CODAN

SATELLITE COMMUNICATIONS

Transceiver redundancy systems

A range of 1:1 hub-mounting redundancy systems is available for Codan's 5700 series C-Band and 5900 series Ku-Band transceivers.

Codan satellite transceivers have been setting industry standards for performance and reliability since the early 1990's. However, there are still critical applications where 1:1 redundancy protection is required.

TRANSCEIVER REDUNDANCY

Codan offers a range of switching equipment that integrates easily with the 5700 series C-Band or 5900 series Ku-Band transceivers. The systems include interconnecting cables, mounting hardware and waveguide connections.

Simple configuration

A complete system comprises two standard transceivers, of any power rating, and the outdoor mounting Redundancy Controller 5586 that provides integral IF relays and simultaneously controls the RF switches. This configuration, also called stream redundancy, ensures unambiguous, simultaneous switchover of both IF and RF paths in the transmit and receive directions.

The Controller is powered from both transceiver power supplies for high reliability.

Flexible configuration

Flexible operating modes allow 'warm' or 'hot' standby operation. Automatic or manual control is easily selected.

Generously rated terminations allow the off-line SSPA to be continuously activated for true hot standby capability. Test ports permit independent RF testing of the off-line stream, without interruption to the on-line traffic.

Owing to the unique design of control cables and connectors, the system can be reconfigured as a non-redundant system to restore operation should the controller require service.

Monitor and control

The optional one rack unit high Redundant System Monitor 5587 provides clear system status indication at all times, and remote manual control over SSPA activation and stream selection.

The individual transceivers' serial control ports are accessible at the rear of the 5587, enabling connection of ASCII (RS232) or Packet mode (RS485) control systems. Alternatively, a dual Remote Controller 5570D may be connected giving full control of both transceivers from the indoor equipment.

Redundant C-Band 5700 series 20 W transceiver on a 3.8 m antenna boom

Redundant C-Band 60 W high power transceiver system

MAJOR CONFIGURATION OPTIONS

5586 based redundancy system for C-Band transceivers

Combined WR229/N-connector waveguide switch for SSPAs with N-type outputs

Separate WR137 and WR229 waveguide switches for SSPAs with waveguide outputs

5586 based redundancy system for Ku-Band transceivers

Dual WR75 waveguide switches for Ku-Band SSPAs with waveguide outputs

Accessories

Redundant System Monitor 5587 (for 5586 based systems)

Dual Remote Controller 5570D (for 5586 based systems)

Interconnecting cables for 5587 units

Redundant Switching System: 5586, 5587 and combined WR137/N switch

5570D Dual Remote Controller

CODAN QUALITY AND SERVICE

The redundancy equipment is built and tested in Codan's ISO9001 quality certified manufacturing facility.

Codan's fully trained staff and agents provide in-factory and in-country training services, and complete installation and on-site assistance. This service is backed up by a 24 hour customer service line and a warranty of three years on manufacturing, design or component defects.

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Equipment descriptions and specifications are subject to change without notice or obligation

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Transceiver Redundancy System 5586/5587

SPECIFICATIONS

IF/RF SWITCHING

Transmit and receive IF switching

Frequency range	50 to 180 MHz
Impedance	50 Ω 75 Ω optional
Loss	
To on-line output	0.5 dB maximum
To off-line output	50 dB minimum
Ripple	±0.05 dB typical over 70 ± 20 MHz and 140 ± 40 MHz
Transmit/receive isolation	90 dB minimum
Connectors	N female
Return loss (on-line ports)	20 dB minimum
Transmit IF splitter option	
Loss (to On output)	3.75 dB maximum
Ripple	±0.07 dB typical over 70 ± 20 MHz and 140 ± 40 MHz

C-Band RF switching

Frequency range	
Transmit	5.850 to 7.025 GHz
Receive	3.400 to 4.800 GHz
Switch loss	
Transmit	
Coaxial N-type switch	0.5 dB maximum
Waveguide switch	0.1 dB maximum
Receive	0.1 dB maximum
Impedance (N-type switch)	50 Ω
VSWR	
Transmit	
Coaxial N-type switch	1.3:1 maximum
Waveguide switch	1.1:1 maximum
Receive	1.1:1 maximum
Connectors	
Transmit	
Coaxial N-type switch	N female
Waveguide switch	CPR137G flange, M5 threads
Receive	CPR229G flange, M6 threads

Ku-Band RF switching

(Transmit and receive paths use waveguide switches with identical specifications)

Frequency range	
Transmit	13.75 to 14.5 GHz
Receive	10.95 to 12.75 GHz
Switch loss	0.05 dB maximum
VSWR	1.1:1 maximum
Connectors	WR75, PBR120 flange, M4 threads

SWITCHING AND CONTROL

Switching

Operating modes	Auto/manual
Switch-over time	1 s maximum

Monitor and control

Controls	Auto/manual SSPA inhibit/remote/activate Stream 1/Stream 2 select
Indicators	Power Auxiliary supply (5586 only) Stream 1, Stream 2 selected Switch fault, Stream 1 fault, Stream 2 fault
Remote interface outputs	Stream 1 fault, Stream 2 fault Stream selected Switch fault Transceiver serial data outputs
Remote interface inputs	SSPA activate SSPA inhibit Force stream 1, Force stream 2 Transceiver serial data inputs

Power supply

Voltage	
5586	48 V DC, two inputs, connected to both transceiver supplies
5587	11 to 16 V DC, powered from 5586
Power consumption	20 W nominal

Environmental

Operating temperature range	
5586, RF switches	–40°C to +55°C
5587	–10°C to +50°C
Relative humidity	
5586, RF switches	100%
5587	10% to 95% non-condensing
Weatherproofing	
5586, RF switches	Sealed to IP65
5587	Unsealed, indoor mounting only

Mechanical

Size	
5586	300 mm W x 160 mm D x 370 mm H
5587	Standard 19˝ rack (1RU) 482 mm W x 70 mm D x 44 mm H
Weight	
5586	7.3 kg
5587	0.5 kg
WR229/N switch	2.6 kg
WR229 switch	2.4 kg
WR137 switch	0.8 kg
WR75 switch	0.5 kg

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