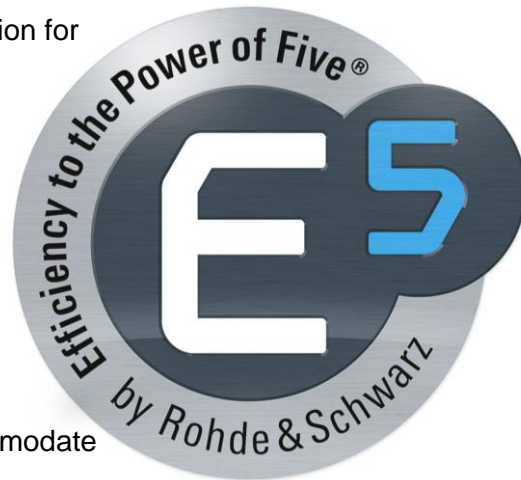


# E<sup>5</sup> - Efficiency to the Power of Five

## R&S<sup>®</sup>Tx9 generation with efficiency on five levels

- I **Efficiency in energy**  
Economical: minimum power consumption for cost savings over the system lifetime
- I **Efficiency in space**  
Space-saving: several transmitters and additional components in one rack
- I **Efficiency in operation**  
Smooth: installation, operation and maintenance
- I **Efficiency in configuration**  
Customer-focused: modular solutions for flexible system configuration
- I **Efficiency for a lifetime**  
Future-ready: can be expanded to accommodate new standards and technologies



## R&S<sup>®</sup>TMV9 – Main features

- I **New family of air-cooled VHF medium power transmitters**
- I **350 W to 4.3 kW COFDM output power per rack**
- I **Multi-Standard**
  - I DAB, DAB+, T-DMB
  - I DVB-T, DVB-T2, ATSC, ATSC MDTV, ISDB-T<sub>(E)</sub>, DTMB
  - I ATV



## Doherty technology

- I Highest power efficiency on the market
- I Outstanding power efficiency reduces energy costs by more than 40%

### COFDM-TV and DAB:

- I UHF: efficiency in normal mode of 25%
- I UHF: enhanced efficiency in Doherty mode of up to 38%
- I VHF: efficiency in normal mode of 33%
- I VHF: enhanced efficiency in Doherty mode of up to 46%

### ATSC:

- I UHF: efficiency in normal mode of up to 30%
- I UHF: enhanced efficiency in Doherty mode of up to 42%
- I VHF: efficiency in normal mode of up to 41%
- I VHF: enhanced efficiency in Doherty mode of up to 50%



## VHF power amplifier R&S®PMV901 General

- I 750 W output power
- I 4 final stage transistors
- I Enhanced efficiency mode Doherty (option)
  
- I Power supply 3 kW, passively cooled
- I Optionally 2nd power supply for 1+1 PS redundancy
  
- I 2 Blowers
- I Dust filter (optional)
  
- I Harmonic filter included
- I Lightning protection included



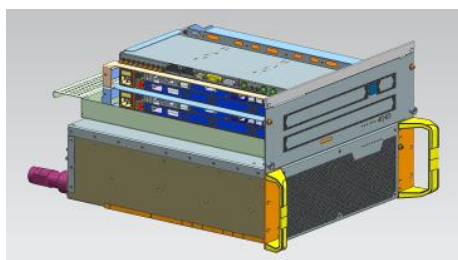
## Example for saving of energy costs TMV9

- I Transmitter with output power: 1.45 kW
- I Lifetime of transmitter: 10 years
- I Assumed energy price: 1,23 Kr/kWh

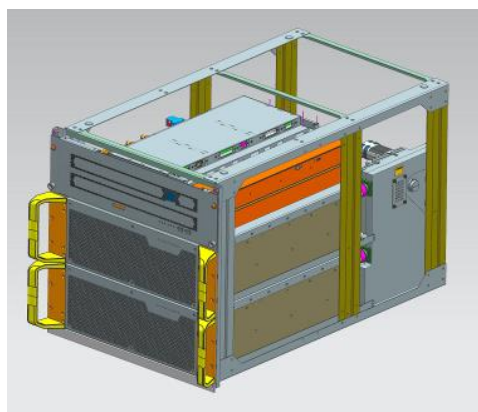
	Average transmitter	R&S®TMV9 with Doherty
Efficiency	20 %	46 %
Energy costs	614 180 Kr	323 244 Kr
<b>Saved energy costs in 10 years:</b>		<b>291 000 Kr</b>

- I Energy cost savings of more than 50%

## Option for integration in 3<sup>rd</sup> party racks for systems with one and two PAs



**R&S®TMU9/TMV9, 1 PA  
system w/o rack**



**R&S®TMU9, 2 PAs  
system w/o rack**

**Simple and quick to install solution for customers with no need for a rack**

(Guiding rails and mounting material not provided)