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IRAM

Operation Manual

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1 INTRODUCTION

The **Integrated Radio Access Module** (IRAM) is designed for wireless communication to cars and is integrated into an existing workshop system. The radio frequency of the car keys is employed for communication.

Always install the IRAM as described in this manual. As the IRAM communicates with the car using radio frequencies some important items have to be observed. Read and observe the manual to avoid personal injuries, damages to the device or other equipment.

2 INTENDED USE

The Integrated Radio Access Module (IRAM) is designed for communication with cars via the radio frequency of the car key. For this purpose the IRAM has to be professionally installed and integrated into an existing workshop system.

The IRAM must only be installed and used in technical faultless state, as well as according to intended use with respect to safety considerations and possible hazards. Any other or even further use is regarded as not intended. The manufacturer is not liable for any resulting damages. Extensions or modifications by third persons must only be made upon consultation with the manufacturer.

Intended use includes reading of all operation manuals of the IRAM as well as observation of all included hints – especially safety instructions.

3 TECHNICAL DATA

Operating temperature	- 40 °C to +65 °C
Rel. humidity	10 % ... 80 % (non condensing)
Storage temperature	- 40 °C to + 70 °C
Power supply	IEEE 802.3af Power-Over-Ethernet
Ethernet interface IRAM	10/100 Mbit/s Ethernet-Port with Auto-MDX
Plug connectors IRAM	RJ45, waterproof acc. to IP66

4 BASIC SAFETY INSTRUCTIONS



WARNING

Warns about personal injuries that depend on behavior (action, omission).



NOTICE

Gives important information to avoid material damage or incorrect use.

4.1 SAFETY INSTRUCTIONS



NOTICE

This operation manual has to be always available at the location completely and in legible form.

The operation manual has to be observed absolutely.

Commissioning must only be carried out by staff that is familiar with the manual.



WARNING

No serviceable parts inside! Never open the device in case of damages.










5 SCOPE OF DELIVERY

The IRAM is delivered preassembled and with all accessories.
Please unpack the device and check all components for completeness and mechanical damages.



WARNING

Damaged devices, connectors and cables are not certified for use. Only employ original cables.

 IRAM	 Wall mounting set/screws	 Sun shield (black/white)
 Antenna angles	 Ethernet cable 10m	
Country-specific versions		
 Dual band antennas 868/434 MHz (4 x red)	 Single band antennas 315 MHz (2 x blue) Dual band antennas 868/434 MHz (2 x red)	



NOTICE

For information on country-specific versions please refer to the chapters
ANTENNA CONFIGURATIONS and CONNECTION



6 SYSTEM REQUIREMENTS

The IRAM (Integrated Radio Access Module) communicates with the cars via radio frequencies using the frequency of the car keys. The IRAM is integrated into the existing workshop system.

The following prerequisites have to be fulfilled for operation of the device:

Never operate any kind of equipment that may disturb the IRAM or that operates on the same frequency near to the device.

The IRAM can only be mounted after it has been integrated into the workshop network.

7 CONNECTION



WARNING

Electrical cables have to be laid out and protected against mechanical impact according to local regulations.

Do not insert connectors into the socket by force. Check the socket first for foreign objects and if connector and socket fit together.

The IRAM can be connected in two ways:

The IRAM is supplied via the network cable and has to be connected using a Power-Over-Ethernet injector.



NOTICE

The PoE injector is only suitable for indoor applications!

If the workshop is equipped with a network that is compatible to Power-Over-Ethernet the IRAM can be supplied and connected directly (see figure 7.1).



NOTICE

The network cable between PoE injector and PC is not included in the scope of delivery and has to be provided by the customer.

7.1 CONNECTION TO A PoE COMPLIANT NETWORK

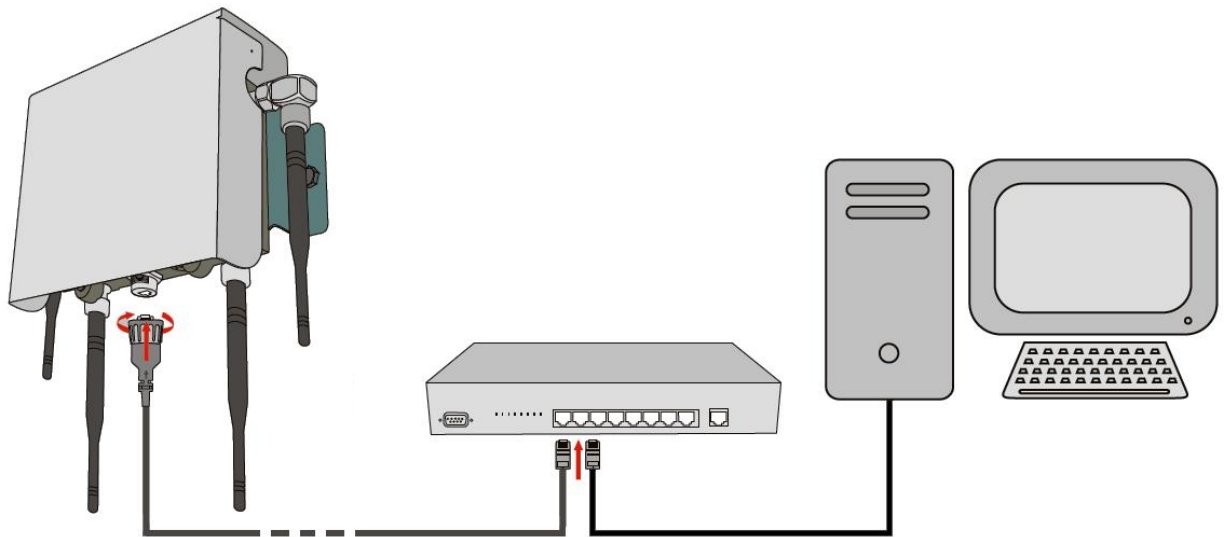


Fig.7.1: Connection to a PoE-compatible network

Connect the IRAM to the PoE-compliant network (screw the network cable at the IRAM tight to avoid penetration of humidity during outdoor applications).

Connect the PC to your PoE-compliant network.

A network cable to connect the PC to the network is not included and has to be procured if required.



NOTICE

Connect the IRAM only to the corresponding switch if the workshop network is already PoE-compliant.

In this case a PoE injector is not required.

8 ANTENNA CONFIGURATIONS

The IRAM is equipped with a country-specific antenna configuration according to the country of use.

Antenna configuration A is valid for all countries except: Mexico, USA, Canada, Japan, China, Hong Kong, Brazil and Thailand.

For these countries the IRAM is equipped with antenna configuration B.

Make sure that your IRAM is equipped with the correct antenna configuration for the country where it is operated.

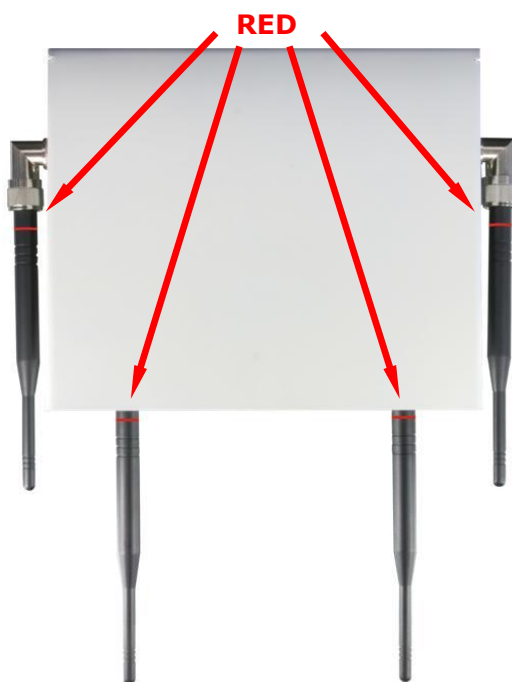


Fig.8.1: Antenna configuration A

Dual band antennas
868/434 MHz (4 x red)

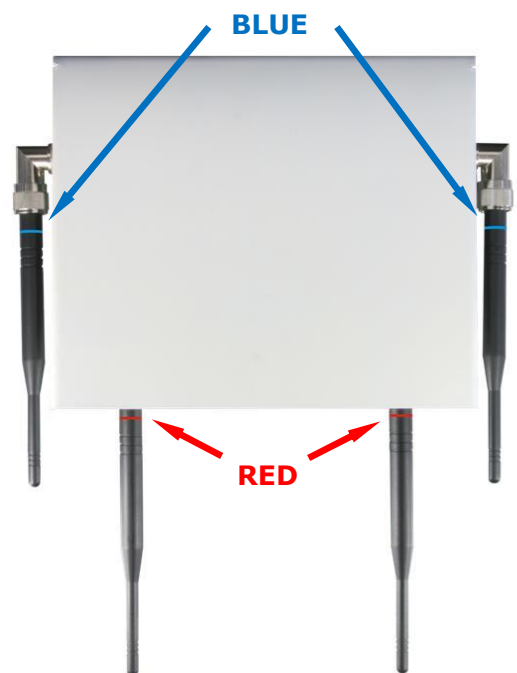


Fig.8.2: Antenna configuration B

Single band antennas
315 MHz (2 x blue)
Dual band antennas
868/434 MHz (2 x red)



9 LEDs

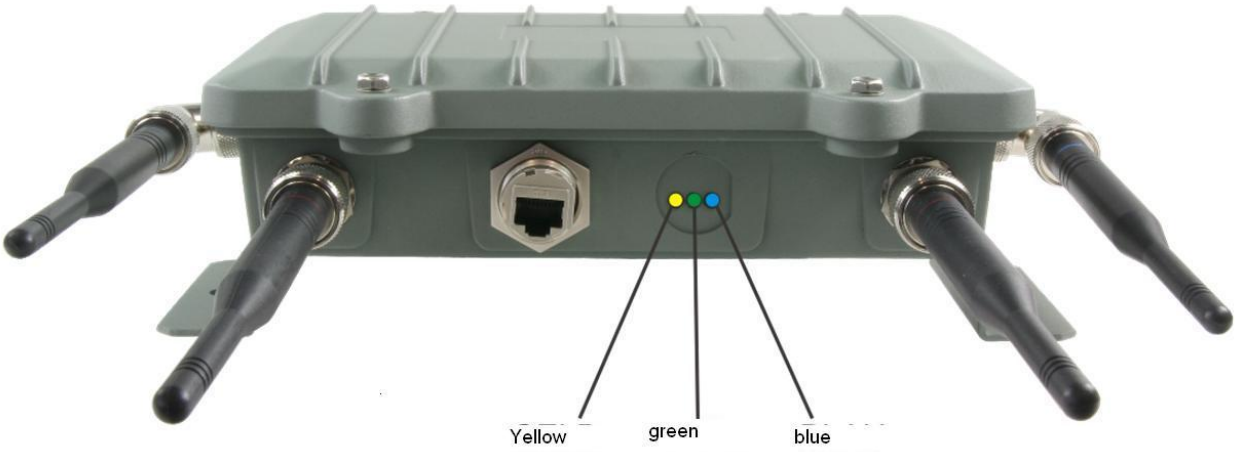


Fig.10.1: LED displays

Three LEDs at the bottom side of the device indicate the operational state of the IRAM.

LED (color)	Display
Yellow (flashes)	Communication to the workshop network
Green (permanent)	Operation display
Blue + yellow (flashing)	Boot procedure
Blue (flashes)	Communication to a car
All (running lights)	Software update



10 CLEANING/RECYCLING

Use a soft dry cloth to clean the device.

Dispose of the device environmentally sound after the utilization phase according to local regulations or recycle it.

11 IMPORTANT INSTRUCTIONS

Česky [Czech]	I+ME ACTIA Informatik und Mikro- Elektronik GmbH tímto prohlašuje, že tento IRAM je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede I+ME ACTIA Informatik und Mikro- Elektronik GmbH erklærer herved, at følgende udstyr IRAM overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt I+ME ACTIA Informatik und Mikro- Elektronik GmbH, dass sich das Gerät IRAM in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab I+ME ACTIA Informatik und Mikro- Elektronik GmbH seadme IRAM vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, I+ME ACTIA Informatik und Mikro- Elektronik GmbH, declares that this IRAM is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente I+ME ACTIA Informatik und Mikro- Elektronik GmbH declara que el IRAM cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ I+ME ACTIA Informatik und Mikro- Elektronik GmbH ΔΗΛΩΝΕΙ ΟΤΙ IRAM ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.
Français [French]	Par la présente Informatik und Mikro- Elektronik GmbH déclare que l'appareil IRAM est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente Informatik und Mikro- Elektronik GmbH dichiara che questo IRAM è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Informatik und Mikro- Elektronik GmbH deklarē, ka IRAM atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo Informatik und Mikro- Elektronik GmbH deklaruoja, kad šis IRAM atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Informatik und Mikro- Elektronik GmbH dat het toestel IRAM in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Informatik und Mikro- Elektronik GmbH, jiddikjara li dan IRAM jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Direttiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Informatik und Mikro- Elektronik GmbH nyilatkozom, hogy a IRAM megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Polski [Polish]	Niniejszym Informatik und Mikro- Elektronik GmbH oświadczam, że IRAM jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese]	Informatik und Mikro- Elektronik GmbH declara que este IRAM está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Informatik und Mikro- Elektronik GmbH izjavlja, da je ta IRAM v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	Informatik und Mikro- Elektronik GmbH týmto vyhlasuje, že IRAM spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	Informatik und Mikro- Elektronik GmbH vakuuttaa täten että IRAM tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Informatik und Mikro- Elektronik GmbH att denna IRAM står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir Informatik und Mikro- Elektronik GmbH yfir því að IRAM er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	Informatik und Mikro- Elektronik GmbH erklærer herved at utstyret IRAM er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.



Changes or modifications made to this equipment not expressly approved by the manufacturer may void the FCC authorization to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro

de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour

fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et

l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste,

ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This radio transmitter 7474A-IRAM has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio 7474A-IRAM a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

CONSIDERED ANTENNA LIST

Antenna Type	Frequency	Gain	Impedance	Polarization	VSWR
Single band antenna:	315MHz	2,15dBi	Nominal 50Ω	Linear vertical	2,5:1
Dual band antenna:	434/868MHz	2,15dBi	Nominal 50Ω	Linear vertical	2,5:1

Caution:

Antennas must only be changed by qualified staff in case of mechanical damage or malfunction!

The IRAM has been approved by Industry Japan to operate only with antenna types listed in Considered Antenna List above.

Pursuant to the Japanese Radio Law(電波法) and the Japanese Telecommunications Business Law(電気通信事業法), this device has been granted a designation number according to the "Ordinance concerning the Technical Regulations Conformity Certification etc. of Specified Radio Equipment(特定無線設備の技術基準適合証明等に関する規則)" Article 2-1-19: Approval n° : 202-202-LSA028 This device should not be modified (otherwise the granted designation number will become invalid).

12 PROTECTIVE DEVICE



WARNING

The radio transmitter 7474A-IRAM is sealed by the manufacturer's protective device and it is absolutely prohibited to open the seal!