

Talon-RTR

Digital Telemetry Receiver

C/S/L/P/IF Band Receiver

Multi-Mode Demodulator

Pre-D & Post-D Combiner

Bit Sync & Frame Sync with Archiver

PCM

RF

FM

Data Link
Analyzers

Custom
Telemetry
Solutions



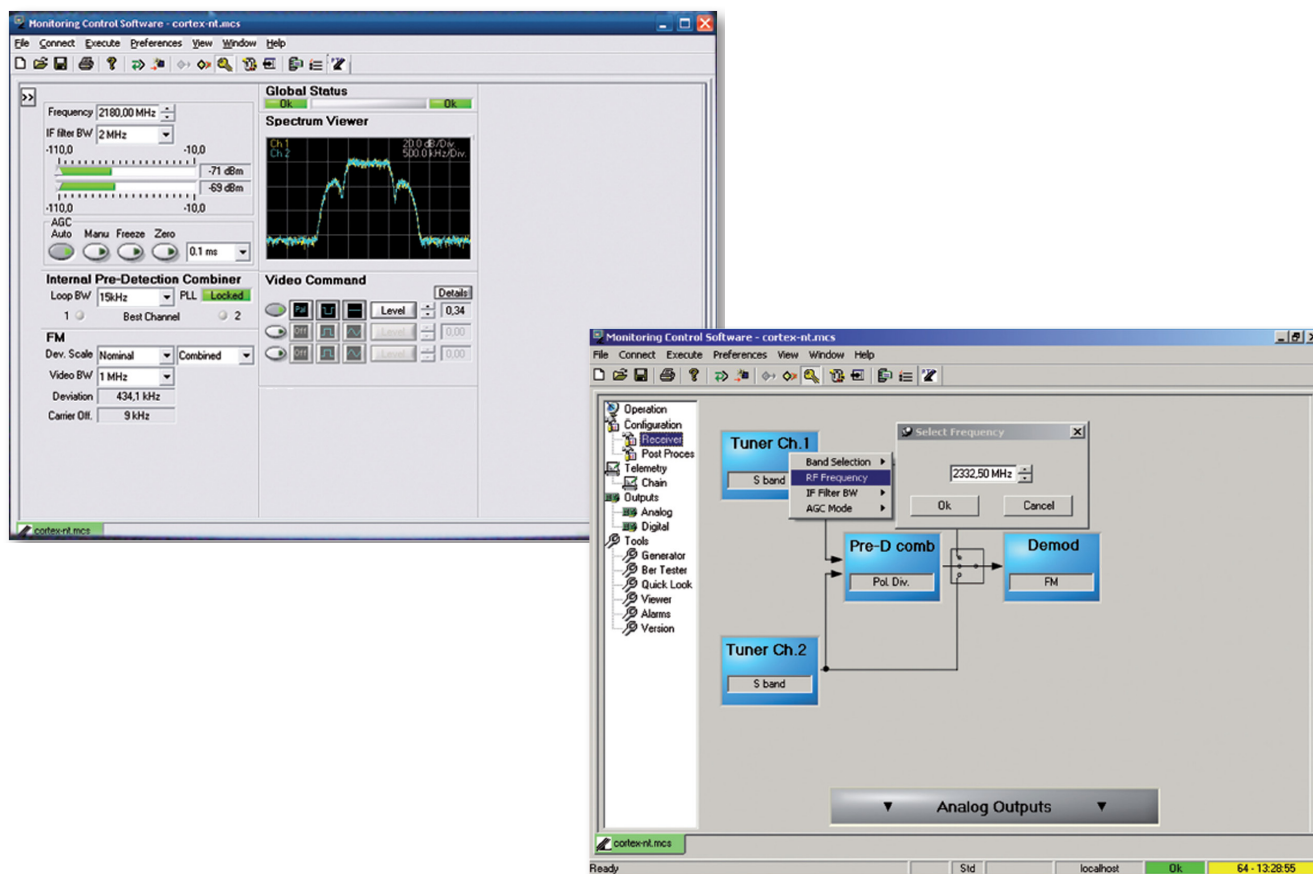
*Chassis
Solution*

Ulyssix 
Technologies, Inc.
a woman-owned small business

*Telemetry
Receiver*

Main System Features

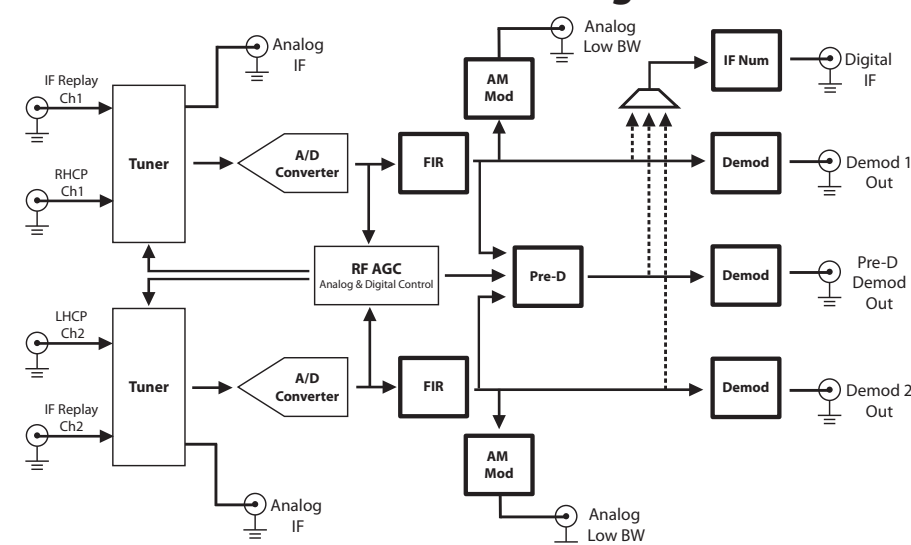
- User-friendly and intuitive software GUI
- High integration to reduce hardware for increased availability
- Digital Signal Processing techniques enhance performance, upgradeability and flexibility of the Talon-RTR
- No tuning and preventive maintenance required
- RF design performance better than IRIG 106 standard
- Single, Dual, or Quad-band (IF, P, L, S, and C) receiver without changing RF modules



RF Capabilities

- Single, Dual, Quad independent channel configurations
- Frequency range of IF/P/L/S/C bands
- Allows for multiple carrier reception and combination
- Capable of low/high gain antenna selection
- Excellent phase noise compatible with Tier II modulations
- Optimum ratio Pre-D combiner (available in frequency & polarization diversity) with automatic switching to best channel mode
- Outstanding 110 dB dynamic linear AGC
- Unmatched adjacent channel rejection with 8 SAW filters

Talon-RTR Block Diagram



Demodulator

- Capable of demodulating FM, PM, AM (auto-tracking), BPSK, QPSK, OQPSK, SOQPSK and optional Multi-h CPM signals
- Multi-mode demodulator Tier 0, I, II (PCM-FM, SOQPSK, Multi-h CPM)
- FPGA-based architecture for versatile and reliable digital processing
- AM demodulation for antenna tracking
- PC-based with Embedded XP OS environment

Dual Bit/Frame Synchronizer, Archiver Option

- Utilizes Ulyssix TarsusHS-PCI-02 Dual Channel Bit Sync, Frame Sync, Frame Archiver and IRIG Time Code Reader card
- Dual or Quad channel capabilities
- Can archive 2 PCM streams simultaneously from 1 bps up to 33 Mbps.
- Records PCM data to a raw binary file with time for direct use or replay through the Ulyssix TarsusHS-PCI-01 Archive Simulator playback

Decommutator & Playback Analysis Option

- Utilizes Ulyssix TarsusHS-PCI-01 Bit Sync, Frame Sync, Frame Archiver, Decom, IRIG Time Code Reader and PCM Simulator card
- Supports all IRIG Class II decommutator features
- Available with two different user friendly Windows GUI based software suites the Tarsus Software Suite for Checkout Decom and DEWESoft Software Suite for Real Time & Playback Analysis
- Equipped with fully programmable fixed Major Frame Simulator or Frame Sync Archive Simulator to playback .tad files

Specifications

Radio Specifications

Frequency Range (and/or)	
C-Band (EU & US)	4400-5250 MHz
S-Band	2180-2485 MHz
Upper L-Band	1710-1850 MHz
Lower L-Band	1429-1545 MHz
P-Band	200-500 MHz
IF	70 MHz
RF Inputs	Up to 4 (N-type 50 Ω)
IF Inputs / Outputs	Up to 4 / 6 (from/to IF recorder RSR)
Dynamic range	-10 dBm to noise threshold
Non destructive level	+10 dB
Noise Figure	<12 dB (8 dB typical)
Spurious signal rejection	>60 dBc
VSWR	2:1
Phase Noise	IRIG 106-07 Tier II compliant
IF Analog filters	8 pre-selection SAW (500 kHz to 36 MHz)

Signal Processing Specifications

IF filters	30 FIR digital filters (3 kHz to 36 MHz)
AGC modes	Automatic / Manual / Freeze
AGC Time Constants	5 (0.1 to 1000 ms)
AM response	From AGC cut-off to 50 kHz
Diversity Combiner	Polarization (or space) & Frequency
Combiner balance control	Equalizes CH1/CH2 noise floors
Combiner modes	Pre-D dual channels with optimal ratio and automatic best source selection (CH1/CH2 fade level of 5 dB)
Pre-D gain	>2.5 dB for two identical SNR
Pre-D tape recording & Playback	5 kHz to 10 MHz
Demodulation	FM, PM, AM (auto-tracking), BPSK, QPSK, OQPSK, SOQPSK, and optional Multi-h CPM
Video filtering	17 digital filters (12.5 kHz to 20 MHz)
De-emphasis (TV)	CCIR 405-1 (525 or 625 lines)

Combiner Specifications

Diversity modes	Polarization (or space) Frequency
Combiner types	Pre-D 2 channels Post-D 2 channels Post-D 4 channels using 2 receivers
Modes	Optimum ratio with automatic switching to Best Source Selector best channel
Pre-D gain	>2.5 dB for two identical SNR

Bit Sync/ Frame Sync Specifications

See TarsusHS-PCI-02 Brochure for details

Interface Specifications

RF inputs	2 (N type female connector)
IF I/Os	3 outputs (to IF recorder RSR), 2 inputs (from IF recorder RSR), BNC, 50 Ω
Video/tape outputs	3 BNC outputs, low/50 Ω / 75 Ω impedance
Video/tape levels	≤ 4 Vpp, reverse polarity, AC/DC
Video/tape bandwidth	DC to 20 MHz
Video data	separate channel, pre-D or post-D
Tape inputs	2 BNC inputs (up converters)
User outputs	3 BNC outputs (AGC, AFC, AM, Doppler...)
Reference I/O	BNC, 5/10 MHz sinewave
Test points	AGC level, AFC drift, SNR estimation, Doppler...

System Specifications

Monitor & Control	Local or distant PC (via TCP-IP)
Rackmount Chassis	19-inch, 4U, D=550mm standard or blind version
Operating Temperature	+10°C to +40°C
Storage Temperature	-40°C to +70°C
Power Supply	100-240 VAC, 50-60Hz

Ordering Options

Talon-RTR-C	Base Model Dual channel, C Band, Pre-D Combiner, Pre-D Recording & Playback, Demod FM/AM/PM/BPSK/QPSK/OQPSK/PCM-PM
Talon-RTR-S	Base Model Dual channel, S Band, Pre-D Combiner, Pre-D Recording & Playback, Demod FM/AM/PM/BPSK/QPSK/OQPSK/PCM-PM
Talon-RTR-OPT-P	Upgrade to include P band frequency range
Talon-RTR-OPT-L	Upgrade to include L band frequency range
Talon-RTR-OPT-S	Upgrade to include S band frequency range on Talon-RTR-C
Talon-RTR-OPT-3D-FM	Upgrade to include 3 demods all demod types except AU/SOQPSK
Talon-RTR-OPT-3D-AU/SOQPSK	Upgrade to include 3 demods with all demod types
Talon-RTR-OPT-AU/SOQPSK	Upgrade to include AUQPSK and SOQPSK single demods
Talon-RTR-OPT-hCPM	Upgrade to include Multi-h CPM demodulation
Talon-RTR-OPT-FMTrellis	Upgrade to include FM Trellis demodulation
Talon-RTR-OPT-BS	Upgrade to include TarsusHS-PCI-02 dual channel Bit Sync, Frame Sync, IRIG Time Code Reader and Frame Archiver
Talon-RTR-OPT-Decom	Upgrade to include TarsusHS-PCI-01 Bit Sync, Frame Sync, Decom, IRIG Time Code Reader, Frame Archiver with Time and PCM Simulator under the Tarsus Software Suite
Talon-RTR-OPT-DEWE	Upgrade to the Talon-RTR-OPT-Decom to run the TarsusHS-PCI-01 running under DEWESoft Standard EDITION Software with PCM Option Windows Software Application. Complete turn-key data acquisition with the PCM telemetry option including recorder, scope, trigger capabilities, FFT analysis, data storage, export with IRIG Time synchronization and DirectX Video.

Assembled in USA

Specifications subject to change without notice.