DATA SYSTEMS

TRACK TRANSMIT RECEIVE RECORD

KA-BAND

Wide Band Frequency Converters

SATELLITE TRACKING SOLUTIONS

SAFRAN DATA SYSTEMS offers synthesized frequency converters operating through Ka-band 17.7 - 31.0 GHz, presented in a 1U 19” panel :

- Down Converters (1 channel or 2 channels)
- Up Converter (1 channel)

The down converters convert Ka-band to a selectable IF frequency from 70 MHz to 1550 MHz. An internal microwave synthesizer provides frequency tuning in 1 MHz step over the RF frequency band.
An ultra stable internal frequency reference OCXO is available. An external reference 5 or 10 MHz can be used to drive the internal reference.

- Satellite Communications
- Remote Sensing
- AIT

WIDE RF BAND

1 MHZ FREQUENCY STEPS

LOW GROUP DELAY DISTORSION

DUAL OR TRIPLE CONVERSION, NO SPECTRAL INVERSION

LOW PHASE NOISE

AUTOMATIC SYNCHRONIZATION ON 5/10 MHZ EXTERNAL REFERENCE

SAFRAN

SATELLITE TRACKING SOLUTIONS

KA-BAND WIDE BAND FREQUENCY CONVERTERS

COMMON CHARACTERISTICS

Frequency

RF ..... 17.7 - 31.0 GHz
Selectable IF ..... 70 or 140 or 720
..... or 1200 or 1550 MHz
IF bandwidth ..... ± 20 MHz @70 MHz
..... ± 40 MHz @140 MHz
..... ± 200 MHz @720 MHz
..... ± 320 MHz @1200 MHz
..... ± 350 MHz @1550 MHz

LO characteristics

Type ..... Synthesized LO frequency
Frequency steps ..... 1 MHz
Internal Frequency reference ..... 100 MHz,
..... lockable on external 5/10 MHz
..... reference (0dBm ±3dB)
Stability ..... < $\pm 5.10^{-8}$ from 0°C to +50°C
Phase noise @ frequency offset from carrier, typical
..... ≤ –60 dBc/Hz @ 100 Hz
..... ≤ –70 dBc/Hz @ 1 kHz
..... ≤ –80 dBc/Hz @ 10 kHz
..... ≤ –90 dBc/Hz @ 100 kHz

Interfaces

RF ..... 2.92mm female
IF ..... SMA female
5/10 MHz input ..... SMA female
M&C ..... SubD male - 9 pins
Ethernet RJ45

Mechanical characteristics

Weight ..... < 22 lb (< 10 kg)
Dimensions ..... 1Ux19"x22" rackable (44.5x482x560mm)
Power consumption ..... ≈ 50W
Power supply ..... 90 - 240 V ; 47-63 Hz
Temperature ..... operating 0°C to +50°C
..... storage –40°C to +70°C
Relative humidity ..... operating 0 to +85%
..... storage 0 to +95%

MODEL TABLE

RACK TRANSPO BD KA DN
1 Down Converter ..... Ref. SM01060268A
RACK TRANSPO BD KA 2DN
2 x 1 Down Converter ..... Ref. SM01060267A
RACK TRANSPO BD KA UP
1 Up Converter ..... Ref. SM01060269A

Specific Characteristics

	DNC	UPC
Input characteristics		
VSWR	≤ 2.0 : 1 on 50 Ω	≤ 1.8 : 1 on 50 Ω
Noise Figure @ max gain	≤ 12dB	≤ 15dB
Output characteristics		
Output power @1dB compression	≥ +10dBm	≥ +0dBm
OIP3	≥ +20dBm	≥ +10dBm
VSWR	≤ 1.7 : 1 on 50 Ω	≤ 2.0 : 1 on 50 Ω
Transfer characteristics		
Gain (min)	> 50dB (@Att= 0dB)	> 40dB (@Att= 0dB)
Gain adjustment range	0 to -31.75dB	0.25dB step
Gain flatness	≤ ±2dB over IF bandwidth	≤ ±2dB over IF bandwidth
Gain slope	< 0.05dB/MHz	< 0.05dB/MHz
Group delay variation	3 ns typical over IF bandwidth	< 3 ns typical over IF bandwidth
Image rejection	≥ 20dB	–
Output dependent spurious	- 30dBc typical @Ps= 0dBm	- 30dBc typical @Ps= 0dBm
Output independent spurious	external filter advised	external filter advised
Mute efficiency	≥ 50dB	≥ 50dB

GLOBAL SALES
5, Avenue des Andes - CS 90101 - 91978 Courtaboeuf Cedex - FRANCE – Tel.: +33 1 69 82 78 00 - Email: sales.sdsy@safrangroup.com

USA
3005 Business Park Dr - Norcross, GA 30071 - USA – Tel.: +1 770 753 4017 - Email: sales@SafranDataSystemsUS.com

SAFRAN