TDMA Telemetry Modem

TDMA telemetry data link modem

The TDMA Telemetry Modem sets up air-to-air, air-to-ground and ground-to-air communication links in a TDMA (time division multiple access) scheme, with timeslots preassigned to each party. The modem consists of a transmitter subsystem for coding, modulation and RF transmission, a receiver subsystem for reception, demodulation and decoding, and a processor subsystem that runs the modem software. The processor subsystem gives the user a single client interface for configuring parameters, monitoring status and performance, running tests and built-in tests, and exchanging data.

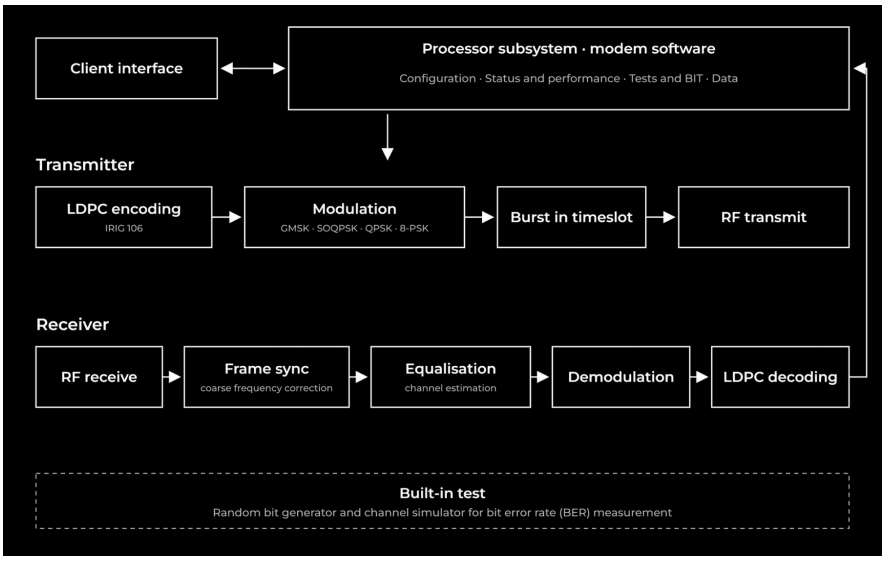


Figure 1. Transmitter, receiver and processor subsystems of the modem, with built-in test

AT A GLANCE

ACCESS METHOD
TDMA, preassigned timeslots

LINKS
Air-to-air, air-to-ground, ground-to-air

MODULATION
GMSK, SOQPSK, QPSK, 8-PSK

CHANNEL CODING
LDPC (IRIG 106)

TEST
Built-in BER measurement, built-in test (BIT)

APPLICATIONS

- Telemetry data link for flight testing
- Two-way data transfer between aircraft and ground station
- Time-division communication between multiple platforms

Key Features

- TDMA timeslot access
- Selectable modulation
- LDPC coding and channel equalisation
- Built-in test and BER measurement

Capabilities

TDMA timeslot access

Air-to-air, air-to-ground and ground-to-air links share the same channel in timeslots preassigned to each party. Each timeslot is transmitted as a burst of tail, training and user bits.

Selectable modulation

Supports GMSK, SOQPSK, QPSK and 8-PSK; the shaping filter, bandwidth and symbol rate are set for each modulation type.

LDPC coding and channel equalisation

Uses the LDPC coding of the IRIG 106 telemetry standard. The receiver recovers data in difficult channel conditions through frame synchronisation, coarse frequency correction, channel estimation and equalisation.

Built-in test and BER measurement

A built-in random bit generator and channel simulator measure the bit error rate (BER); performance tests and built-in tests are started and monitored from the client interface.

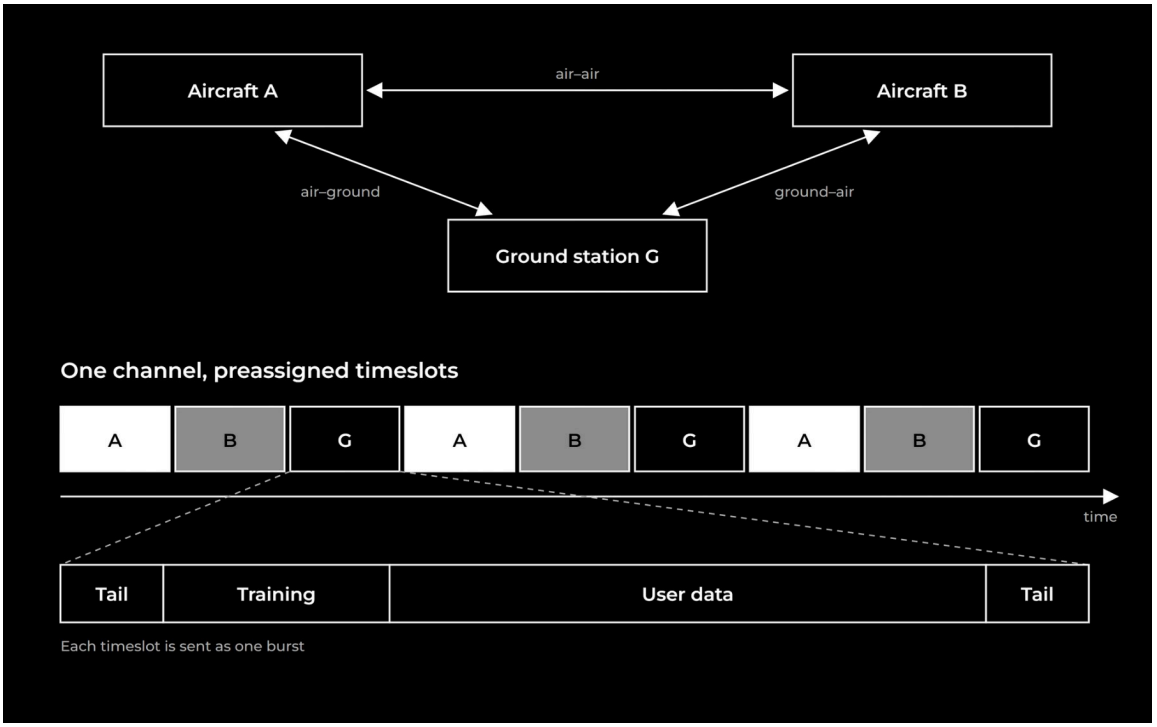


Figure 2. Air-to-air, air-to-ground and ground-to-air links share one channel in preassigned timeslots; each timeslot is sent as a burst

Specifications

General	
Access method	TDMA, preassigned timeslots
Links	Air-to-air, air-to-ground, ground-to-air
Modulation	GMSK, SOQPSK, QPSK, 8-PSK
Channel coding	LDPC (IRIG 106)
Test	Built-in BER measurement, built-in test (BIT)

Warranty

All hardware and software procured from Zeta is under warranty against manufacturing or design failures for 2 years. Customer-specific warranty terms may be arranged.

Disclaimer

Due to ongoing research and development, Zeta reserves the right to change product specifications without notice.

About Zeta

Zeta Defence develops electronic intelligence (ELINT) and communication intelligence (COMINT) equipment and radar / electronic warfare simulators. Its capabilities include RF transceiver system design, digital design and large-scale software development.

Contact

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