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Data acquisition conditioning transmission analysing

WIR LÖSEN MESSPROBLEME
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FTS GSCU/CCU/ - Flight Termination System Ground Station according to IRIG standard (Flyer)

TESTEM GmbH offers a high-tech flight termination system according to IRIG standard, consisting of ground station with remote control and fully programmable flight termination receiver/decoder (FTRD).

The ground station consists of two or three 19" rackmount units:

- The GSCU control unit includes a full colour touch panel display (option) and a computer interface.
- The CCU contains two flight termination encoders and two 3 W RF amplifiers as well as a fully redundant CAN control system.
- The HLV-XXX RF power amplifier option expands the 3 W RF output of the CCU up to 1 kW RF power for long distance applications.

General description:

The GSCU control unit is built in fully redundant version, it corresponds via two independent CAN links with the CCU ground station unit (distance up to 150 m). It generates four different tones according to IRIG standard for SAVE, ARM, TERMINATE and an additional user channel, the four tones may be sent separately or as any mixture out of it. An optional antenna switch allows to control RF output power at the ground station to conduct it via high power RF relays to up to eight transmitting antennas to cover overlapping up to 360° around the ground antenna station. As an option this may be controlled and automized by a GPS signal, received from the flight termination receiver.

There are two built in absolutely independent systems for full redundancy (master / slave), which control each other and switch automatically in case (also manually possible). With display option certain functions and control functions are visualized at the screen and may be controlled by the touch panel. The unit may be switched by key switch to remote control to be fully controlled by an external computer via RS 485 or RS 232. This option offers also the possibility to do remote maintenance or easy update to the system.

As a further option a "sniffer" receiver (FTRD according to the used flying FTRDs) may be integrated for use as a full loop control concerning the transmitted signals.

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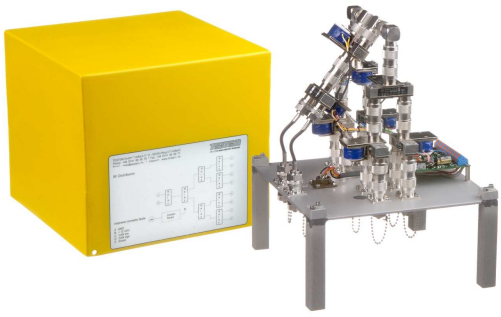
General features FTS GSCU including options:

- 19” 3 HU rackmount unit
- front panel control via switches and indicators
- Key switch for master slave changeover
- Protected key for terminate command
- Up/down buttons for antenna selction with LED bar indicator
- Antenna selection via touch panel includes direction selection for first antenna (N, NE, E, SE, S, SW, W, NW, others follow clockwise)
- Two integrated power supplies
- Two IRIG tone encoders
- Two RF preamplifiers
- “Sniffer” receiver with preceding RF attenuator
- Two independent microcontroller systems monitoring each other and controlling master/slave function
- Touch panel display for communication
- Master/slave operation changeover manually, remote or by touch panel
- Key switch for changeover between manual, remote or touch panel operation
- Record of all operations with time stamp and operator identification
- Record of all setting reloaded in power up
- All vital mode and status information displayed on touch panel including status of high power RF amplifiers with reset possibility
- Safety function for Terminate button
- Two different access levels for operator and administrator
- Possibility for remote maintenance and update
- Backpanel connections:
    - Power with fuse
    - Antenna for FTRD
    - CAN 1 and 2 (9-pole Sub-D socket)
    - RS485 (2-pole clamp)
    - RS232 (9-pole Sub-D pin)

Technical data transmitter:

- frequency range:	nominal 390 to 475 MHz, has to be defined
- RF output:	SMA socket, no damage if antenna missing or short circuit
- RF-power:	2 W to 5 W, has to be defined
- Spectrum:	suppression of harmonic and other lines better – 70 dBc
- Environment:	reference oscillator for range of -10 ℃ to +70 ℃, temperature compensated frequency stability better 2,5 x 10^{-6}
	Random 0,07g²/Hz (20Hz to 2 kHz)
	Sinus 10g (20Hz to 2 kHz)
	Shock half sinus 50g peak for 11 ms
- Nominal hub	20 kHz to 28 kHz, set to a modulation voltage of 2,2 V_{SS}
- Modulation frequency	1,5 kHz to 15 kHz

FTS High power amplifier



FTS antenna switching system

For further information please contact TESTEM GmbH mail@testem.de.

Specifications subject to be changed without notice