2013

HD X1
Technical specification

DVB-C HD MPEG-4 Receiver

FOR INTERNAL USE ONLY

1. FEATURES

- Digital Cable High Definition Receiver
- DVB-C AVC/H.264 MPEG-4 & MPEG-2 Compliant
- Availability to use one of following Conditional Access System:
    - Conax CAS7
    - Cryptoguard
    - Xcrypt
    - Gryffin
    - Crypton
    - DVCrypt
    - Cerbercrypt
    - AbelCAS
- Low Power Consumption according to EuP Directive (2005/32/EC) (related to ecodesign requirements) Compliant
- Quick and easy installation & user-friendly menu
- User friendly remote control with colored buttons functions
- 16:9, 4:3 and Letter Box aspect ratio supported
- Resolution: 480p, 576p, 480i, 576i, 720p, 1080i, 1080p (full HD)
- Teletext supported: OSD & VBI Insertion for TV
- Subtitle supported: DVB Subtitle / Teletext Subtitle
- Electronic Program Guide (EPG) for present/following event information and up to 7 days for on screen program information
- High Speed Channel Zapping and Searching
- Enhanced Favorite Channel Group Selection / Parental Lock
- Dolby Digital Audio Bitstream out through S/PDIF and Downmix
- Excellent Audio and Video Quality
- HDMI digital output for Digital TV (optionally with HDCP, depending on requirements)
- Software upgrade through OTC
- Messaging and Payment reminder supported (optional)
- LCN supported
- CE, LVD Certifications

2. TECHNICAL SPECIFICATION

2.1 PRODUCT: DVB-C High Definition Receiver AVC/H.264

2.2 MODEL NAME: OPTICUM HD X1

2.3 DESIGN

Front view

Remote Control Unit design

REMOTE IS SUBJECT TO CHANGE.

2.4 FRONT PANEL

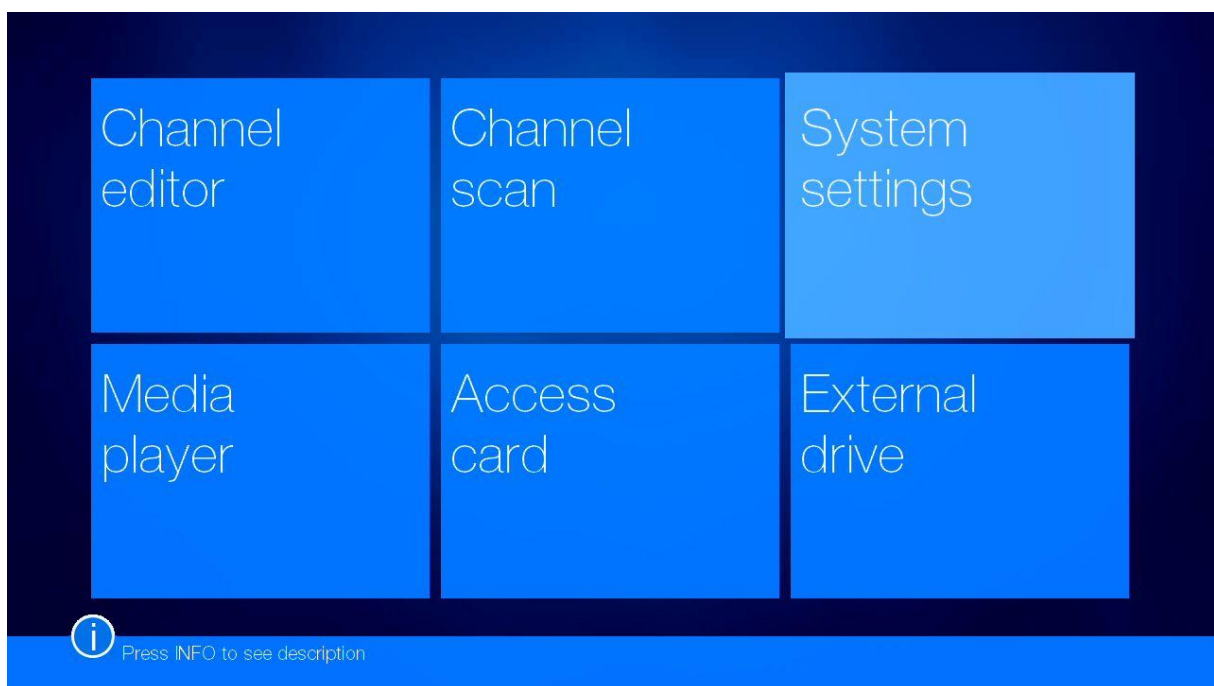| FEATURES		
SENSOR	IR	For receiving signal from remote control unit
LED's	RED/GREEN	RED light is emitted when the product is in stand-by mode GREEN light is emitted when the product is in working mode

2.5 REAR PANEL

CONNECTORS		
1	CABLE IN	DVB-C signal input
2	CABLE OUT	Loop-Through output to connect second receiver
3	CARD READER	Slot for smart card. Insert card with chip side up
4	S/PDIF (COAXIAL)	To connect your receiver to the audio system using an s/pdif cable (digital audio)
5	3xRCA	To connect your receiver with your TV using RCA cable
6	USB	To connect USB device – for sofrware upgrade
7	HDMI OUTPUT	To connect your receiver with digital TV

2.6 SOFTWARE

- user friendly and easy to operate – less calls to call center
- help messages inside receiver, every menu has separate text description, available after pressing INFO button on remote – less calls to call center
- possibility to customize default software parameters of installation menu, OTA, LCN to your cable network
- with features to support troubleshooting and contact with operator
  - button STATUS – all necessary information about STB, Card and signal in one place, for easy troubleshooting by call center
  - possibility to add your telephone number and your website in STB menu
  - possibility to add Operator's logo in main menu and on info bar visible when switching channels
  - different kinds of LCN scan,
  - LCN monitor permanently detects changes of LCN and notify customer with pop-up (optional)
- security features, to satisfy content providers
  - HDMI with HDCP protection (optional)
- Possibility to save EPG data on USB device, and immediately after booting restore all previous EPG, without waiting – more satisfaction for customers

GUI DESIGN:

2.7 PACKAGE CONTENTS

1 x Receiver (OPTICUM X1)
1 x Remote Control Unit (E-RCU-015)
2 x Batteries (AAA Type)
1 x User's Manual (Quick Installation Guide)
1x Warranty card

3. HARDWARE SPECIFICATION

MAIN CHIPSET	
CHIPSET	ALi M3812 600MHz (900 DMIPS)

MEMORY	
FLASH	4MB
DDR3 SRAM	128MB, 16Bit

TUNER	
NUMBER OF TUNERS	1
RF INPUT CONNECTOR	IEC 169-2, FEMALE
RF LOOP-TROUGH CONNECTOR	IEC IEC 169-2, MALE
INPUT IMPEDANCE	75Ω UNBALANCED

DEMODULATOR	
FREQUENCY RANGE	48 – 862 MHZ
WAVEFORM	QAM 16, 32, 64, 128, 256
SYMBOLRATE	1 ~ 7MS/s
OUTER DECODER	REED SOLOMON (204,188,8)
INNER DECODER	CONVULONTIONAL, LENGTH K=7

MPEG TRANSPORT STREAM A/V DECODING	
TRANSPORT STREAM	MPEG-2 ISO/IEC 13818 Transport Stream Specification
PROFILE LEVEL	MPEG-2 MP@ML MPEG-2 MP@HL and all lower levels MPEG-4 H.264/AVC HP@L4.1
ASPECT RATIO	4:3, 16:9, Letter Box
VIDEO RESOLUTION	480i, 480p, 576i, 576p, 720p, 1080i, 1080p
AUDIO DECODING	MPEG/MusiCam Layer I & II, MP3 Dolby Digital, Dolby Digital+, Dolby Digital Downmix
AUDIO MODE	Single Channel / Dual Channel / Joint Stereo / Stereo
SAMPLING RATE	32, 44.1 and 48KHz

A/V & DATA INPUT / OUTPUT	
3x RCA	**VIDEO OUTPUT (CVBS)** **AUDIO OUTPUT L+R**
S/PDIF	**1X SPDIF(COAXIAL) – DOLBY DIGITAL BITSTRTEAM OUT**
HDMI	**1X HDMI output (with optional HDCP)**
USB	**1X USB HOST (REAR SIDE)**

POWER SUPPLY	
TYPE	**SMPS**
INPUT VOLTAGE	**100~250V**
INPUT VOLTAGE FREQUENCY	**50/60Hz**
WORK MODE POWER CONSUMPTION	**7 W**
STANDBY POWER CONSUMPTION	**0,7W**
PROTECTION	**USE INTERNAL FUSE**

CONDITIONAL ACCESS SYSTEM	
SMART CARD READER	**1 SLOT (ISO 7816 COMPILANT)**
EMBEDDED CAS	**One of following CAS available:** **Conax CAS7** **Cryptoguard** **Xcrypt** **Gryffin** **Crypton** **DVCrypt** **Cerbercrypt** **AbelCAS**

PHYSICAL CHARACTERISTICS AND ENVIRONMENT	
SIZE (W x D x H)	
WEIGHT	**<1.0 Kg**
OPERATING TEMPERATURE	**+5ºC to +40ºC**
STORAGE TEMPERATURE	**-10 ºC to +60 ºC**
RECEIVERS PER CARTON BOX	
RECEIVERS PER PALLET	

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