

COMMUNICATION SUBSYSTEM (COM)

MAIN FEATURES

- **Flight heritage** acquired in 2021 with the launch of RadCube
- Single-point failure tolerant design
- Cold in transmit and receive and optional hot redundancy in receive
- High-performance MCU
- Health telemetry
- Space grade connector to the backplane
- ESA approved Interface Control Document
- Half-duplex operation mode
- Channel coding: RS, BCH
- Transmit power up to 1000 mW
- Data rate: 1250 bps to 150 kbps
- Tailoring ECSS/CCSDS
- Serial communication interfaces using differential signaling (CAN, M-LVDS)
- Radiation tested (TID)



SPECIFICATION

Property	Value/Options	Notes
TX/RX Frequency Band	399-403 MHz	Professional Band
Frequency accuracy	<10 ppm	Crystal compensated with capacitor bank
Maximum transmit power	up to 30 dBm / 1000 mW	
Data rate	1250 bps to 150 kbps	
RX Sensitivity	-115 ... -107 dBm	Depending on the data rate
Input voltage	4.9 ... 5.3 V	
Modulation	OOK/FSK/GFSK	
Channel coding – Uplink	BCH	
Channel coding – Downlink	RS (255,223)	
Encryption	AES-256	
MCU	32-bit ARM Cortex-M7	

Continues on page 2/2



TITLE
COMPANY
ADDRESS
CONTACT

C3S PLATFORM DATA SHEET, v01 - 05/01/2022
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Communication Subsystem (COM) / Specification

MCU frequency	up to 300 MHz	
MCU Program memory	2 MB	
MCU Data memory	384 kB	internal RAM
Command bus	2 x CAN bus	1 cold-redundant pair
Data bus	2 x M-LVDS	1 cold-redundant pair
Dimensions	92 x 80.9 x 12.8 mm (W x L x H)	
Mass	114 g	Excluding daughterboard
Nominal power consumption (Idle/RX/TX)	495/790/3345 mW	TX at maximal output power
Operating Systems	FreeRTOS	