-7.8*7.0MM |
| L101 | LWS127125-0001 | L7*13 |
| L102 | LWS0630-0003 | INDUCTORS-7.8*7.0MM |
| L103 | 220nH | S0402 |
| L104 | LWS0805-0079 | WCCI2012.0805 |
| L105 | LMS0805-0020 | S0805 |
| L107 | NC | S0603 |
| L108 | NC | S0603 |
| L700 | CB-LJX-0097 | JMP |
| L701 | 6.8uH | S0603 |
| P100 | TXJG-0141 | FG110-Z-WDD-QB |
| Q3 | TS-0327 | SOT23 |
| Q5 | TS-0327 | SOT23 |
| Q7 | TS-0327 | SOT23 |
| Q13 | TS-0429 | SOT323 |
| Q16 | TS-0431 | SOT323 |
| Q17 | TS-0327 | SOT23 |
| Q19 | TS-0151 | SOT353 |
| Q20 | TS-0330 | EMT3 |
| Q26 | TS-0327 | SOT23 |
| Q27 | TS-0330 | EMT3 |
| Q29 | ICI-0062 | TO-220-V-123-C |
| Q30 | TI-0014 | TO126-V-ECB-V2.0 |
| Q31 | TI-0051 | TO92-ECB |
| Q33 | TS-0330 | EMT3 |
| Q35 | TS-0230 | SOT23 |
| Q36 | TS-0017 | SOT23 |
| Q37 | TI-0064 | TO-220-V-123-C |

| Designators | Comment | Footprint |
|---|---|---|
| Q38 | TS-0331 | SOT89 |
| Q39 | TS-0330 | EMT3 |
| Q100 | TS-0330 | EMT3 |
| Q101 | TS-0493 | SOT-363 |
| Q104 | NC | SOT323 |
| Q105 | NC | SOT323 |
| Q106 | NC | SOT323 |
| Q107 | NC | SOT323 |
| Q108 | NC | SOT323 |
| Q109 | NC | SOT323 |
| Q110 | NC | SOT323 |
| Q111 | NC | SOT353 |
| Q112 | NC | EMT3 |
| Q700 | TS-0330 | EMT3 |
| Q701 | TS-0100 | EMT3 |
| Q703 | TS-0330 | EMT3 |
| R3 | 2K2 | S0402 |
| R4 | 2K2 | S0402 |
| R5 | 180R | S0603 |
| R6 | 1K | S0402 |
| R7 | 2K2 | S0402 |
| R8 | 2K2 | S0402 |
| R9 | 1K | S0402 |
| R11 | 3K3 | S0805 |
| R14 | 10K | S0402 |
| R19 | 10K | S0402 |
| R20 | 10K | S0402 |
| R22 | 10K | S0402 |
| R24 | 10K | S0402 |
| R25 | 2K4 | S0402 |
| R26 | 2KF | S0402 |
| R30 | 2K | S0402 |
| R34 | 1K | S0402 |
| R37 | 4K7 | S0402 |
| R40 | 470R | S0402 |
| R41 | 470R | S0402 |
| R42 | 390R | S0402 |
| R43 | 220R | S0402 |
| R44 | 220R | S0402 |
| R45 | 470R | S0402 |
| R56 | 1K | S0402 |
| R57 | 3K3 | S0402 |
| R62 | 68KF | S0402 |
| R64 | 47K | S0402 |
| R65 | 47K | S0402 |
| R66 | 47K | S0402 |
| R67 | 100K | S0402 |
| R68 | 100K | S0402 |
| R69 | 100K | S0402 |
| R70 | 100K | S0402 |
| R72 | 1MF | S0402 |
| R73 | 270K | S0402 |
| R74 | 330K | S0402 |
| R75 | 10R | S0402 |
| R76 | 1K | S0402 |
| R77 | 1K | S0402 |
| R79 | 0R | S0402 |
| R80 | 47K | S0402 |
| R81 | 220R | S0402 |

| Designators | Comment | Footprint |
|---|---|---|
| R82 | 0R | S0402 |
| R83 | 330R | S0402 |
| R85 | 470RF | S0402 |
| R86 | 3K3F | S0402 |
| R87 | 10KF | S0402 |
| R88 | 22K | S0402 |
| R90 | 100R | S0402 |
| R92 | 47R | S0402 |
| R93 | 470R | S0402 |
| R94 | 47K | S0402 |
| R95 | 68K | S0402 |
| R96 | 33K | S0402 |
| R97 | 680R | S0402 |
| R100 | 150K | S0402 |
| R101 | 5K6 | S0402 |
| R102 | 2K2 | S0603 |
| R103 | 10K | S1206 |
| R104 | 2R4 | S2010 |
| R105 | 10K | S0603 |
| R106 | 10K | S0402 |
| R107 | 100R | S0402 |
| R108 | 10K | S0402 |
| R109 | 10K | S0201 |
| R110 | 4K7 | S0402 |
| R111 | 24K | S0402 |
| R112 | 4K7 | S0402 |
| R113 | 0R | S0402 |
| R114 | 10K | S0603 |
| R115 | 10K | S0201 |
| R116 | 10R | S0402 |
| R117 | 3K9 | S0402 |
| R118 | 33R | S0603 |
| R119 | 0R | S0603 |
| R120 | 56R | S0603 |
| R121 | 39K | S0603 |
| R122 | 10K | S0402 |
| R123 | 1K8 | S0402 |
| R124 | 3K9 | S0402 |
| R125 | 10R | S0402 |
| R126 | 39K | S0603 |
| R127 | 100K | S0402 |
| R128 | 10K | S0805 |
| R129 | 10K | S0402 |
| R130 | 2K2 | S0402 |
| R131 | 100K | S0402 |
| R132 | 10R | S0402 |
| R133 | 220R | S0201 |
| R134 | 68K | S0402 |
| R135 | 33K | S0603 |
| R136 | 220K | S0603 |
| R137 | 12KD | S0402 |
| R138 | 1K2D | S0402 |
| R139 | NC | S0603 |
| R140 | 1K | S0402 |
| R141 | 330K | S0402 |
| R142 | 220R/F | S1206 |
| R143 | 22K | S0402 |
| R144 | 10K | S0402 |
| R145 | 10K | S0402 |

| Designators | Comment | Footprint |
|---|---|---|
| R146 | 10K | S0402 |
| R147 | 30K | S0402 |
| R148 | 10K | S0603 |
| R149 | 6K8 | S0603 |
| R150 | 10K | S0402 |
| R151 | 2K2 | S0402 |
| R152 | 2K2 | S0402 |
| R153 | 100K | S0402 |
| R154 | 220R | S0201 |
| R155 | 220R | S0201 |
| R156 | 0R | S0603 |
| R157 | NC | S0603 |
| R158 | 1K | S0603 |
| R159 | 220R | S0201 |
| R160 | NC | S2010 |
| R161 | 12R | S0805 |
| R162 | 100K | S0402 |
| R163 | 100K | S0402 |
| R164 | 2R2 | S0805 |
| R169 | 4K7 | S0402 |
| R170 | 15R | S0402 |
| R172 | 1K | S0402 |
| R173 | 100K | S0402 |
| R175 | NC | S0402 |
| R176 | NC | S0402 |
| R177 | NC | S0402 |
| R178 | NC | S0402 |
| R179 | NC | S0402 |
| R180 | NC | S0402 |
| R181 | NC | S0402 |
| R182 | 470R | S0402 |
| R183 | NC | S0402 |
| R184 | NC | S0402 |
| R185 | NC | S0402 |
| R186 | RTS-0023 | S0402 |
| R187 | NC | S0402 |
| R188 | NC | S0402 |
| R189 | NC | S0402 |
| R192 | NC | S0402 |
| R193 | NC | S0402 |
| R194 | NC | S0402 |
| R195 | NC | S0402 |
| R196 | NC | S0402 |
| R197 | 1MF | S0402 |
| R198 | NC | S0402 |
| R199 | 470R | S0603 |
| R200 | NC | S0402 |
| R201 | NC | S0402 |
| R202 | 0R | S0402 |
| R203 | 220R | S0603 |
| R204 | 100K | S0402 |
| R205 | 33K | S0402 |
| R206 | 1K | S0402 |
| R207 | 220R | S0201 |
| R208 | 5K6 | S0402 |
| R209 | 2K2 | S0603 |
| R210 | 100R | S0805 |
| R211 | 220R | S0201 |
| R212 | 220R | S0201 |

| Designators | Comment | Footprint |
|---|---|---|
| R213 | 220R | S0402 |
| R214 | 220R | S0402 |
| R221 | 102PJ | S0402 |
| R222 | 1MF | S0402 |
| R223 | 1K5 | S0402 |
| R224 | 3K3 | S0402 |
| R225 | 220R | S0402 |
| R229 | 2K7 | S0402 |
| R700 | 1K | S0402 |
| R701 | 220R | S0402 |
| R702 | 1K | S0201 |
| R703 | 1K | S0201 |
| R704 | 1K | S0201 |
| R705 | 220R | S0201 |
| R706 | 220R | S0201 |
| R707 | 220R | S0201 |
| R708 | 10K | S0402 |
| R709 | 100R | S0402 |
| R710 | 4K7 | S0402 |
| R711 | 1K | S0402 |
| R712 | 220R | S0402 |
| R713 | 1K | S0402 |
| R714 | 2K2 | S0402 |
| R715 | 1K | S0201 |
| R716 | 22K | S0402 |
| R717 | 1K | S0201 |
| R718 | 10K | S0201 |
| R719 | 10K | S0201 |
| R720 | LMS0603-0011 | S0603 |
| R721 | 10K | S0201 |
| R722 | 10K | S0201 |
| R723 | NC | S0201 |
| R724 | NC | S0201 |
| R725 | NC | S0201 |
| R726 | 220R | S0402 |
| R727 | NC | RES0.4(1/4W) |
| R728 | 22K | S0402 |
| R729 | NC | S0201 |
| R730 | NC | S0201 |
| R731 | 150K | S0402 |
| R732 | 47K | S0402 |
| R733 | 68K | S0402 |
| R734 | NC | S0201 |
| R735 | 220R | S0201 |
| R736 | 1K | S0201 |
| R737 | 1K | S0201 |
| R738 | 1K | S0201 |
| R741 | 10K | S0201 |
| R742 | NC | S0402 |
| R746 | 220R | S0402 |
| R747 | 1K | S0402 |
| R748 | NC | S0402 |
| R749 | NC | S0402 |
| R750 | 1K | S0402 |
| R751 | 10K | S0402 |
| U2 | ICS-0733 | ICS-TSSOP-8 |
| U5 | ICS-1048 | SSOP16 |
| U6 | TS-0461 | SOT25 |
| U10 | ICS-0967 | DPAK-3 |

| Designators | Comment | Footprint |
|---|---|---|
| U11 | ICS-0933 | DPAK-3 |
| U15 | ICS-1025 | TO-263-5-A-V1 |
| U100 | ICS-0924 | SOT25 |
| U101 | ICS-0926 | SOP8 |
| U102 | ICS-0394 | TO-263 |
| U103 | ICS-0987 | QFN4X4-20E |
| U700 | ICS-0978 | QFN48-6*6 |
| U701 | TS-0454 | SOT363 |
| X100 | QSSMD-0088 | TCXO-2520 |
| Y1 | QSSMD-0059 | XTAL SMD5032 |
| Y2 | FDI-0001 | K450V2 |
| Y700 | QSSMD-0087 | XTAL3.2*1.5 |

# CIRCUIT DESCRIPTION

## Frequency configuration

The receiver utilizes double conversion. The first IF is 10.695MHz and the second IF is 455kHz. The first local oscillator signal is supplied from the VCO module.
The VCO module in the transmitter generates the necessary frequencies. Fig. 1 shows the frequencies.

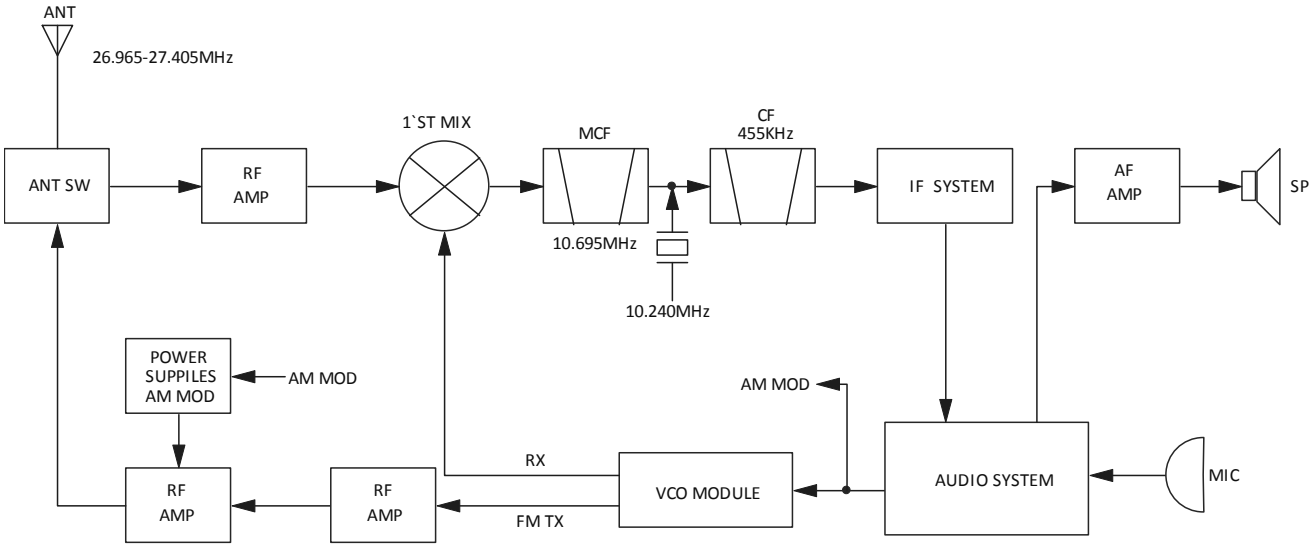



**Fig. 1 Frequency configuration**

## Receiver

The frequency configuration of the receiver is shown in Fig. 2.

### ■ Front - end RF amplifier

An incoming signal from the antenna is applied to an RF amplifier (Q3) after passing through a transmit/receive switch circuit (D15, D16 and D17 are off). After the signal is filtered through a band pass filter (L8, L9 and L10) to eliminate unwanted signals before it is passed to the first mixer.

### ■ First Mixer

The signal from the RF amplifier is heterodyned with the first local oscillator signal from the RF module at the first mixer (Q5) to create a 10.695MHz first intermediate frequency (1st IF) signal. The first IF signal through the monolithic crystal filter (MCF : CB1) to further remove spurious signals.

### ■ IF amplifier

The first IF signal go into second mixer Q26, second mixer mix first IF and 10.24MHZ second IF output Y1. The signal is heterodyned again with a second local oscillator signal. The second IF signal is then fed through a 455kHz ceramic filter (CF1) to further eliminate unwanted signals. The signal is amplified by Q17 and Q7, and then the second IF signal enter U5 (FM processing IC) in FM mode or changed according to D13 and receive audio signal output.

# CIRCUIT DESCRIPTION

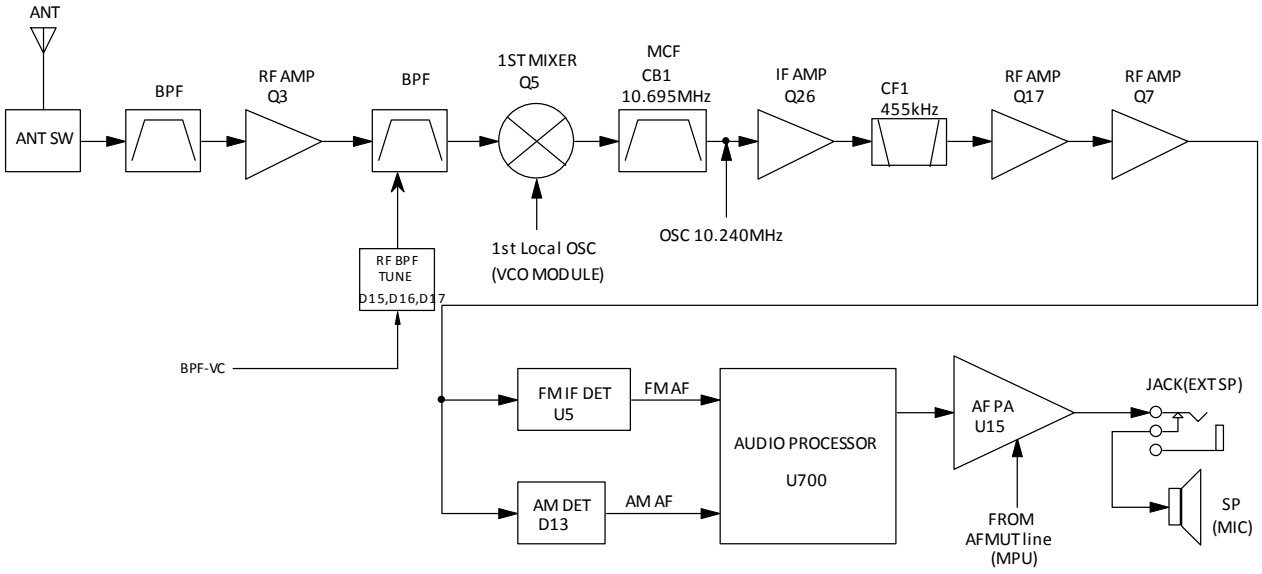



**Fig. 2 Receiver section configuration**

### ■ AF amplifier

The FM IC output the FM AF passes through the audio processor (U700) or The AM demodulated signal from Q5 goes to the audio processor (U700) through D13. After goes to AF power amplifier IC (U15). Is routed to an audio power amplifier (U15) where it is amplified and output to the speaker. To output sounds from the speaker, U700 sends a low signal to the SP.MUT line the turns U15.

### ■ Squelch

A squelch circuit is provided to prevent no-signal noise or weak signals from outputting to a speaker during transmission.

## Transmitter

### ■ Transmit audio

The audio signal from the microphone goes through the audio processor (U700) and resulting signal goes to the VCO module through the RF modulation terminal for direct FM modulation. The AM modulation signal enter into RF amplifier after passing through power supplies Q36, Q37 and Q38.

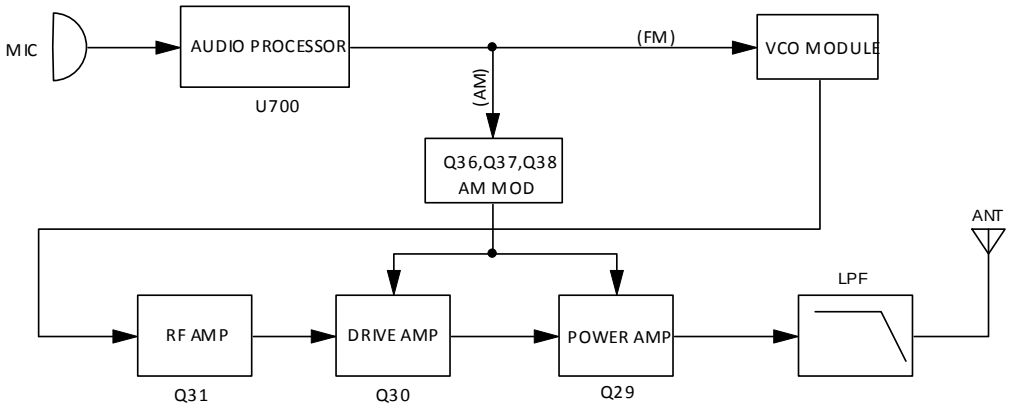



**Fig. 3 Transmit circuit**

# CIRCUIT DESCRIPTION

■ **Power Amplifier Circuit**

The transmit output signal from the RF module passes through the amplified by Q31 and Q30. The amplified signal goes to the final amplifier (Q29) through a low-pass filter. The lowpass filter removes unwanted high-frequency harmonic components, and the resulting signal is transmitted through the antenna terminal.

## Power Supply

The power supply voltage is maintained to 8.0V, 5.0V, and 3.3V by the series regulator (U10, U11, and U100). It is used as 8T and 8R.

8V is a common 8V.

5V is a common 5V.

3.3V supplies power to the VCO module.

8R is 8V for reception and output during reception.

8T is 8V for transmission and output during transmission.

## Control Circuit

■ **MPU**

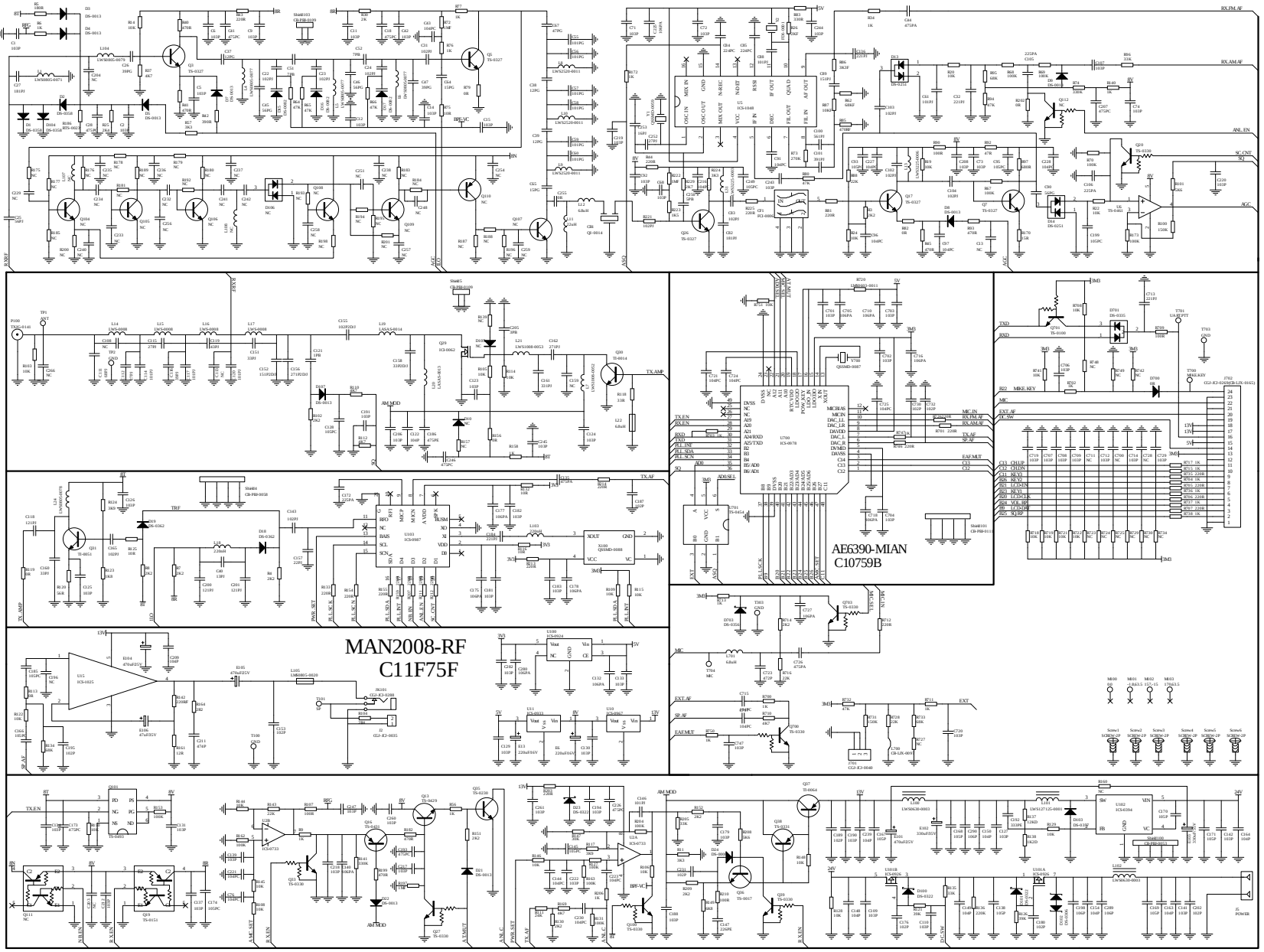
The control circuit consists of a microprocessor (U700) and its peripheral circuits. It controls the TX-RX unit. U700 mainly performs the following:

1) Switching between transmission and reception by the RF signal input.
2) Sending frequency program data to the VOC module.
3) Controlling squelch on/off by the DC voltage from the squelch circuit.
4) Controls the compander unit.
5) Controls the power supply unit.

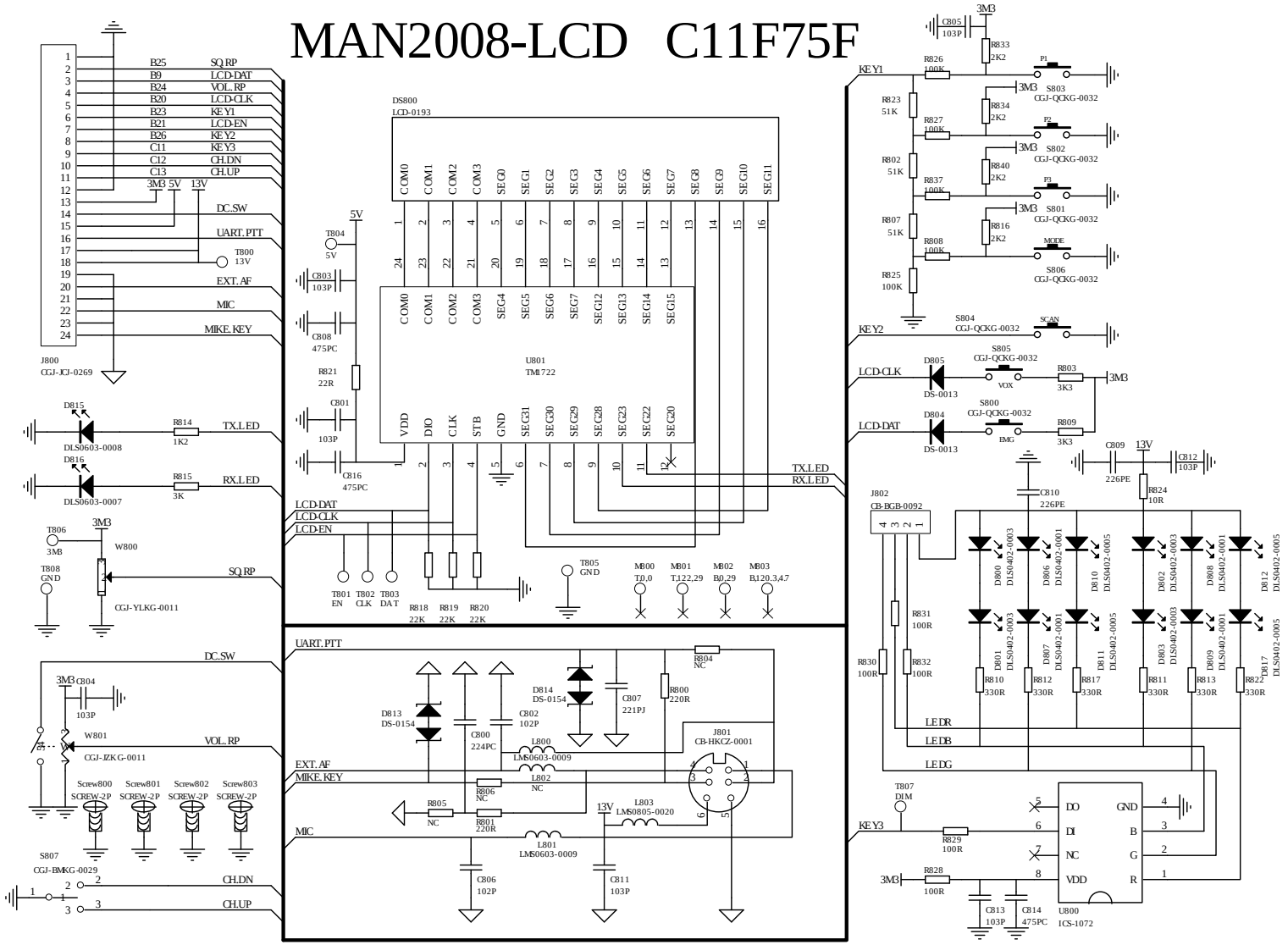
■ **Display Circuit**

The MPU (U700) controls the display LCD and LEDs. The LCD driver (U801) and MPU (U700) communicate through the DAT, CLK, CS lines. The LEDs switch (Q800) and MPU (U700) communicate through the DIM lines.

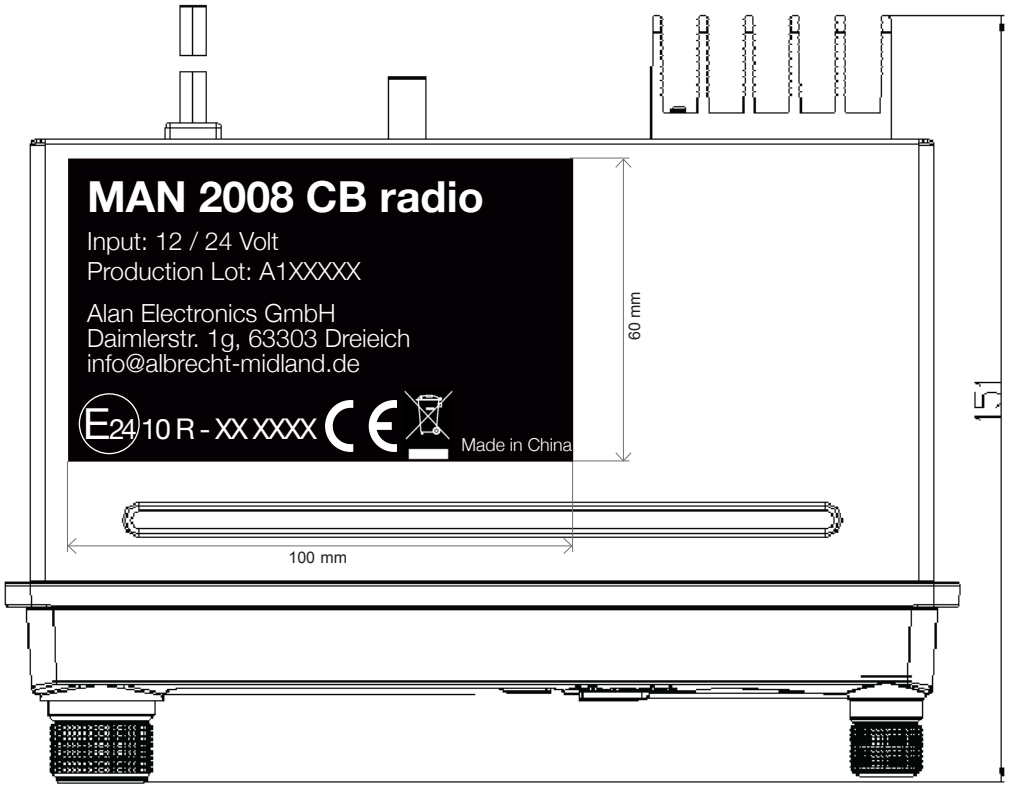
# SCHEMATIC DIAGRAM

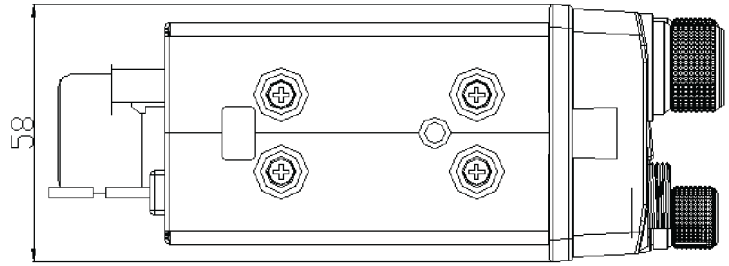


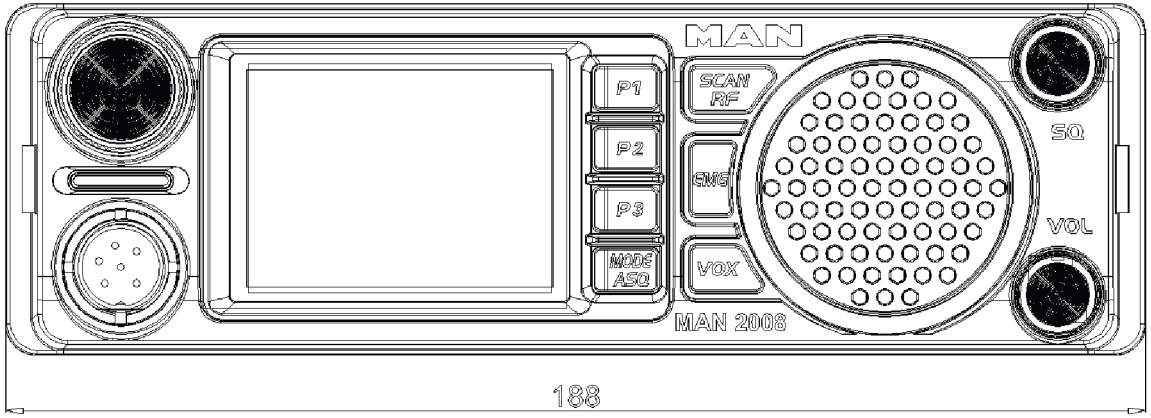
# SCHEMATIC DIAGRAM



# Dimensioned drawings



# Albrecht AE 6390 CB radio

Input: 12 / 24 Volt

Production Lot: A1XXXXX

Alan Electronics GmbH
Daimlerstr. 1g, 63303 Dreieich
info@albrecht-midland.de


E24 10 R - XX XXXX

Made in China

# MAN 2008 CB radio

Input: 12 / 24 Volt

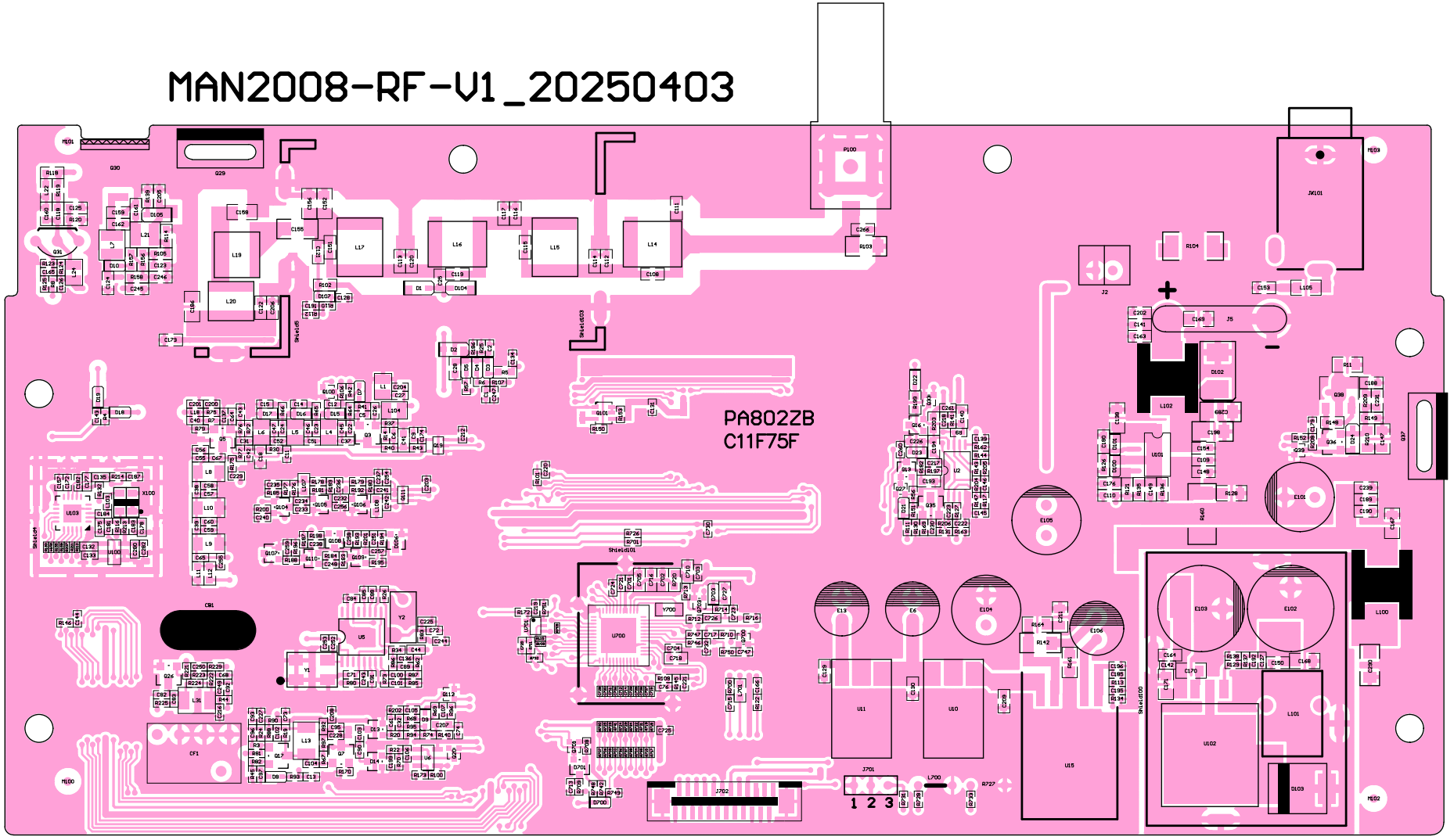
Production Lot: A1XXXXX

Alan Electronics GmbH
Daimlerstr. 1g, 63303 Dreieich
info@albrecht-midland.de

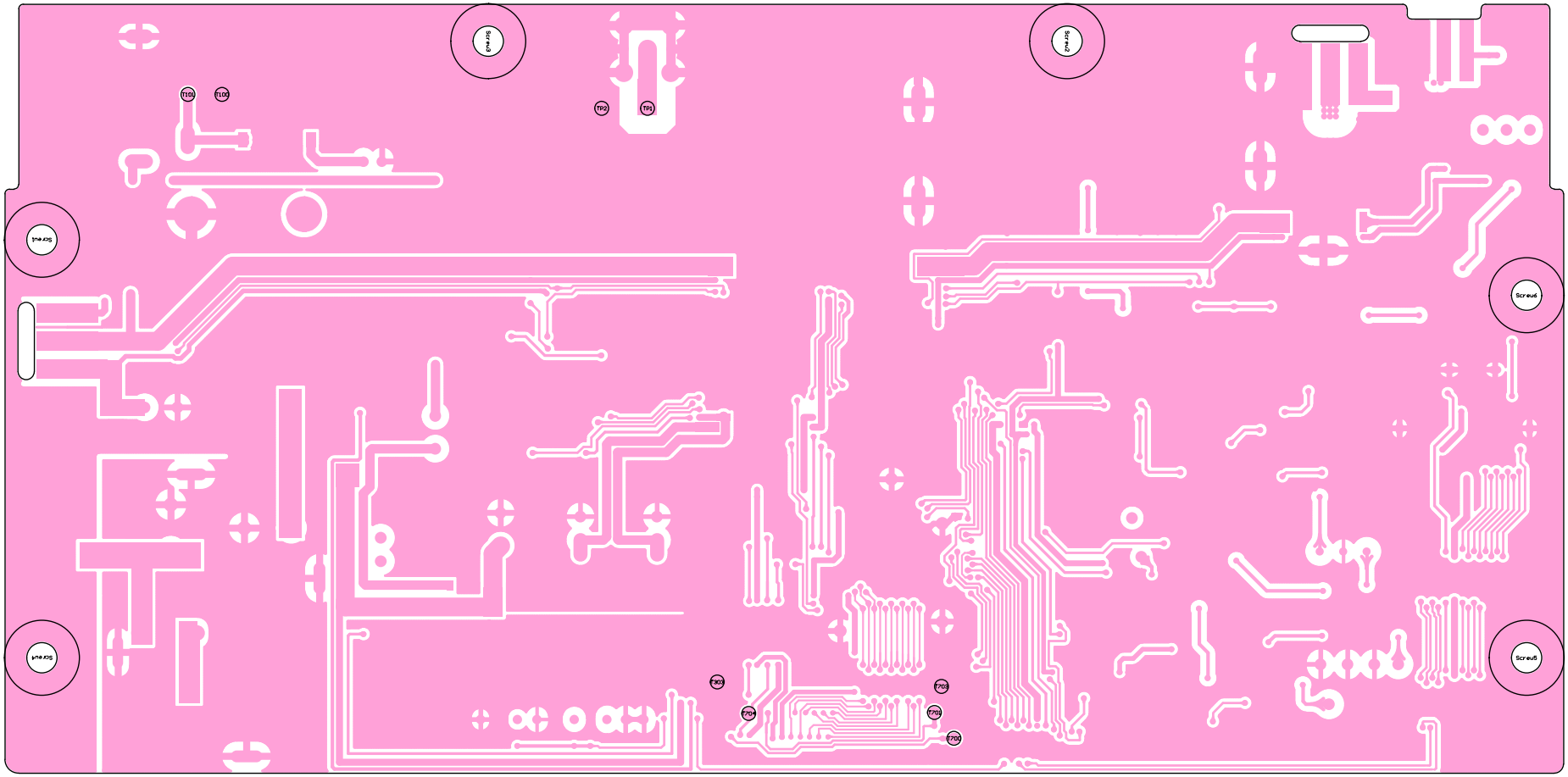

E24 10 R - XX XXXX

Made in China

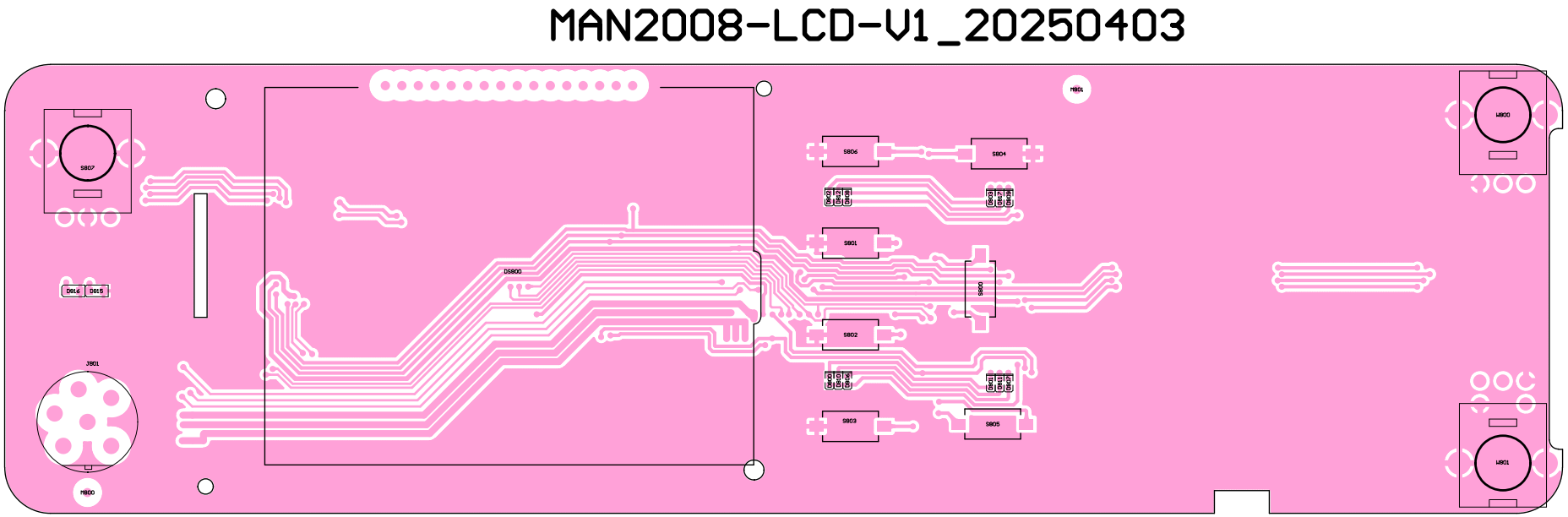
## PC board views



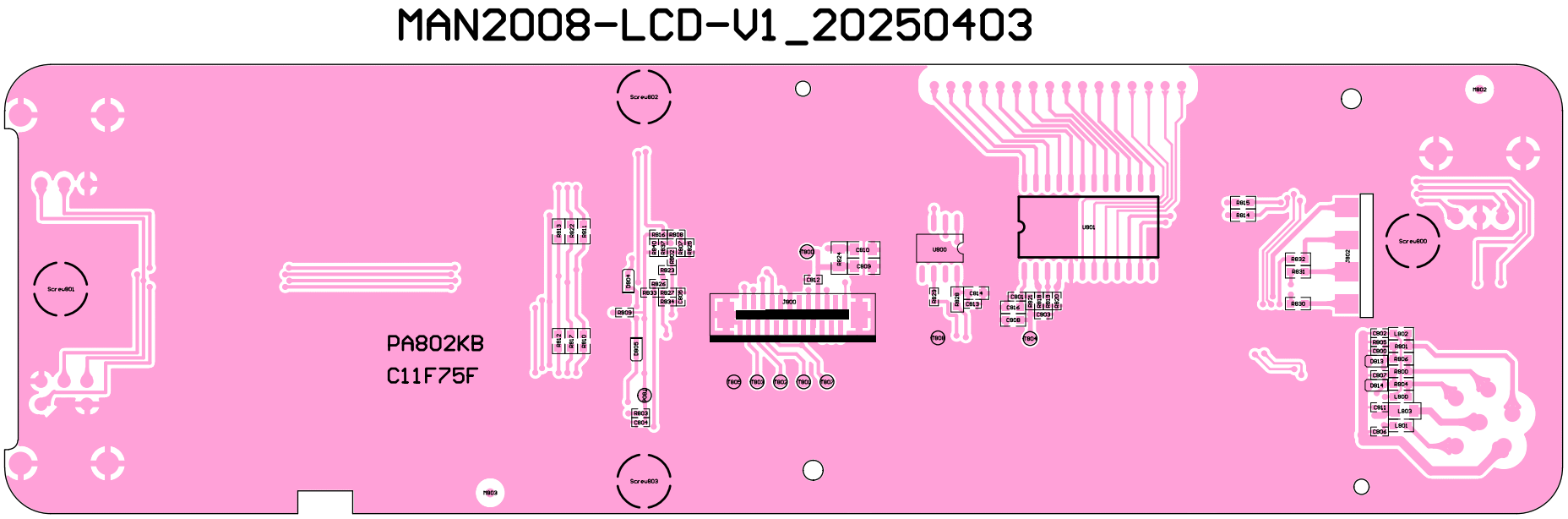
## PC board views



## PC board views



## PC board views



# Albrecht AE6390 / MAN 2008 variant matrix

Albrecht AE6390 and MAN 2008 are variants of the same device, identical in all points, except the following customer-specific details:

Variant Matrix

| | **Albrecht AE6390** | **MAN 2008** |
|---|---|---|
| | | |
| **Antenna connector** | UFH SO 239 (PL) | Fakra |
| **Power connector** | Blank wires | Customer specific |
| **Display backlight** | white | multicolor |

Maxim Rosenthal

21.08.2025