

# STRADA770M

## 76-81 GHz transceiver for automotive radar applications



### Single-chip RF transceiver with MIPI D-PHY/CSI-2 digital output interface for ADAS radar applications

Millimeter-wavelength RF sensors are key elements in crash avoidance systems, helping to dramatically improve driving safety when incorporated in advanced driving assistance systems. They are essential components in the fully autonomous self-driving car. Adaptive Cruise Control, Emergency Braking System, Blind Spot Detection are only a few of the applications where the STRADA770M MMIC transceiver can be used. The integration of a 3-channel transmitter together with a 4-channel receiver and a FMCW modulator, significantly reduces the integration effort and guarantees high performance in both short and long-range radar applications.

#### KEY FEATURES

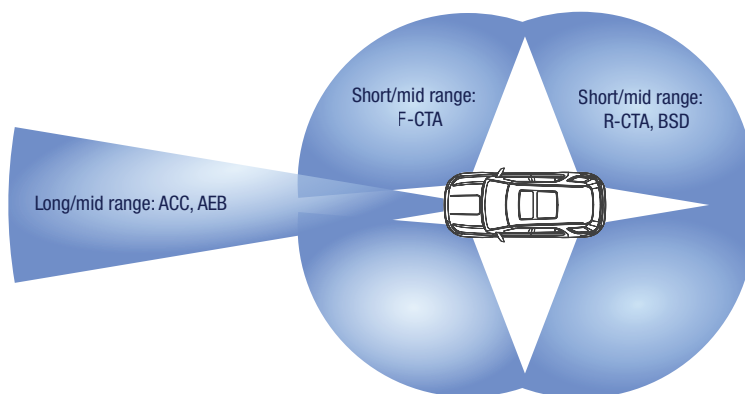
- Fully-programmable chirps sequencer with multi-profiles support
- Fully-programmable FMCW chirp modulator
- Three-channels transmitter
- Four-channels receiver
- Digital per-TX-channel power control
- Binary per-TX-channel phase control
- Digital per-RX-channel conversion gain control
- Per-RX-channel programmable HP and LP filters
- 40/50 MHz 12-bits ADCs
- Configurable SPI/I2C slave interface
- MIPI D-PHY/CSI-2 digital output master interface
- Support for cascaded (master/slave) configurations

- ISO26262 ASIL-B support
- AEC-Q100 Grade 2 qualified

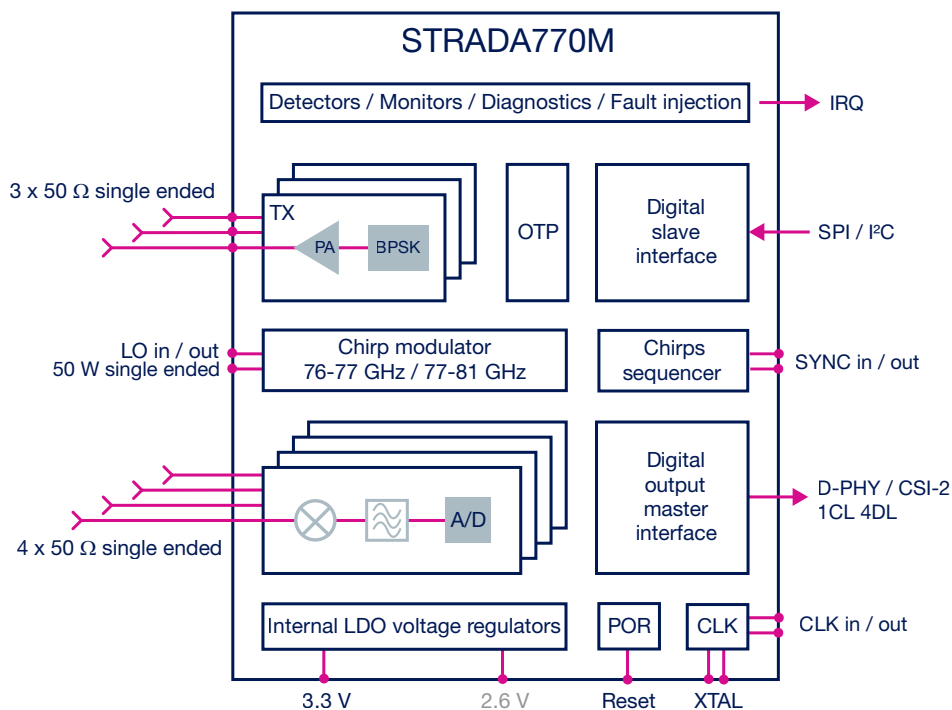
#### KEY APPLICATIONS

- ACC (Adaptive Cruise Control)
- AEB (Autonomous Emergency Braking)
- BSD (Blind Spot Detection)
- CTA (Cross Traffic Alert)

## RADAR RANGE



## BLOCK DIAGRAM



## TYPICAL DEVICE PERFORMANCE

### RX performance

Max Conversion Gain	75 dB
Noise Figure	13 dB
VGA gain step	3 dB
P1dB	-7 dBm
F3dB (Programmable low pass corner frequency)	5/10 MHz

### FMCW modulator

Narrow Band Frequency	76 - 77 GHz
Wide Band Frequency	77 - 81 GHz
Phase Noise @ 1 MHz	-95 dBc/Hz
Chirp Integral non Linearity	0.5%

### TX performance

Power output	13 dBm
BPSK	0° - 180°

