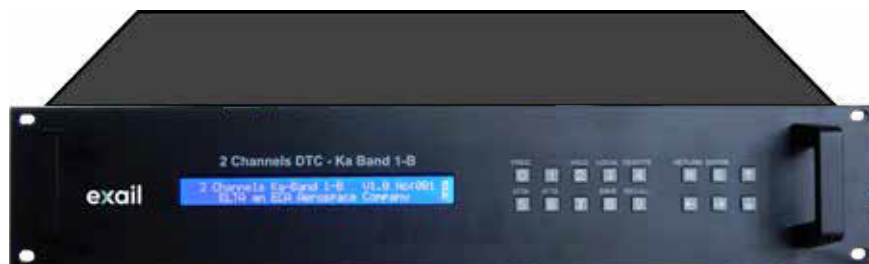


# TDC

## OUTDOOR AND INDOOR FREQUENCY TRACKING DOWN CONVERTERS FOR ANTENNA AUTOTRACK SYSTEMS UP TO Q-BAND

- Auto-calibration
- Internal synthesizer
- Low gain / phase shift
- Status monitors & summary alarm
- RS-422 or ethernet M & C



ISO9001/EN9100/AS9100/JISQ9100

EUROPEAN CONFORMITY

EN 301489-1

EN 60950-1

MIL-STD-810G (TABLE 5146C-IICAT 4 + SHOCK 30G11ms)

# TDC OUTDOOR AND INDOOR FREQUENCY TRACKING DOWN CONVERTERS FOR ANTENNA AUTOTRACK SYSTEMS UP TO Q-BAND

## INPUT

- Freq. band – See ordering information scheme
- Level from -100 dBm to -30 dBm
- Noise figure ≤12 dB
- Connector SMA female, 2.9 mm(K) in the Ka Band2 version

## OUTPUT

- Freq (Fo) 70 MHz
- Pout @ 1 dB compression ≥5 dBm
- Connector SMA female, N in outdoor version

## TRANSFER

- Conversion gain 25 dB ±5 dB
- Image rejection >60 dB
- Isolation between channels >60 dB

## FREQUENCY REFERENCE

- Frequency 5 and 10 MHz
- Connector BNC female, SMA in outdoor version

## LOCAL OSCILLATOR

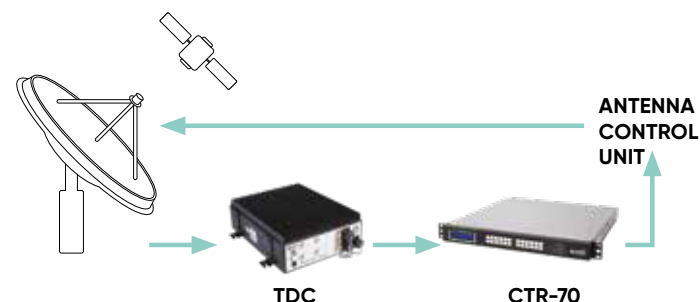
- Step size 1 Khz
- Phase Noise:  
@100Hz: -68 dBc/Hz  
@ 1KHz: -80 dBc/Hz  
@ 10KHz: -88 dBc/Hz

## POWER SUPPLY

- Voltage 115 / 240 Vac ±10%
- Frequency 47 to 63 Hz
- Consumption 50 VA typ

## SYSTEM OVERVIEW

Antenna Tracking system for optimum RF signal strength from a moving satellite



## HEAD OFFICE:

### Exail Aerospace SAS

ZAC de Saint Martin du Touch  
6 Impasse Alice Guy  
31300 Toulouse – FRANCE  
+33 5 62 11 17 17 | [contact-aerospace@exail.com](mailto:contact-aerospace@exail.com)

[www.exail.com](http://www.exail.com)

## AUTO CALIBRATION

The Auto-calibration process is periodically performed for gain compensation and the phase offset between channels

## MONITORING & CONTROL

- Interfaces RS422
- Ethernet via the CTR-70

## RELIABILITY

- MTBF 50 000 hours
- MTTR 1 h with an equipment spare

## MECHANICAL CHARACTERISTICS

- INDOOR:  
• Drawer 19" x 2 U x 460 mm
- Weight 12 kg

- OUTDOOR:  
• Drawer 400 x 400 x 150 mm
- Weight 15 kg



OUTDOOR PACKAGE

## ENVIRONMENTAL CONDITIONS

- INDOOR:  
• Operating 10 °C to 40 °C
- Storage -30 °C to +70 °C
- Humidity 95% @ 35 °C
- OUTDOOR:  
• Operating -20 °C to 50 °C
- Storage -30 °C to +70 °C
- Humidity 100 % in operating
- Waterproofness IP65

## ORDERING INFORMATION SCHEME

|                                |                  |         |    |
|--------------------------------|------------------|---------|----|
| EXAMPLE:                       | TDC              | E – KA1 | IN |
| PRODUCT TYPE                   | TDC with autocal |         |    |
| AUTOCAL VERSION                |                  |         |    |
| B = 2 channels (Σ and one Δ)   |                  |         |    |
| E = 3 channels (2 Σ and one Δ) |                  |         |    |
| F = 3 channels (Σ and 2 Δ)     |                  |         |    |
| FREQUENCY BAND                 |                  |         |    |
| C1= 3,4 to 4,2 GHz             |                  |         |    |
| C2= 4,5 to 4,8 GHz             |                  |         |    |
| S = 2,2 to 2,3 GHz             |                  |         |    |
| X1= 7,25-7,75 GHz              |                  |         |    |
| X2= 7,90-8,50 GHz              |                  |         |    |
| Ku = 10,70 to 12,75 GHz        |                  |         |    |
| Ka1= 17,70 to 21,20 GHz        |                  |         |    |
| Ka2= 25,50 to 27,00 GHz        |                  |         |    |
| Q = 37,5 to 70,00 Ghz          |                  |         |    |
| PACKAGE                        |                  |         |    |
| In= indoor                     |                  |         |    |
| Out= outdoor                   |                  |         |    |