

Professional Integrated Receiver Decoder

4 TUNER RECEIVER, PROCESSOR, DECODER, STREAMER



IRD-4000 Professional HEVC 4K IRD and Processor

The IRD-4000 is the little brother of the single UHD-IRD-7000 of BLANKOM's IRD product family. It provides operators an ideal solution for receiving, remultiplexing, descrambling and decoding operations, maximum supporting Full HD decoding. Equipped with 4 Tuner inputs, it ensures compatibility with almost all HD transmissions.

The IRD-4000's re-multiplexing capabilities enable creation of new transport streams that are subsets of the original stream. Customized services may be output as multiple SPTS or MPTS over IP, as well as over ASI. By the 2x dual DVB common interfaces, this IRD can decrypt multiple services from several transport streams. The IRD-4000 is a professional IRD that features a broadcast quality decoder for MPEG-2 and MPEG-4 AVC/H.264 in SD and HD formats, and providing a variety of industry standard digital and analog outputs, including CVBS video, HDMI and 3G SDI interface. The unit also performs aspect ratio adaptation of HD programs to generate professional quality baseband analog video and audio outputs for easy integration with existing cable network infrastructure. This all-in-one architecture makes the IRD-4000 an ideal product for distribution and contribution networks.

Main Features

- QUAD-Tuner Input: DVB-S2x/S (4x = standard) or 4x DVB-C/T(2) or DTMB or ATSC or ISDB-T(b); TS/IP- and ASI-IN
- Supports DVB-S2 Input Stream Identifier and DVB-T SFN MIP pass through
- SD/HD MPEG-2, MPEG-4 AVC/H.264 video decoding
- Analog and Digital Outputs, ASI, CVBS 8AV1-4), SDI, TSolP
- 2 Audio PID's decoding or pass through for each SDI output
- Multiple output interfaces: 4x 3G SDI, 4x CVBS & Audio by Sub-D Adaptor
- Built-in 2x TS re-multiplexer: 1x source from Tuner1, Tuner2, CI1 and CI2 Inputs, the 2nd receives from Tuner3, Tuner4, CI3 and CI4 Inputs and the
- 2x2 DVB-CI Slots, support for all major CAS and CAM's, BISS-1 and BISS-E de- scrambling
- Dynamic PMT detection and automatic updating
- PCM audio embedded in SDI and HDMI outputs. AC3 and Dolby E audio can be passed through by SDI
- Full duplex mode, I/O total bit rate 300M or 64 IPTV/DVB mode output, bit rate 200M, support FEC
- Remote Control and Supervision by SNMP, HTTP WEB
- PCM audio embedded in SDI and HDMI outputs
- On-Site software update by IP and/or USB-port
- RSSI, received Eb/No & BER monitoring

Available Frontends:

DVB-S/S2/S2X	
Input Frequency Range	950...2150MHz
Input Level	-65...-25dBm
Symbol Rate	1 ... 60MSps
Modulation Type	QPSK, 8PSK, 16APSK, 32APSK, 64APSK
LNB Polarity Selection Voltage	0, 13V, 18V selectable
LNB Band Selection Tone	0/22KHz selectable, DiSEqC 1.0
PLS	0 ... 262141 -users configurable
ISI ID	1...255 -user configurable

DVB-C	
Input Frequency Range	42...1002MHz
Input Level	-60...-20dBm
Symbol Rate	1.8...7.2MS/s
Bandwidth	6/7/8MHz
Modulation Type	16QAM, 32QAM, 64QAM, 128QAM, 256QAM

DVB-T/T2	
Input Frequency Range	42...1002MHz
Input Level	-60...-20dBm
Modulation Type	QPSK, 16QAM, 64QAM
Bandwidth	6/7/8MHz
FFT Mode	2K, 8K
Guarding Interval	1/4, 1/8, 1/16, 1/32
Input Return Loss	7dB (typ.)

DTMB	
Input Frequency Range	44...1002MHz
Input Level	-60...-20dBm
Bandwidth	6/7/8MHz
Modulation Type	4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM

ISDB-T	
Input Frequency Range	42...1002MHz
Input Level	-60...-20dBm
Standard	ARIB STD-B31 v2.2
Bandwidth	6/7/8MHz
Modulation Type	QPSK, 16QAM, 64QAM

ATSC	
Input Frequency Range	54...864MHz
Input Level	-75...-7dBm (ATSC 8VSB)
Symbol Rate	10.762MBAud
Modulation Type	8VSB
Bandwidth	6MHz
Roll-off Factor	0.115

Rear panel:



Specifications:

Tuner Input	
DVB-S/S2X Tuner Input (ISI 16APSK/32APSK/64APSK S2X)	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	950 ... 2150MHz
Input Level	-25 ... -65dBm
Symbol Rate	DVB-S2X/S2 QPSK 8PSK: 1 ... 60MBaud
	DVB-S2X/S2 QPSK 16APSK: 1 ... 58MBaud
	DVB-S2X/S2 QPSK 32APSK: 1 ... 55MBaud
	DVB-S2X/S2 QPSK 64APSK: 1 ... 34MBaud
Roll-off Factor	DVB-S: 0.35
	DVB-S2: 0.35, 0.25, 0.2
	DVB-S2X: 0.35, 0.25, 0.2, 0.15, 0.1, 0.05
FEC Code Rate	DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8
	DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9,9/10
	DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
	DVB-S2X: 64800 bits FECFRAME VCM and ACM
LNB Polarity Selection Voltage	0, 13V, 18V selectable
LNB Band Selection Tone	0/22KHz selectable
Satellite Selection Command	DiSEqC 2.0
PLS	0 ... 262141 user configurable
ISI ID	1 ... 255 user configurable
DVB-C Tuner Input	
Connector Type	4×F type female 75Ω for Input,
Input Frequency Range	51 ... 862MHz
Input Level	51 ... 75dBμV
Symbol Rate	1 ... 7MBaud (ITU J.83 Annex A)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Return Loss	7dB (typ.)
DVB-T/T2 Tuner Input	
Connector Type	4×F type female 75Ω for Input
Input Frequency	104 ... 862MHz (VHF/UHF)

Input Level	-20 ... -70dBm
Constellation	DVB-T: QPSK, 16QAM, 64QAM
	DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
FFT Mode	DVB-T: 2K, 8K
	DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guarding Interval	DVB-T: 1/4, 1/8, 1/16, 1/32
	DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
FEC Code Rate	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8
	DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Input Return Loss	7dB (typ.)
DTMB Tuner Input	
Connector Type	4×F type female 75Ω for Input, 1×F type
	female 75Ω for loop through output
Input Frequency Range	46.5...866MHz
Input Level	-87...-29dBm
Symbol Rate	7.56MBaud
Bandwidth	6MHz/7MHz/8MHz
Constellation	4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM
Guard Interval	PN420, PN595, PN945
Roll-off Factor	0.05
Interleaving Depth	240,720
FEC Code Rate	0.4, 0.6, 0.8
TS Processing	
TS Processing	1 Independent TS Re-multiplexer:
TS Input Management	Demux and Remux among Tuner, CI, ASI and IP Inputs
TS Output Management	Demux and Remux for ASI or IP outputs
Service and PID Management	Remux, filtering and remapping
BISS Mode	BISS-1, BISS-E
Common Interface	2x2 PCMCIA slots, compatible with major CA CAMs in the market
ASI Input	
Connector Type	1* BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤ 200Mb/s
ASI Output	

Connector Type	2 *BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤ 200Mb/s
Digital Video Processing	
Video Standard	MPEG-2(MP@ ML for SD, MP@HL for HD)
	MPEG 4/H.264 AVC Part 10 (MP@L3 for SD, HP@L4.1 for HD)
	H.265 Main Profile@L5.0 High-tier
	AVS Jizhun Profile @ level 6.0 and AVS-P16
SDI Video Resolution	1080i×60, 1080i×30, 1080i×29.97, 1080i×25, 720p×60, 720p×59.94, 720p×50, 576i×25, 480i×29.97
Video PID Bit Rate	≤ 60Mb/s
HD/SD-SDI	
Connector Type	4 SDIs output, BNC, female, 75Ω
SD Standard	SMPTE 259M, 270 Mb/s (10bit)
HD Standard	SMPTE 292M, 1.485 Gbit/s (10bit)
Level	800mV p-p
Embedded Audios	MPEG-1 Layer 2
	Dolby Digital (AC3) Pass-through
	Dolby Digital Plus(AC3+) Pass-through
	MPEG-2 AAC
	MPEG-4 HE-AAC v1/v2
Analog Video Output	
CVBS Connector	DB15 * 2
CVBS Standard	NTSC, PAL, and SECAM
CVBS Resolution	576i×25, 480i×29.97
Nominal Output Level	1.0 Vp-p±5% (with standard test stream)
Frequency Response	<±1 dB, at 5.5 MHz for PAL/SECAM, 4.2MHz for NTSC
Chroma-Luma Delay	<±30 ns
Field Time Distortion	<2%
Line Time Distortion	<1%
Short Time Distortion	<2%
Differential Gain	<3%
Differential Phase	<2°
Signal to Noise Ratio	>55dB (luminance weighted)
Analog Audio Output	
Connector Type	DB15*2

Output Impedance	600Ω (balanced)
Output Mode	Left, Right, Dual Mono, Stereo
Number of Output	1 pair of stereo audio outputs
Cross Talk Among Channels	>70dB
THD	<0.3% @ 400Hz, 1KHz test tone
Frequency Response	±0.5dB over 20Hz ... 18KHz
Output Level	0dBm in 600Ω (0dBu), adjustable range ±10dB
TS over IP	
Connector Type	2×RJ-45, 100/1000 Base-T
Effective Bit Rate	Max.400Mb/s for 64xchannels, MPTS/SPTS IP out / IP in,
Protocol	UDP/RTP, Multicast/Unicast, IGMPv3, ARP
Control & Monitoring	
Connector Type	1×RJ-45, 10/100 Base-T, for equipment IP Control
Remote Control	SNMP, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System)
Local Control	LCD display and 6-key keypad
Serial Port	1×RS-232 D-sub female, for debug use only
Equipment Upgrade	Embedded FTP loader, WEB HTTP and USB
Physical	
Dimension	505mm×445mm×45mm
Weight	3.5kg
Power Supply	AC 90V ... 250V, 50/60Hz
Power Consumption	24W (exclusive of LNB power)
Operating temperature	0 ... 45°C
Storage temperature	-10 ... 60°C
Operating Humidity	10 ... 90%, non-condensed
Certification	
EMC: EN 55024:1998+A1:2001+A2:2003, EN 55022:2006+A1:2007, EN 61000-3-2:2006, EN 61000-3-3:2008	
FCC: Part 15 Class B	
LVD: EN 60950-1:2006 + A11:2009	