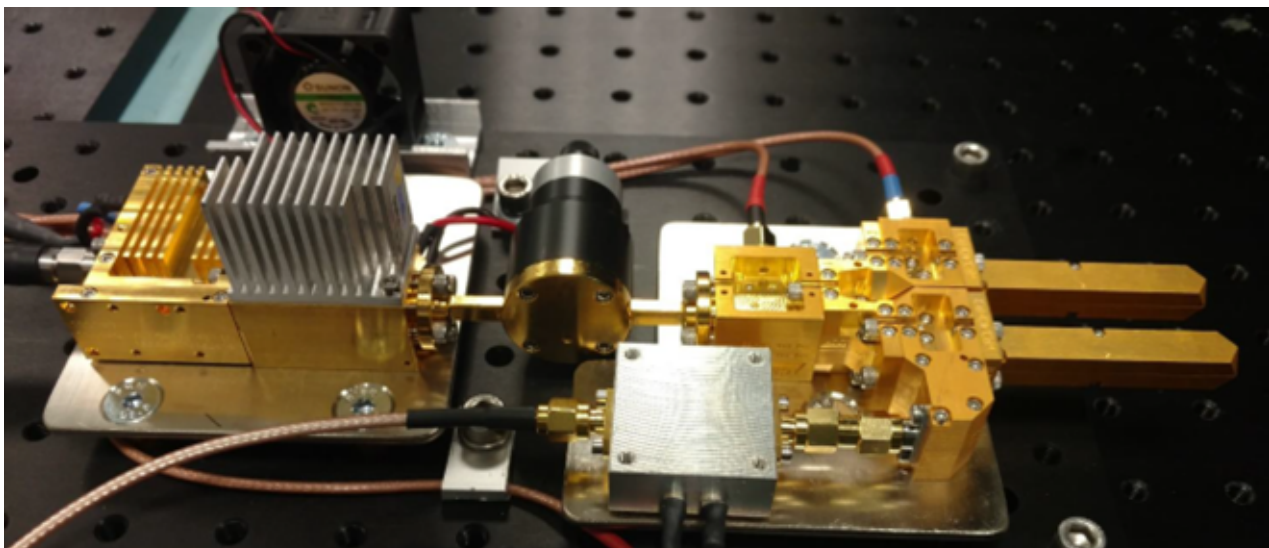


300 GHz Transceiver Type 1310A

Product Description

ACST 300 GHz transceiver for FMCW radar is designed and manufactured as a bench top unit. It takes an input signal at 11.45 GHz to 13.12 GHz to reach 275 to 315 GHz for the Tx and LO power at 137.5-157.5 GHz for the Rx. A dedicated directional coupler is used to separate the transmitter and receiver LO paths. The typical transmitting power is +13 dBm and 8.5 dB DSB noise figure receiver performance. The transceiver assembly is fixed tuned and does not require any adjustment for proper operation. A dedicated power supply is included.



Additional options can be implemented on customer request i. e. TTL modulation port, customized IF-band, horn antennas, different multiplication factor of the AMC, etc.

Application Areas

- True Ranging Radar Systems
- 300 GHz CW power source
- 300 GHz heterodyne receiver

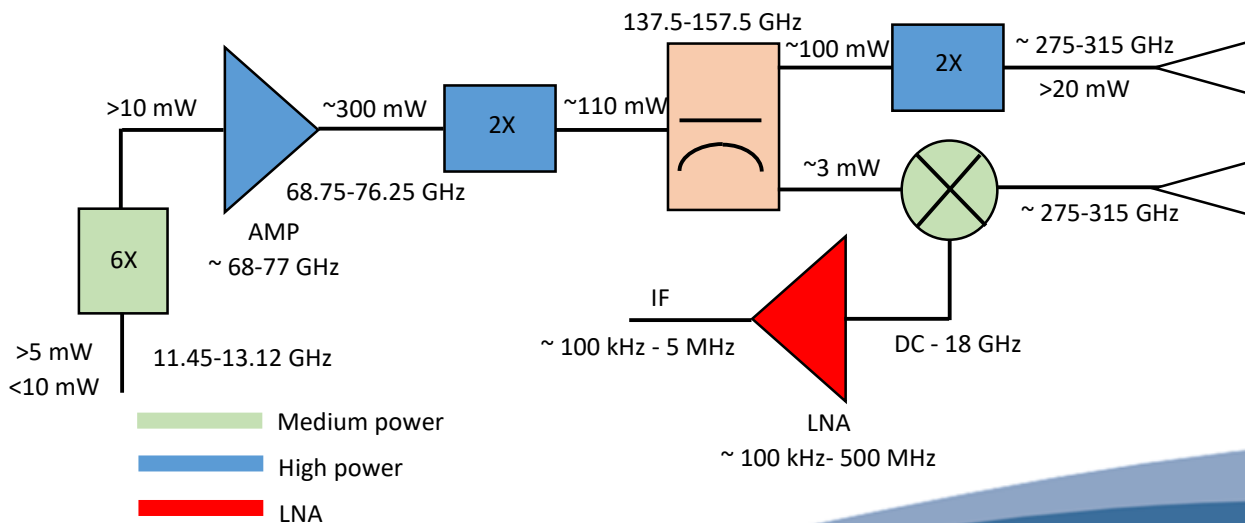
Product Features

- 275 to 315 GHz Operation
- Broad FM Bandwidth
- High power
- Low noise

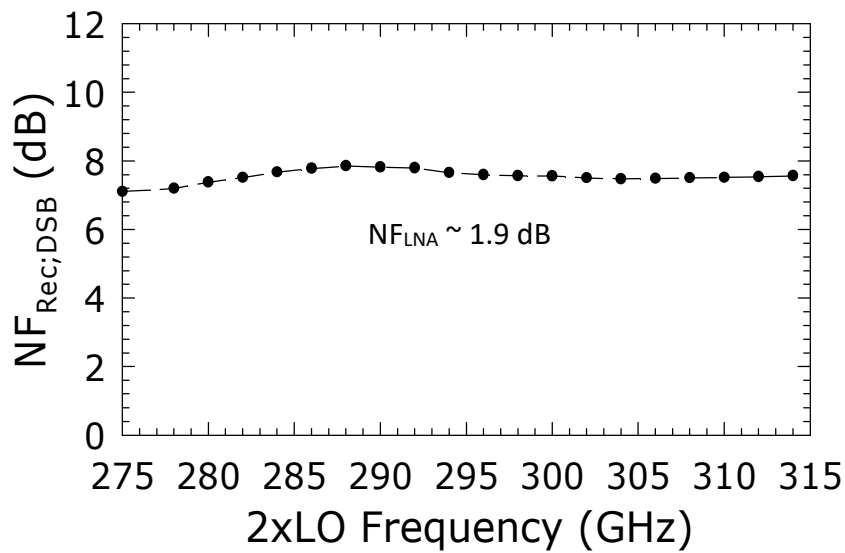
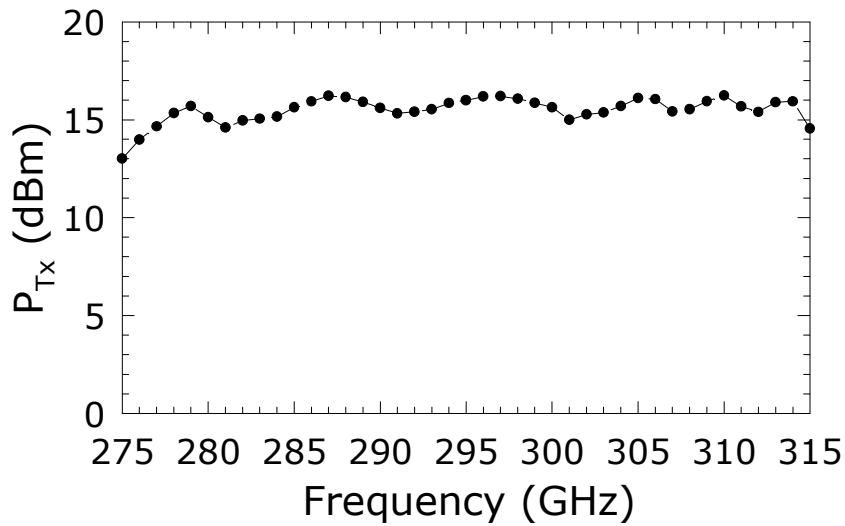
Tab. 1: Technical Specifications

| Technical Specifications | Minimum | Typ. | Maximum |
|--------------------------|---------|----------------------|---------|
| Input port | | K-type (F) connector | |
| Input Power (mW) | | 5 | 10 |
| Input Freq. Signal (GHz) | 11.45 | | 13.125 |
| Output Tx Port | | WR-3.4 | |
| Output Tx Power (mW) | 10 | 30 | 40 |
| Output Tx Freq. (GHz) | 275 | | 315 |
| Input Rx Port | | WR-3.4 | |
| Input Rx Power (mW) | | | 0.1 |
| Input Rx Freq. (GHz) | 275 | | 315 |
| Rx Noise Figure (dB) | 8 | 9 | 11 |
| Rx IF Output Port | | SMA (F) connector | |
| IF LNA Gain (dB) | 45 | 46 | |
| LNA Noise Figure (dB) | 1.8 | 1.9 | 2.0 |
| IF Output Freq. (MHz) | 0.01 | | 500 |

Block Diagramm



Typical Performance



Notes

- All plotted data represent typical values. The actual data may vary from unit to unit.
- All tests are carried out at a room temperature of 24 °C.

Caution

- Absolute maximum ratings should not be used under normal operating conditions. Exceeding maximum ratings may lead to permanent failure.
- Any foreign body inserted into the waveguide will cause a loss of performance and may damage the device.

ACST GmbH reserves the right to make changes to the product or information contained herein without notice.
Visit www.acst.de for additional data sheets and product information.

