



## Winbox Technologies EVO1-S TurnKey

Future TV OEM Reference Device

Based on Microsoft Embedded Windows CE

### Product Data Sheet

Suitable for internet streaming, IPTV, VOD, internet on TV, DMA and Home Networking Business Cases

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## Introduction

### About EVO1-S

EVO1-S is a compact add-on for television sets with with USB 2.0 support; it is extremely easy to use and includes the applications currently demanded by consumers and content providers.

### Winbox Technologies TurnKeys

EVO1-S is a OEM TurnKey product from Winbox Technologies. A TurnKey product consist out of hardware, software and OEM production services and enables our customers to get a mass-market ready product with the shortest possible time-to-market and near to zero upfront investments / NREs. The line-up of Winbox Technologies TurnKeys currently includes:

- EVO1-XS**      World's smallest Windows CE based IPTV / VOD / DMA device with integrated WLAN, Windows Media Codecs, DRM, Media Connect
- EVO1-S**        Compact Windows CE based IPTV / VOD / DMA device with USB 2.0 support, Windows Media Codecs, DRM, Media Connect
- EVO1-M**        Mid-size Windows CE based DVB/IP Hybrid Zapper device with USB 2.0 support, Windows Media Codecs, DRM, Media Connect
- EVO1-L**        Full-size Windows CE based DVB/IP Hybrid PVR/DVR with integrated harddrive and DVB-CA/CI security, Windows Media Codecs, DRM, Media Connect

Besides TurnKey products (EVO-Series), Winbox Technologies also offers all technology modules as license products to allow in-house developments. Further more, Winbox Technologies offers Professional Services for customization, e.g. of the user-interface or I/O interfaces and the complete OEM Product Services handling. Further information on all our products is available from our Sales Team.

### About Winbox Technologies

Winbox Technologies (formerly known as TeleGent) is the leading provider of OEM technology solutions for Windows Embedded based TV-centric consumer electronics. IPTV receivers, video on demand systems (VoD), harddisk videorecorders (PVR / DVR), connected TV-sets and set-top-boxes can be realized with less development investments and time by using Winbox Technologies' products. Customers can either source so called "TurnKeys" which contain a complete OEM solution including hardware, software and production services or license specific technology modules for in-house development. Partners and customers include Microsoft, NXP, ASUS, Sling Media, Medion and ProSiebenSat.1.



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## EVO1-S use cases

### Home Networking

Thanks to Windows Media Connect technology, devices based on the EVO1 Platform integrate with Windows PCs automatically. The uPnP based detection eliminates configuration almost completely because a PC with a Microsoft operating system (XP SP2 or later, Vista, Home Server or Windows Media Player 11) automatically detects EVO1 Platform devices on WLAN or cable networks.

Shared photos, music files or videos can then be easily accessed with the EVO1-S' remote on a TV in a living room or any other location. The NXP Nexperia processor guarantees the crystal-clear, high-performance display of media content. Thanks to its compact dimensions, the EVO1-S can be discretely located behind your television or display. A separate infrared transmitter guarantees reception of the signals from the remote control.

### Video on Demand

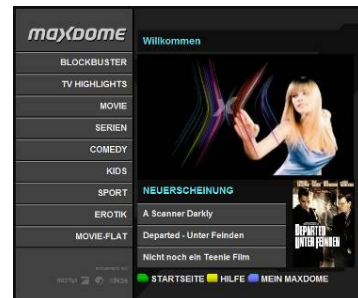
Drawing on full standard-compliant HTML support, Windows Media and secure DRM, the EVO1 platform enables our OEM customers to offer premium content business models. In addition to their own media content, consumers can seamlessly access these offers at the click of a button – at any time. This is ensured by the integration of the market-leading Windows Media DRM rights management system for premium content. All EVO1 Platform-based products, which use the Windows CE operating system and NXP Nexperia series processors exclusively, are outstanding playback stations for high-quality video and TV content therefore.



Entry point to various digital contents: the EVO1 Main Menu



Browsing media content using a rich user interface



Premium content integration example: maxdome Video-on-Demand

### Value-Added Services

Superior Microsoft based development technologies and APIs allow easy integration of add-on-services. Microsoft and Winbox Technologies already presented a Windows Live Messenger Integration and further integration examples will be presented in the near future. Based on the rich EVO1 platform all possible audio, video and IP-based applications – ranging from e-Commerce to multiroom audio, gaming or iTV – can be implemented.



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## Physical Design

Mechanical Design and Dimension (280 x 253 x 60mm)



## Reference Remote Control

Other models and designs are available on request.



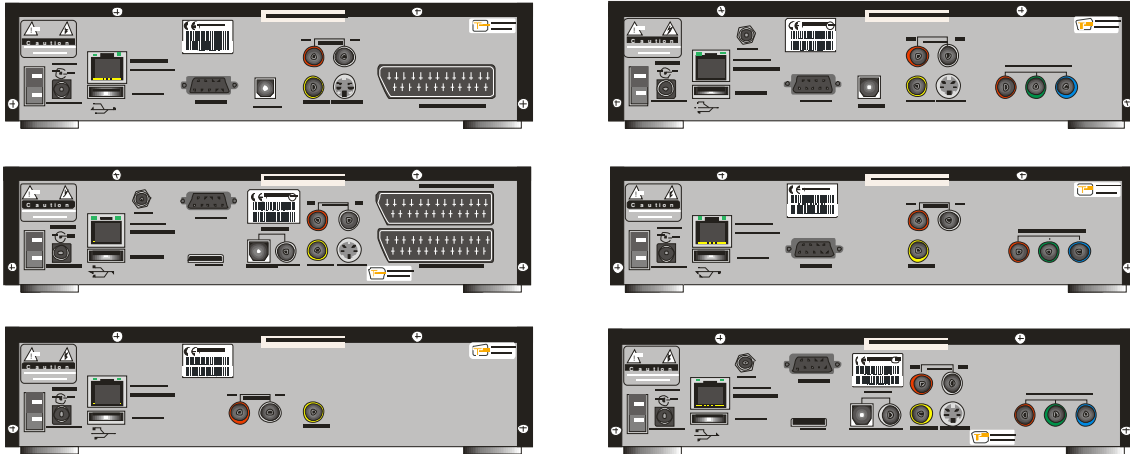
## Customization

As with all EVO1 models, also EVO1-S was build with the goal in mind to allow Winbox Technologies to customize their OEM solutions in many aspects like User Interface, custom service integration or individual housings. Winbox Technologies provides experienced and dedicated resources in its professional services unit that have already helped a lot of customers to get to exactly their EVO1 based product.



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## Customization Samples



## Technical Data

### Hardware Specifications

Item	Product Feature	Description
<b>1.1</b>	<b>Core System</b>	
1.1.1	CPU Speed	280 MHz
1.1.2	Media Core Speed	270 MHz
1.1.3	Supported TV System	PAL / NTSC
1.1.4	Memory Size	128 MB (64 MB WinCE5.0, 64MB Decoders)
1.1.5	Memory Type	DDR RAM 400 MHz
1.1.6	NAND Flash	64 MB
1.1.7	LAN Ethernet	RJ45 10/100Mbps
1.1.8	WLAN by Mini PCI (option) / TG220W	IEEE 802.11 b/g
1.1.9	IR	RC6 PHILIPS
<b>1.2</b>	<b>Power</b>	
1.2.1	Power Input	12VDC
1.2.2	Power Consumption	Max 21 W
1.2.3	Power type	External switch mode power adaptor (35W)
1.2.4	Isolation Resistance	> 5M ohm at 500Vdc @ 3A-261DA12-050
1.2.5	Isolation Voltage	2.2kVdc , 1.5kVac @ 3A-261DA12-050
<b>1.3</b>	<b>LAN Interface</b>	
1.3.1	One Fast Ethernet Port	10/100Mbps
1.3.2	Standard Compliance	IEEE 802.3 compliant
<b>1.4</b>	<b>A/V Interface</b>	
1.4.1	1 x Stereo Audio L/R Output	RCA output



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Item	Product Feature	Description		
<b>1.1</b>	<b>Core System</b>			
1.4.2	1 x SPDIF out	optical		
1.4.3	1 x SPDIF out	optical		
1.4.4	1 x Composite Video Output	PAL / NTSC CVBS		
1.4.5	1 x S-Video Output	PAL / NTSC S-Video		
1.4.6	1 x SCART out	PAL composite / RGB / S-Video		
1.5	Serial ports(optional)			
1.5.1	Serial port	RS232 (9 Sub-D)		
1.5.2	Serial port	RS232 internal for debugging (reduced)		
<b>1.7</b>	<b>LED Indicators</b>	<b>Condition</b>	<b>Color</b>	
1.7.1	Power Located in the IR Dongle	Standby operation	Orange green	NA
1.7.2	Ethernet Link/Act at the plug	Link	On	NA
1.7.3.	Second LED optional (f.x.WLAN status)			
<b>1.8</b>	<b>Buttons</b>	<b>Function</b>		
1.8.1	Power	Wake up from standby and back to standby		
1.8.2	Left/Right/Up/Down/OK	Navigation → Left/Right/Up/Down by Software		
<b>1.9</b>	<b>I/Os</b>	<b>Position</b>		
1.9.1	Power in for external PSU connect	Back		
1.9.2	RJ45 Ethernet 10/100 IEEE 802.2	Back		
1.9.3	USB 2.0	Back		
1.9.4	RS-232 Serial 9 Sub-D	Back		
1.9.5	Optical SPDIF (AC3)	Back		
1.9.6	Chinch Stereo (left / right) out	Back		
1.9.7	Chinch Composite Video out	Back		
1.9.8	S-VHS out	Back		
1.9.9	SCART to TV	Back		
1.9.10	USB 2.0	Front		
1.9.11	IR (RC6 PHILIPS protocol)	Front		



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## Software Feature Sets

Item	Product Feature	
<b>2.1</b>	<b>Operating System</b>	
2.1.1	Windows CE 5.0	
<b>2.2</b>	<b>OS Default Features</b>	
2.2.1	Internet Explorer 6.0 with TV Style Navigation extension	
2.2.2	Microsoft Media Player	
2.2.3	Microsoft DRM 10 (Janus) (based on contract)	
2.2.4	Connectivity (LAN/WLAN) Support	
2.2.5	Streaming Support (MMS)	
<b>2.3</b>	<b>Additional Applications (optional / available on customer request)</b>	
2.3.1	Update mechanism	
2.3.2	First time Installation wizard	
2.3.3	Turnkey Application Set for HTML/VOD Services	
2.3.4	Turnkey Application Set for DMA / Windows Media Connect	
<b>2.4</b>	<b>Video Decoder*</b>	
2.4.1	MPEG2	Up to 1080i
2.4.2	MPEG4 ISO/IEC 14496-2 Simple profile @L1-L5	Up to 4 Mbps
2.4.3	MPEG4 ISO/IEC 14496-2 Advanced Simple profile @L1-L5	Up to 4 Mbps
2.4.4	MPEG4 Part 10 /AVC Main Profile H.264 @L1	Up to 2,5 Mbps
2.4.5	Windows Media Video WMV 7-10 Standard	ASF Media Streaming Format Main Profile @ ML up to 4Mbps 720 x 480
2.4.6	Resolution	Maximum 720 X 576
<b>2.5</b>	<b>Audio Decoder*</b>	
2.5.1	MPEG-1 Audio	ISO/IEC 11172-3 Layer III (MP3)
2.5.2	MPEG-1 Audio	ISO/IEC 14496-3 AAC
2.5.3	Dolby AC3 + Dolby Digital	
2.5.4	Windows Media Audio WMA 7-10	Standard

\* further Codecs are also available and can be integrated on request

## Safety/ EMC Requirements

Item	Product Feature	Description
<b>3.1</b>	<b>Safety Requirements</b>	
3.1.1	CCC	73/23/EEC 93/68/EEC EN60065:2002
<b>3.2</b>	<b>EMC Certification</b>	
3.2.1	CE	EN 55022:1998+A1:2000+A2:2003 Class B EN 55024: 1998+A1:2001+A2:2003 EN 61000-3-2:2000 EN61000-3-3:1995+A1:2001
<b>3.3</b>	<b>Environmental Specifications</b>	
3.3.1	Operating Temperature	0C ~ 40 C



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Item	Product Feature	Description
3.3.2	Storage Temperature	-10C ~ 70C
3.3.3	Operating Humidity Range	20% ~ 80%

## Performance/National Test Requirements

Item	Product Feature	Description
<b>4.1</b>	<b>PAL output / opt. NTSC, HDMI</b>	
4.1.1	Output Level	White luminance amplitude : 630mV ~ 770 mV Yellow luminance amplitude :419mV ~ 511mV Cyan luminance amplitude : 331mV ~ 405mV Green luminance amplitude : 277mV ~ 239mV Magenta luminance amplitude : 195mV ~ 239mV Red luminance amplitude : 141mV ~ 173mV Blue luminance amplitude : 54mV ~ 66mV Black luminance amplitude : -5mV ~ 5 mV
4.1.2	Synchronization Level	270mV ~ 330mV
4.1.3	Outband rejection Ratio	NA
4.1.4	Frequency Response	< 2MHz : +/- 0.5 dB 4MHz ,~ 4.8MHz : +/- 1 dB 5.8MHz : -8dB ~ 0dB
4.1.5	Differential Gain	< 10%p-p
4.1.6	Differential Phase	<10 degree p-p
4.1.7	SNR (Weight)	< -50dB
4.1.8	Luminance Nonlinearity	< 5% p-p
4.1.9	Chroma/Luminance Gain Inequality	-5% ~ 5%
4.1.10	Chroma/Luminance Delay Inequality	-30ns ~ 30ns
4.1.11	K-factor	-5% ~ 5%
<b>4.2</b>	<b>L/R audio output</b>	
4.2.1	Output Level	1.8Vrms ~ 2.2Vrms
4.2.2	Distortion Factor	THD < 0.1%
4.2.3	Frequency Response	-2dB ~ 2dB for 40Hz ~ 20KHz
4.2.4	SNR (Weight)	> 65dB
4.2.5	Cross Talk	<-70dB
4.2.6	Phase Separation -> difference	Phase difference < 10 degree
4.2.7	Level Difference	<0.2dB



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## Accessories

Item	Product Feature	Description
<b>5.1</b>	<b>Hardware</b>	
5.1.1	SCART Cable (opt. component, HDMI)	Separate packed 1,5 meter (black)
5.1.2	Ethernet Cable	Separate packed 5 meter (grey)
5.1.3	Remote Control	PHILIPS rondo RC152 (grey)
5.1.4	2 x AAA 1,5 Volt Battery	Registered for the Germany GRS
5.1.5	Wb220 STB	Separate packed (black)
<b>5.2</b>	<b>Packing / Paper</b>	
5.2.1	Full color retail carton	German (OEM)
5.2.2	User Manual	German (generic)
5.2.3	Inlet	

This document is revision 1.7

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