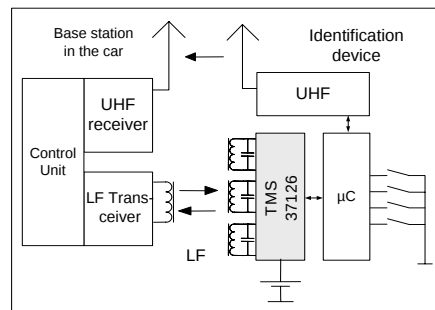


## Remote Access Identification Device IC TMS37126

The Remote Access Identification Device (RAID) IC combines 3 functions in one device:

- 3D Analog Front End (3D AFE)
- Proven TI DST+ transponder
- Sophisticated power management

The RAID has an SPI interface to connect it to an external microcontroller, ideally suited for Passive Entry applications. The 3D AFE is an improved version of the TMS37122/127 devices, and offers high sensitivity to receive LF signals between 120 kHz and 140kHz and has several other features, such as RSSI measurement and bi-directional LF signalling.



The embedded transponder offers a high level of security through its encryption, mutual authentication and after-theft diagnosis features. It operates without battery and can be accessed in terms of its memory and encryption through the SPI interface. The power management features, in addition to battery charge/check, a battery backup function that allows operation of all functions (including the microcontroller) with low or even no battery. The energy in this case is generated by the LF field.

### Specifications:

| Part Number                                                                                                                                                                     | RI-TMS37126                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Features                                                                                                                                                                        | 3D Analog Front End with LF bi-directional signaling; RSSI output current; battery back-up and battery charge functions; compatible with TI's Digital Signature Transponder (DST). |
| Supply Voltage ( V <sub>batt</sub> )                                                                                                                                            | 1.8 V to 3.6 V                                                                                                                                                                     |
| 3D Analog Front End:                                                                                                                                                            |                                                                                                                                                                                    |
| Operating Frequency                                                                                                                                                             | 120 kHz to 140 kHz                                                                                                                                                                 |
| Quiescent Current                                                                                                                                                               | 1.4 µA (typ.)                                                                                                                                                                      |
| Standby Current                                                                                                                                                                 | 5.3 µA (typ., 3 ant. active); 4.0 µA (typ., 2 ant. active); 2.7 µA (typ., 1 ant. active)                                                                                           |
| Active Current                                                                                                                                                                  | 28µA (typ.)                                                                                                                                                                        |
| Maximum Antenna Sensitivity                                                                                                                                                     | 4.5 mVpp to 6.0 mVpp; 4.9 mVpp (typ.)                                                                                                                                              |
| Data Rate                                                                                                                                                                       | 4 kbit/s max.                                                                                                                                                                      |
| Wake Pattern Length                                                                                                                                                             | 4-bit / 8-bit / 16-bit                                                                                                                                                             |
| Sensitivity Adjustment                                                                                                                                                          | Ant1 / Ant2 / Ant3                                                                                                                                                                 |
| Wake / Re-Wake Time                                                                                                                                                             | 2 ms                                                                                                                                                                               |
| Transponder Transmission Principle                                                                                                                                              | HDX (Half Duplex), FDX ( Full Duplex using Amplitude Modulation)                                                                                                                   |
| Operating Frequency                                                                                                                                                             | 134.2 kHz, 125 kHz                                                                                                                                                                 |
| Security                                                                                                                                                                        | TI Challenge / Response; Mutual Authentication; Secure Issuer Access Mode                                                                                                          |
| EEPROM Memory                                                                                                                                                                   | 91-bytes (lockable) for User data, 66 bytes for Encryption Keys, serial#, configuration                                                                                            |
| Operating Temperature                                                                                                                                                           | -40°C to +85°C                                                                                                                                                                     |
| Package                                                                                                                                                                         | 30 Pin TSSOP DBT                                                                                                                                                                   |
| For more information, contact the sales office or distributor nearest you.<br>The contact information can be found: <a href="http://www.ti.rfid.com">http://www.ti.rfid.com</a> |                                                                                                                                                                                    |

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