



## NXP low-IF analog car radio tuners TEF662x

# Easy-to-use, cost-effective tuners for analog car radios

Building on the success of NXP's TEF660x and TEF661x families, the TEF662x uses a low-IF architecture to ensure high integration with low complexity. The result is easy design-in and best-in-class price/performance ratios.

### Key features

- ▶ Highly integrated tuners with low-IF conversion
- ▶ PLL synthesizer with integrated VCO
- ▶ Integrated AM LNA with AGC and RF selectivity (TEF6623 is FM-only)
- ▶ Integrated FM LNA with AGC
- ▶ Stereo decoder with output for interfacing with external analog or digital audio processor
- ▶ Advanced weak signal processing (soft mute, stereo blend, high cut control)
- ▶ PACS
- ▶ FM noise blanker
- ▶ Signal quality detection
- ▶ I<sup>2</sup>C-bus control
- ▶ RDS demodulator (TEF6623 & 24 only)
- ▶ Single 8.5 V supply
- ▶ SO32 package
- ▶ Very low external component count
- ▶ Allows for fast software development because of integrated radio knowledge and easy interface
- ▶ Very good strong signal behavior

### Key applications

- ▶ Aftermarket car radios
- ▶ Consumer radio

These tuners integrate all the critical RF components, so they're easy to design onto the main radio board. There's no need for a tuner module, and no alignments are required.

The performance, feature set, and quality of the TEF662x family are optimized to enable complementary pricing and product positioning for the cost-sensitive aftermarket car radio and consumer segments. All the devices in the family are software- and hardware- (pin-to-pin and application) compatible with each other as well with devices from the TEF660x and TEF661x families. This allows a single reference tuner design to address a range of requirements.

### Low-IF architecture

Many existing solutions require double IF (intermediate frequency) conversion. NXP's low-IF architecture eliminates the 10.7 MHz and 450 kHz IF transformer coils and ceramics,

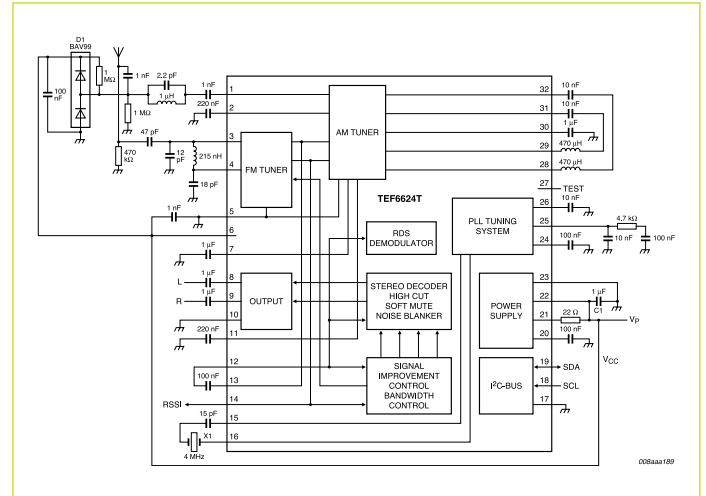


The low-IF architecture simplifies PCB layout, since there aren't any critical high-frequency lines and there's no need for alignments. Even designers with limited RF know-how

## TEF662x block and low-cost application diagram

Conventional Tuner Module

Tiger main board application



Type number		TEF6621	TEF6623	TEF6624
System	Power supply	8.5 V	8.5 V	8.5 V
	Output	L/R, MPX	L/R, MPX, RDS	L/R, MPX, RDS
	PACS	-	•	•
R(B)DS	Demodulator / decoder	-/-	• / -	• / -
FM	Japan / EU / US bands	•	•	•
	OIRT	-	•	•
	NB	•	•	•
	Stereo decoder	•	•	•
	Weak signal handling	•	•	•
AM	LW / MW	•	-	•
	SW	-	-	-
	Weak signal handling	•	-	•
General	Package	SO32	SO32	SO32
	T <sub>amb</sub>	-20 to 85 °C	-20 to 85 °C	-20 to 85 °C
	Automotive	No	No	No
	Product release	Available	Available	Available