

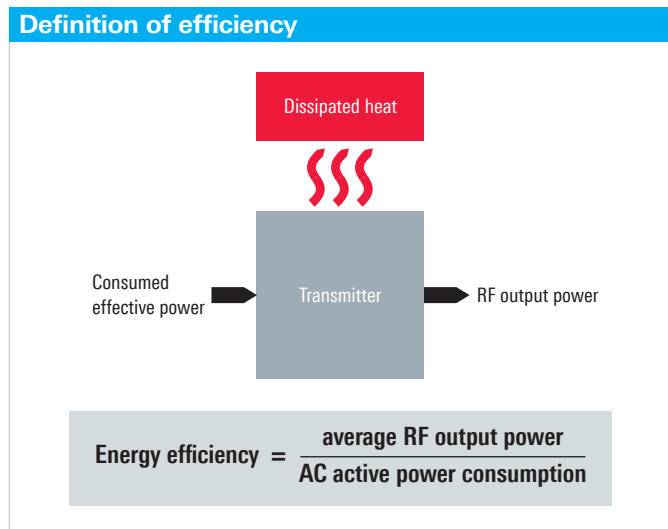
6 Questions you need to ask before you purchase a new solid-state FM transmitter

1

How is energy efficiency measured?

Every transmitter manufacturer has a method for calculating energy efficiency. As a result, it can be difficult to get a true apples-to-apples comparison. At Rohde & Schwarz, our efficiency formula is straightforward: average RF output power divided by AC active power consumption including the power required to operate all ancillary equipment (i.e. heat pumps, heat exchangers, and harmonic filters). Our efficiency ratings take the total transmission package into account. In contrast, some companies calculate efficiency by comparing DC-to-RF efficiency

at the circuit level, which negates a lot of components required for broadcast. Whatever transmitter you may consider, be sure you understand the formula.



2

How can I calculate true cost of ownership?

Amplifier technology is crucial when determining cost of ownership, especially for stations with high-power transmitters. Most transmitters operate at reduced output power to have some “headroom” – and conventional transmitters experience a significant reduction in efficiency at reduced power. Rohde & Schwarz amplifiers allow optimizing efficiency even at reduced power levels, and our software-based Efficiency Optimization tool adjusts several parameters to provide the maximum efficiency at the required power level. We also offer a wide range of power levels to make sure you get the right transmitter for your coverage area.

Total cost of ownership (TCO) is also affected by electrical power consumption, not just of the transmitter itself, but also power consumed by the site HVAC system. Liquid cooling provides significant reductions in electrical power usage as well as greatly reducing HVAC infrastructure and ongoing maintenance costs. In many cases, a transmitter with a smaller footprint can reduce space rental charges in shared transmitter sites. All factors that contribute to the true cost of ownership.

3

Will the transmitter I buy today be compatible with HD Radio tomorrow?

The R&S®THR9 with HD Radio™ Generation 4 is state of the art. It is the ideal solution for an eventual transition since it supports analog FM as well as the HD Radio™ hybrid standard, and is ready to accommodate future hybrid or digital transmission standards. The R&S®THR9 achieves substantially better crest factor reduction than 3rd-generation IBOC transmitters, maximizing energy efficiency and increasing HD Radio™ output power.

For customers, this means safety of investment and low cost of ownership, since you can switch from FM to HD Radio™ mode or subsequently increase the injection level using existing hardware.

In addition, the R&S®THR9 is the only HD Radio™ transmitter on the market that features field-tested, redundant liquid cooling. It needs no air-conditioned rooms to operate reliably, even in hot regions. This significantly reduces energy costs, completely eliminates a common cause of failure (air conditioning system failure) and minimizes service costs in comparison with air-cooled transmitters, since air conditioning systems require regular and frequent maintenance, which is not necessary for the R&S®THR9.

The IBOC signals are generated through the interaction of our integrated importer/exporter, engine and the TCE900. The R&S®THR9 system design ensures that the analog signal components are transmitted, even in the event of a failure of the digital signal path.

4

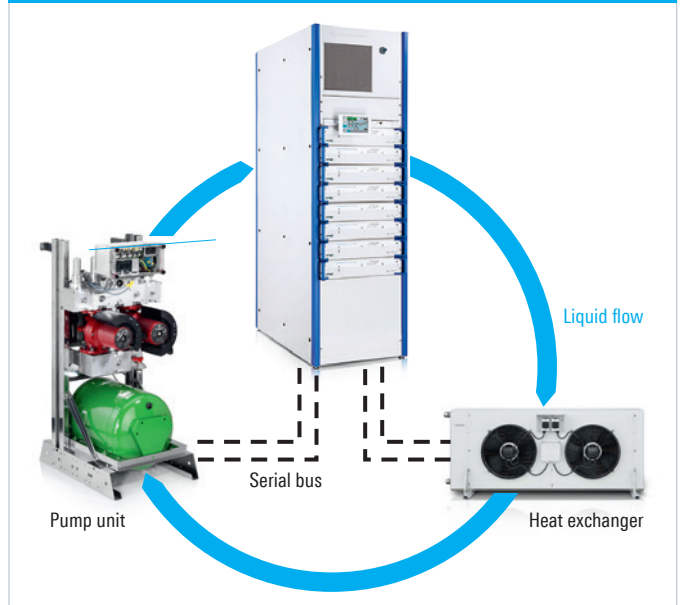
How should my station evaluate a reliable liquid cooled transmitter?

Liquid cooled, solid-state architecture offers a number of advantages. It allows for higher power density and more efficient operation that requires less maintenance. Plus, the transmitter itself is extremely quiet and generates a minimal heat load into the room, which means you won't have to spend a fortune on air conditioning (or maintaining the AC unit). Air-cooled components (i.e. power supplies, combiner, etc.) in the transmitters consume more power than liquid cooled transmitters with the same TPO, which translates to higher annual energy costs. Bonus: The liquid cooled transmitters have better power efficiency.

Rohde&Schwarz has installed more than 10,000 liquid cooled systems. Our R&S®THR9 Liquid Cooled Transmitters have a highly efficient design, with three power supplies for redundancy and no interconnecting hoses or cables. It's a closed cooling circuit – all critical components are protected from external influences like dust and humidity. That means no blocked air filters or icing. There are only two hose connections in the transmitter, but the system provides a complete redundant cooling solution that removes the maximum amount of heat.

The Rohde&Schwarz factory has the capacity to sustain the elevated order load without cutting corners in testing or production quality. We have approximately 700,000 square feet of production space with more than 1,500 employees, and we manufacture 90% of components in house. This benefits your station with low lead times, scheduling flexibility, and the highest quality standard. Plus, you'll have maximum parts availability even after product phase out.

Efficient liquid cooling system



5

Who will handle the installation?

Rohde & Schwarz offers two options - you can install it yourself with our complete installation guides & materials and world class technical support or have us do it! Rohde & Schwarz offers a turnkey solution for stations that are facing a transmitter upgrade with limited personnel and resources. We partner with Dermac Group and dozens of trained and certified contractors to support our installation services. The Rohde & Schwarz Project Management provides comprehensive, end-to-end project management and full documentation for FCC requirements.

We can do it all - a Rohde & Schwarz Support Engineer will provide a scope of work (SOW) that accounts for contingencies to eliminate customer risk and install equipment, decommission old equipment and dispose of hazardous materials, and even coordinate efforts with other contractors, when necessary. Rohde & Schwarz will keep your upgrade on track, maximize your budget and make your life easier.



The R&S®THR9 transmitter

6

What support level can I expect from the manufacturer?

Rohde & Schwarz understands that purchasing a new transmitter is a long-term investment in technology with the prospect that it will be in service for at least a decade, and that it will be directly responsible for creating your company's revenue. Over that time, you'll need training, spare parts, and services, so you need to consider the reliability and stability of your equipment supplier. Rohde & Schwarz offers the stability and services needed to accompany and secure your investment.

Rohde & Schwarz has been a privately owned company for more than 80 years, and more than 10,500 employees worldwide. Our first FM transmitter, the first FM transmitter in Germany, went on the air in 1949. We are among the technology and market leaders in a number of business fields, and with more than 3,000 highly trained manufacturing experts, we have complete control over product quality and capacity. Rohde & Schwarz has built our reputation on exacting standards and excellent customer service, and with more than 500 employees on our North American team, we'll be here to provide all the support you need for as long as you'll need it.



Regional contact

- Europe, Africa, Middle East | +49 89 4129 12345
customersupport@rohde-schwarz.com
- North America | 1 888 TEST RSA (1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
- Latin America | +1 410 910 79 88
customersupport.la@rohde-schwarz.com
- Asia Pacific | +65 65 13 04 88
customersupport.asia@rohde-schwarz.com
- China | +86 800 810 82 28 | +86 400 650 58 96
customersupport.china@rohde-schwarz.com