

Modules and Modems under R&TTE directive

By Pascal Saguin, Technical Manager / ADEUNIS RF



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Modules and Modems under R&TTE directive

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Why to choose Modems

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R&TTE Directive : Main characteristics

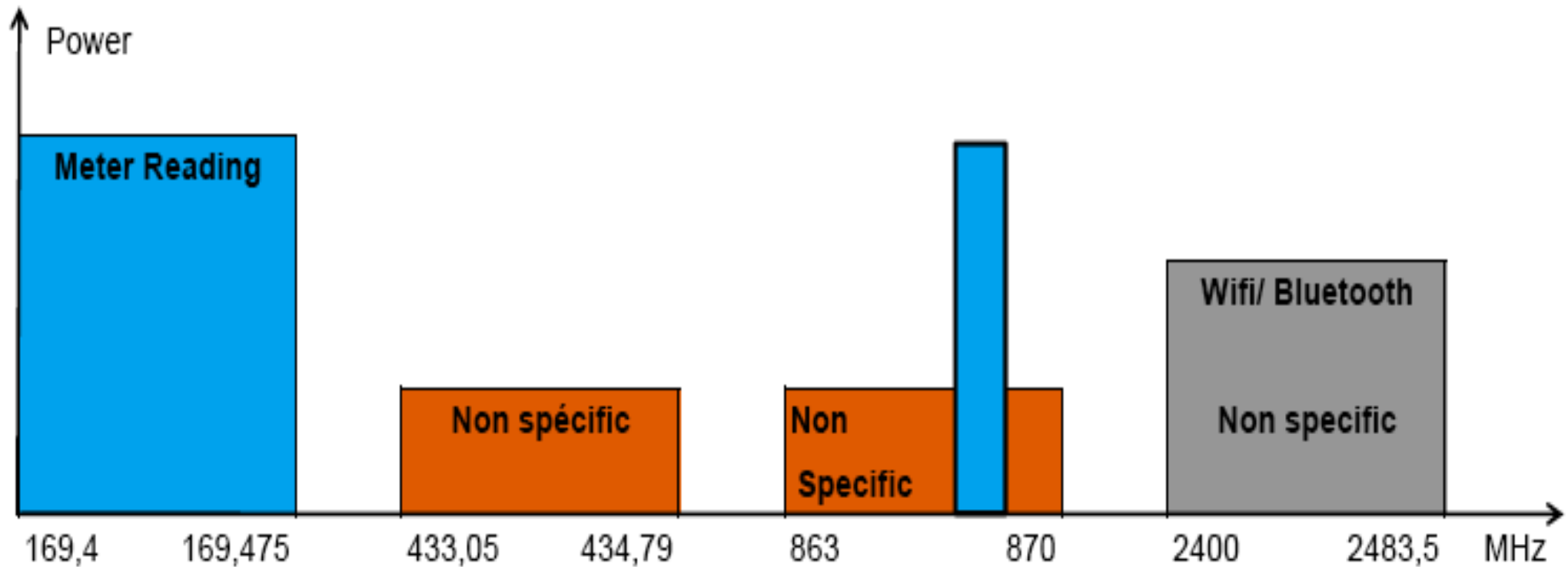
- ✓ European Directive 99/5/E
- ✓ This directive is applicable on all Adeunis RF MODEMS and End Products.
- ✓ It specifies normative requirements according to :
 - Radio (Efficace use of the spectrum)
 - EMC (EMC 2004/108/EC)
 - Electrical Safety (2006/95/EC)
 - Health (1999/519/EC)

R&TTE Directive : Main characteristics

- ✓ The R & TTE Directive doesn't control equipment before the placing on the market. It is the responsibility of the manufacturer (or his representative) to demonstrate the compliance of this equipment in case of control afterwards.
- ✓ Today, controls are becoming more important. Market supervision is organised by administrations of European countries.
- ✓ Each finished product must have a CE marking and a its own Declaration of Conformity.
- ✓ Conformity to R&TTE Directive shall be demonstrated by compliance to harmonized standards based on « harmonized » frequencies

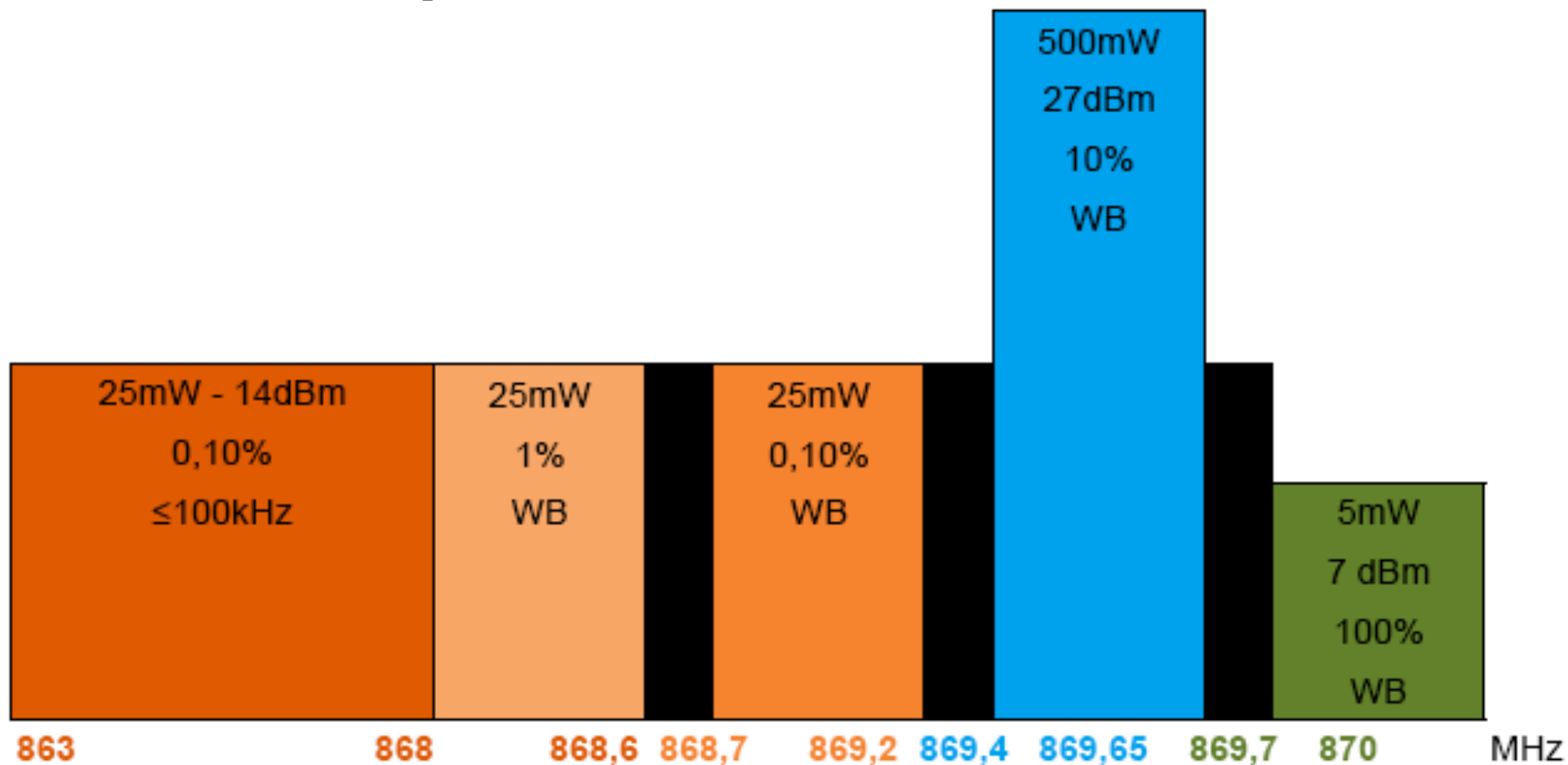
European Frequency Bands

- ✓ Overview : 4 main data bands.



European Frequency Bands

- ✓ 863-870MHz : simplified view & main characteristics



Harmonized Standards

Frequency Band	Item according R&TTE Directive	Harmonized standard
169,4 – 169,475MHz 433,05 - 434,79 MHz 863-870 MHz	Radio EMC Electrical Safety Health	EN300220-1 & 2 (Main STANDARD V2.3.1 &/or V2.4.1) EN 301489-1 & 3 EN60950-1 EN62311 or EN 50371 (62479)
2400 -2483,5 MHz	Radio EMC Electrical Safety Health	EN300440 or EN300328 CEM : EN 301489-1 & 3 EN60950-1 EN62311 or EN 50371(62479)

CE marking : Modems vs Modules

- ✓ CE marking is mandatory on all finished product & MODEM.
- ✓ CE marking is not mandatory for modules but POSSIBLE!

Adeunis RF has decided to apply a CE marking on these modules as a guarantee of quality and to simplify market access to its customers.

CE Marking : Module Integration

In case of module integration, the CE Marking and R&TTE directive apply to the end product (CE marking on the module is not sufficient). 3 cases must be taken into consideration :

Type of Integration	Radio	Health	EMC
Module with integrated or dedicated antenna incorporated according Adeunis RF recommendations	Spurious	No more	More restrictive EMC Standard applicacble
Module without antenna integrated according Adeunis RF recommendations	ERP (depends on the antenna) Spurious	Depend on the antenna	
Module modified during integration (Hardware and/or software)	All	All	All

CE marking : Different types of labels

Simple CE marking : product can be used everywhere in Europe without restrictions.

CE marking with statement of opinion of notify body (example 0081) :

- Necessary if the equipment (or application) is not well adapted to the standard.
- Choice of the manufacturer to demonstrate that the product perfectly fulfills all requirements regarding R&TTE Directive.



CE marking with Alert Sign.
This exclamation mark
Invites the user to see the
Restrictions of use
mentioned in the user guide.
Mainly employs in case
of non harmonized spectrum
In CE or licence requirement.

Example of CE marking
with statement of opinion
and alert sign.

Declaration of Conformity (DoC)

Each equipment (Module or Modem) with CE marking under R&TTE must have its own DoC.

TWIMO REGULATORY CONSIDERATIONS

Ready to Use" versions ARF7580AA & ARF 7581AA

DECLARATION OF CONFORMITY (CE0081)

We **ADEUNIS RF**
283 rue LOUIS NEEL
38920 CROLLES FRANCE

DoC Example :

declare under our own responsibility that the TWIMO modules ARF7580AA&ARF7581AA to which this declaration refers conforms with the relevant standards or other standardising documents:

- EN 300 220-2 (v2.1.2) (2007-06)
- EN 300 220-2 (V2.3.1) (2010-02)
- EN 60950-1 (2001) + A11 (2004)
- EN50371 (2002) / EN62311 (2008) / EN50385 (2008)
- EN301 489-1 (v1.8.1) (2008-04)
- EN 301 489-3 (v1.4.1) (2002-08)
- EN 62311 (2008)

According to the RTTE Directive 99/5/EC

Notes:

- Conformity has been evaluated according to the procedure described in Annex IV of the RTTE directive (Statement of opinion from a notify body N°102158-604317-1/2)
- Conformity has been evaluated with ARF7580AA module integrated on ADEUNIS RF TWIMO Starter Kit ARF7659B and with ARF7581AA module integrated on ADEUNIS RF TWIMO Starter Kit ARF7659C.
- According to the 1999/519/EC «RF signal» recommendations, a minimum distance of 10cm between the product and the body is required.
- Receiver class (if applicable): 2

R&TTE Directive : New Approach

- ✓ A new version of the R&TTE directive will be soon available.
- ✓ Alert Sign (!) is not sufficiently understandable by the users and will be replaced by a specific text on the package.
- ✓ Notification to UE countries will be done by notify bodies.

Why to choose Modules

- ✓ Reasons to choose « OEM Modules »
 - Not enough quantities to assume Full Design
 - RF design is improved
 - Flexibility (range, versions...)
 - Modules are fully certified
 - Manufacturer has application knowledge
 - Integration technical support
 - Modules are delivered fully tested



Why to choose Modems

- ✓ Reasons to choose « End products »
 - Not enough quantities to assume any Design
 - Need to have immediate use
 - Improved mechanic
 - Flexibility (range, versions...)
 - End products are also fully certified
 - Manufacturer has application knowledge



ADEUNIS RF Customized Solutions

- ✓ STEP 1 : Specifications
- ✓ STEP 2 : Hardware, Software & Mechanical design
- ✓ **STEP 3 : Certification**
- ✓ STEP 4 : Production
- ✓ STEP 5 : Lifetime



Our Strong points ?



- ✓ Always using « best & last » technology
 - No contract with any Silicon manufacturer !
- ✓ Best range because of best radiated sensitivity (versus EMC immunity)
- ✓ Always standard compliant (ETSI, FCC references...)
- ✓ 20 years of applicative knowledge over wide ranges of products.



Contact

Pascal Saguin / ADEUNIS RF

06 43 78 76 85

p.saguin@adeunis-rf.com