

DAB+ Repeater Overview

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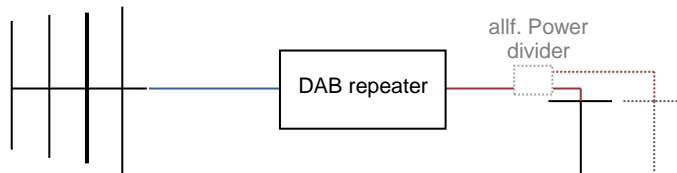
1. Configurations and versions

With the modular system of our device family, we can basically cover the complete range of applications from very simple to very extensive and complex DAB repeater systems.

1.1 Master or Secondary Configuration

We distinguish primarily between:

- Repeater devices for reception and transmission with one device.



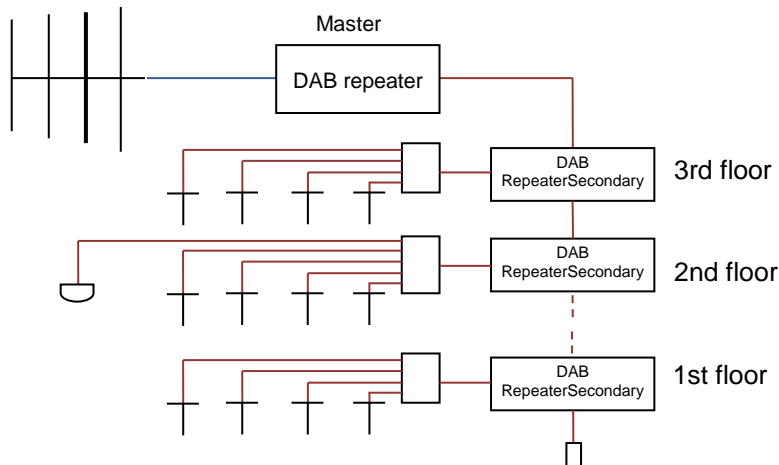
Outdoor receiving antenna

One or more transmitting antennas in the rooms

The transmitting antennas are connected to the repeater directly or via a distributor.

- Repeater units with distribution in more complex buildings with any number of floors or parts of buildings.

Here, a master repeater and various secondary (also "slave") devices are used (for signal processing).



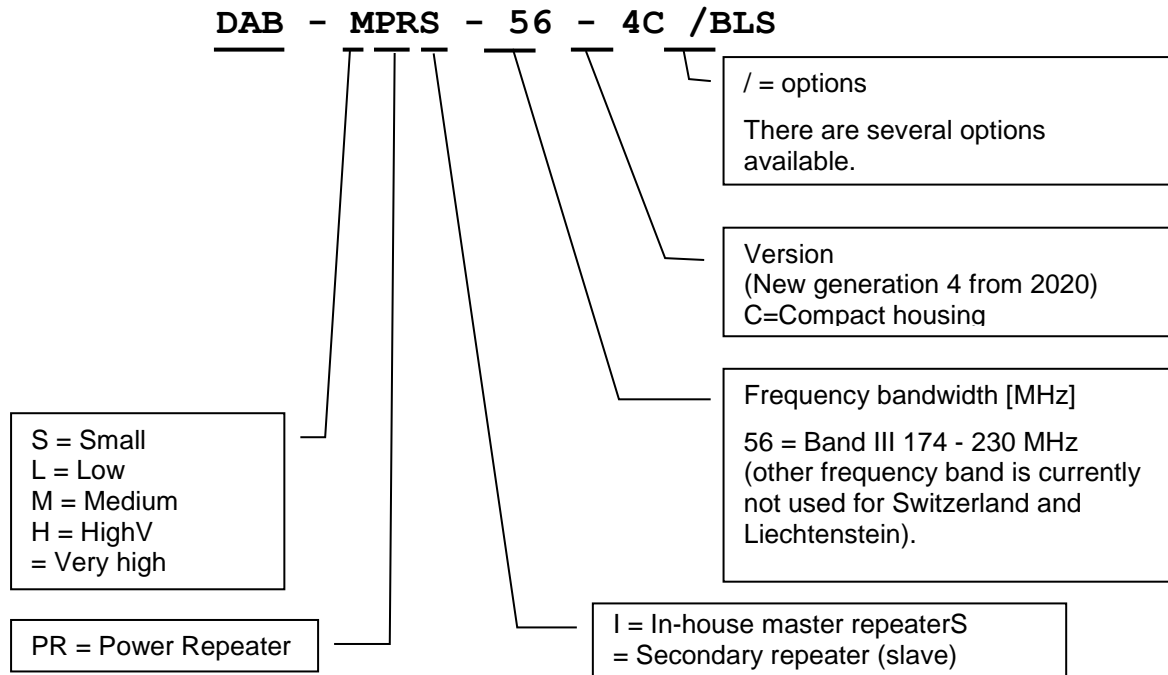
In places where a leaking **cable** or radiating cable is available, the signal from the repeater can also be coupled in and broadcast in this way.

The unit identification shows this function with the fourth letter as follows:

xyzI = Indoor Repeater or xyzS = Secondary (or Slave)

Example: MPRS = Mid-Power Repeater-Secondary

1.2 Type designation:



1.3 Performance categories:

A wide range of power classes is available for virtually all applications.

Power class	Typ. max. power with two sine waves (CS)*. [dBm]	Typ. max. power per DAB block / Ensemble** 3xCOFDM [dBm]	Comments
SPRI Small-Power	0.0	-5.1 Total output	Intended for consumer use. Total power limited ex works. Follows with NT-3003 (not yet on offer)
LPRI / LPRS Low-Power	+4.0	-4.0	Ideal for smaller areas, e.g. sales array in shops. Usually suitable for 1-2 indoor antennas.
MPRI / MPRS Mid-Power	+ 14.0	+6.0	Ideal for feeding medium-large areas. Usually suitable for 2-20 indoor antennas.
HPRI / HPRS High-Power	+ 24.0	+16.0	Ideal for large areas. Usually suitable for 18-150 indoor antennas, dome antennas or slotted cables.
VPRI Very High-Power	+ 31.0	+23.0	Ideal for very large areas with transmission via slotted cable or with distribution via many domes or individual antennas. This unit is currently only available in the secondary configuration. The unit is in the final stages of development (not yet available) .

* This power indication (CS, continuous sine) corresponds to the maximum power at which the IM limits of the OFCOM specifications are complied with.

** This figure assumes three DAB ensembles with sufficiently good reception at the receiving antenna. This value serves as a basis for planning. If more or fewer DAB ensembles are transmitted, the value increases or decreases accordingly.

1.4 Housing and connections

We currently have the repeater units available in the following housing versions. In addition, special versions and variants of the technical functions are possible:

1.4.1 Compact housing for LPRI and MPRI



MPRI Compact



Compact and relatively small housing for repeaters with external power supply.

1.4.2 Standard enclosures for HPRI / HPRS and special applications



HPRI



⌞ HPRI Standard (Master) Repeater
⌘ Secondary ("Slave") Repeater

Compact housing with external power supply unit.



VPRI



⌞ Standard (Master) Repeater VPRS
⌘ VPRS Repeater (additionally with heat sink, without fan)

A special wall-mounted housing is in preparation for weatherproof outdoor installations.

1.4.3 Table-top housing for SPRI



SPRI

SPRI (Small Power for Home and Semi-Pro Applications).
Compact unit with built-in transmitting antenna (screw-on). The unit is only designed for the integrated transmitting antenna and therefore has no connection for further transmitting antennas. Power is supplied via an external USB power supply unit. This product is in preparation and therefore not yet available.

(The picture on the left shows the antenna shortened.

(The picture on the right shows the antenna shortened; it is actually 290 cm long).



1.5 Transmitting antennas

The following options are available:

Magnetic base antenna



These antennas are small and inexpensive. They require a metal surface. For this purpose, e.g. a metallic electrical duct or a metal plate can be used.

(Picture: Sumatronic "DAB GP metal plate indoor", Art No.: 5438, white, black or RAL).

Dome antenna



Ideal for low room heights, e.g. in multi-level car parks. The dome has a height of only 7 cm. This new antenna has an almost round emission at the side and hardly reflects any power if there is metal underneath (e.g. car roof). However, it requires - considerably more transmitting power than the antennas above.

Slotted cable



Slotted cable systems can spread the DAB signal over larger areas. They usually require a lot of installation work, but make sense for large systems for reasons of cost and efficiency. Because of the large outcoupling damping function, a very powerful repeater device is required.

1.5.1 Accessories for transmitting antennas

Selection from the wide range:



Power splitter



Coupler/Splitter DAB/UKW and LTE



Attenuator / Z-Converter



We can also supply you with cables (pre-assembled with connectors to the required length on request), as well as mechanical components such as brackets... or solutions for special applications.



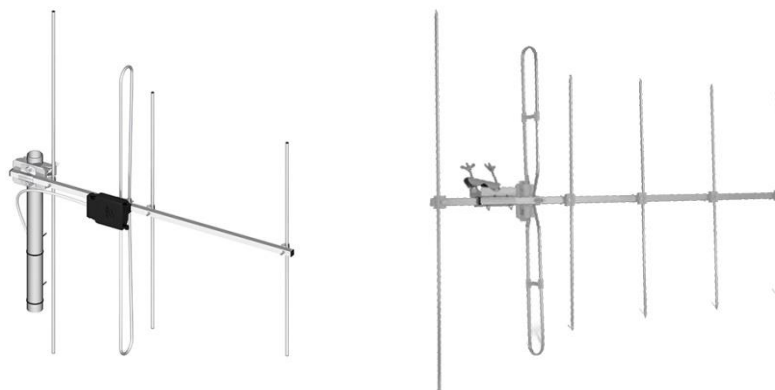
1.6 Receiving antennas

For demanding, professional applications we recommend the Rhiicom antenna:

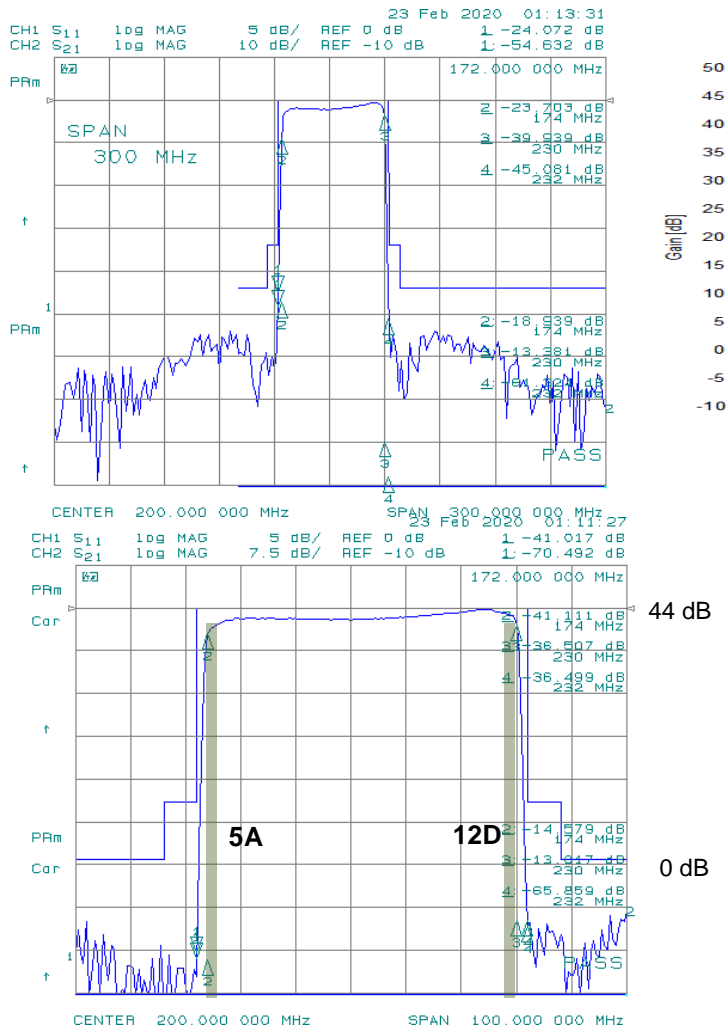
WIPIC FWS 301 12 19 DAB, vertical, 50 Ω version, 4-element Yagi

For tight reception conditions, Rhiicom also offers larger antennas with more gain.

For other applications, various antennas from the consumer sector are available. These can be manually upgraded as required for corrosion and moisture protection.



Typical repeater system total gain (at standard level)



The product is manufactured in Switzerland and meets the legal SWISS MADE requirements.



OFCOM Swiss Technical Standard

Standard for low power DAB/DAB+ in-house repeaters, OFCOM NT-3003 V1.1.0

The standard can be downloaded at:



Manufacturer:

SUMATRONIC

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