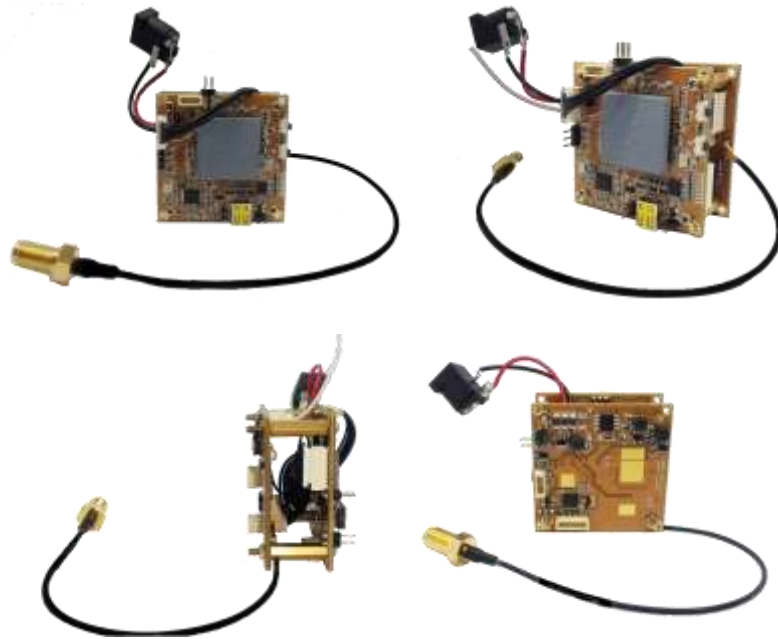


HiDES Easy HD Expressway!

HV-330 FPV Full HD COFDM Video Transmitter 42mmx42mm

Module (100MHz~2500MHz)

HDMI/Composite(CVBS) to DVB-T/ISDB-T/ISDB-Tb Modulator



HV-330 is the most cost-effective solution to transmit long range HD video for FPV application with COFDM digital TV technology.

The video input source from either HDMI/DVI or composite (CVBS) is encoded in H.264 streams, modulated with the open industrial standard EN 300-744 DVB-T/ARIB STD-B31 ISDB-T/ABNT NBR 15601 ISDB-Tb, and then transmitted over cable or air.

All DVB-T/ISDB-T/ ISDB-Tb compliant receivers*, including SetTopBox, Digital TV, PC/NB USB DTV dongle, or DTV capture card can receive, and watch the video from a HV-330 via the standard coaxial cable or antenna.

***HV-330 supports only H.264 video encoding, so the receiver should be able to decode H.264 stream while old DVB-T/ISDB-T TV's may not.**

Features

Compact Form Factor

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Two pcs of standard 42mmx42mm modules.

Optional power amplifier 42mmx42mm module also available.

High Performance Wide Frequency Range Support

Direct digital conversion to 100..2500 MHz for excellent signal quality

Professional grade modulation error rate (MER)

Flexible Bandwidth Option

In DVB-T mode, 1MHz~8MHz Bandwidth options are supported.

UART Digital Data Mux

HV-330 supports UART data mux feature. GPS or aviation data can be multiplexed in the transmitted stream from HV-330's UART port. Besides audio and video, the receiver can decode the received UART data for further data processing.

The communication parameters for the data mux UART port are configurable.

Security for anti-eavesdropping

Support both RF layer and TS data layer encryption.

Low Cost HD Video Distribution

Compliant to existing HD TV sets, no extra adapter required, and no restriction on the number of receivers. All the peripherals like splitter, amplifier, connector...etc are the same as those for regular TV.

In DVB-T mode, 1MHz~8MHz Bandwidth options are supported.

Versatile video inputs

Support HDMI/DVI and composite (CVBS) video input.

Easy to Configure

Channel number can be switched with the IR RC or onboard push buttons easily.

***The channel list mapping is user configurable (channel number -> frequency/bandwidth)**

More advanced configurations can be set from an external host like PC/NB thru serial port interface. UART control protocol and API/SDK available on request.

Optional LCM configuration tool (HL-100) is also available.

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Robust, Reliable and Long Distance

Easily transmit 1080p video over a single 3C2V/RG59 cable for at least 500 meters long without adding any repeater.

For wireless applications, the line of sight transmission distance may reach 50~100 meters at 0dBm RF radiation power and up to several kilo meters at 30 dBm with an external PA. The real distance depends on the antenna design and receiver quality.

Differential RF output is also available for RF signal distribution with twisted pairs (telephone or Ethernet RJ-45) instead of heavy coaxial cables.

Daisy-chain Connection (Bus-Topology)

Multiple HV-330's with different channel configurations can share a single cable. It can dramatically reduce the cable deployment cost and effort.

Real time protocol and Low latency

No frame drop in QEF (Quasi-Error-Free) condition, and low transmission latency

***With HV-122/HV-120/HV-110, the latency for 1080P HD is about 200mS**

Order Information:

Model	Mixer	Frequency Range (MHz)	MER (dB)	Shoulder (dB)	PA (Power Amplifier) module band (MHz)	RF output Power*	Power Consumption
HV-330-A	internal	70~1450	>30	>30	N/A	+1~-10dBm	12V/0.27A
HV-330-A-PATV	internal	70~1450	>30	>30	400-800	>+23dBm	+0.3A
HV-330-A-PA900	internal	70~1450	>30	>30	700-1000	>+23dBm	+0.3A
HV-330-A-PA1200	internal	70~1450	>30	>30	1000-1500	>+23dBm	+0.3A
HV-330-A-PA2400	internal	70~1450 2400~2500	>30	>30	2400-2500 (w/ up-converter)	>+25dBm	+0.4A
HV-330-B	ADRF6755	100~2500	>35	>45	N/A	+8~0dBm	12V/0.4A
HV-330-B-PATV	ADRF6755	100~2500	>35	>45	400-800	>+23dBm	+0.3A
HV-330-B-PA900	ADRF6755	100~2500	>35	>45	700-1000	>+23dBm	+0.3A

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HV-330-B-PA1200	ADRF6755	100~2500	>35	>45	1000-1500	>+23dBm	+0.3A
HV-330-B-PA2400	ADRF6755	100~2500	>35	>45	2400-2500	>+25dBm	+0.35A
HL-100T (optional)	LCM configuration tool						

*HV-330 with PA module



**the PA output power designated is average power for OFDM output, while the peak power for sine tone output is above 30dBm, 1W.

General Specifications:

Input	Video: CVBS, HDMI 1.3 Audio: Stereo line-in or HDMI PCM audio-in		
Compression	Video: H.264 Audio: AAC or MPEG		
Resolution	Input	CVBS	720x480x30I (NTSC, D1) 720x576x25I (PAL, D1)
		HDMI	720x480x30I (NTSC, D1) 720x576x25I(PAL, D1) 1280x720x50I/1280x720x50P 1280x720x60I/1280x720x60P 1920x1080x24P 1920x1080x50I/1920x1080x50P 1920x1080x60I/1920x1080x60P
Video Output	Compression:H.264 Frame size: 720x480x30P (NTSC, D1) 720x576x25P (PAL, D1) 1280x720x25P 1280x720x30P 1920x1080x24P		

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	1920x1080x25P 1920x1080x30P Note: the output frame size is the same as the input, no scale-up or scale-down feature supported
Power Consumption	HV-330-A: 12V/0.27A HV-330-B: 12V/0.4 ^a Supporting power source DC 10.5V~16.5V
Dimension WxDxH	2 pcs of 42mmx42mm PCB modules
Weight	Bare HV-330 PCB without pillars: 24g Bare W PA board without heat sink/fan: 13g Typical system with pillars, PA, and fan: 70g
Operating Temperature	-10°C ~ 60°C

Digital TV RF Transmitter Specifications:

Parameter	Value	
TV Standard	DVB-T EN-300 744 ISDB-T ARIB STD-B31 ISDB-Tb ABNT NBR 15601	
RF connector	50-Ω SMA connector	
Bandwidth	DVB-T	1/1.5/2/2.5/3/4/5/6/7/8 MHz
	ISDB-T/Tb	6MHz
Constellation	HV-330-A	QPSK, 16QAM
	HV-330-B	QPSK, 16QAM, 64QAM
FFT	2K, 4K, 8K	
Code rate	1/2, 2/3, 3/4, 5/6, 7/8	
Guard interval	1/4, 1/8, 1/16 or 1/32	
Frequency range	HV-330-A	70~1450MHz, step size 1KHz
	HV-330-B	100~2500MHz, step size 1KHz
Segment & Layer	DVB-T	n/a
	ISDB-T/Tb	13 Seg
Time Interleaver	DVB-T	n/a
	ISDB-T/Tb	Not supported
Digital Gain/Attenuator for Fine Tuning	HV-330-A	Range: +5dB~-10dB , Step size 1dB Default: 0 dB
	HV-330-B	Range: +0dB~-47dB , Step size 1dB

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		Default: -15dB
MER	HV-330-A	>30dB
	HV-330-B	>35dB
Spectrum Shoulder (Adjacent channel)	HV-330-A	>30dB
	HV-330-B	>45dB
Phase noise	<-92dBc @ 10kHz	
Carrier Suppression	>42dB	

Specifications are subject to change without prior notice.

*: There could be MER loss in high gain/attenuation level.

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HV-330 Application Scenario-FPV

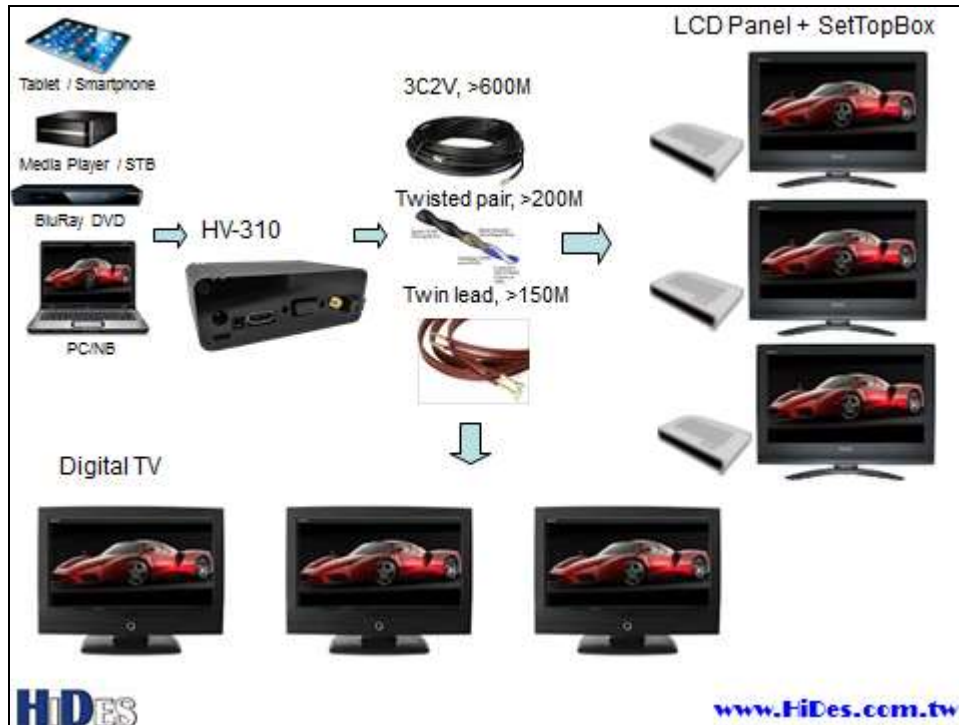


HV-330 Application Scenario-Wireless

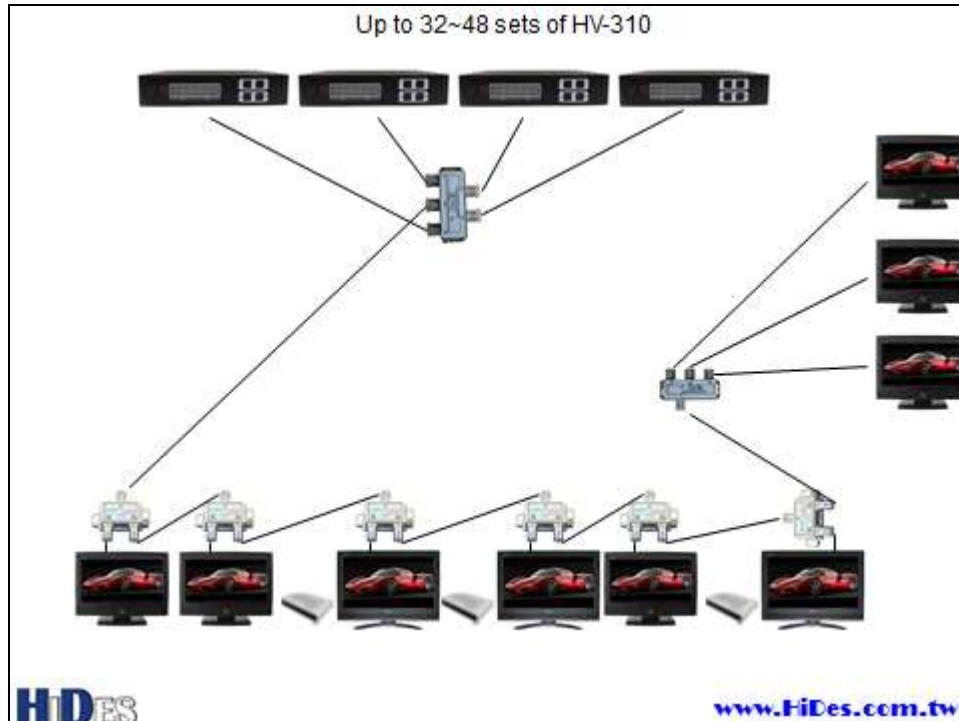


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HV-330 Application Scenario-Wired

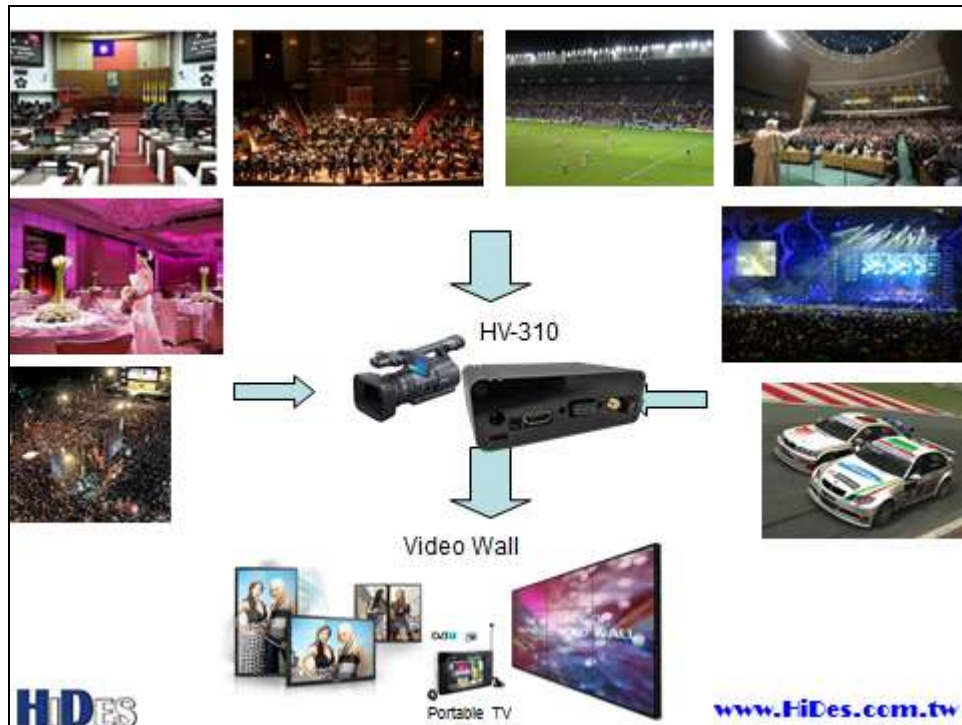


System Deployment Example – Daisy-Chain Bus Topology



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HV-330 Application – Live Video Broadcast

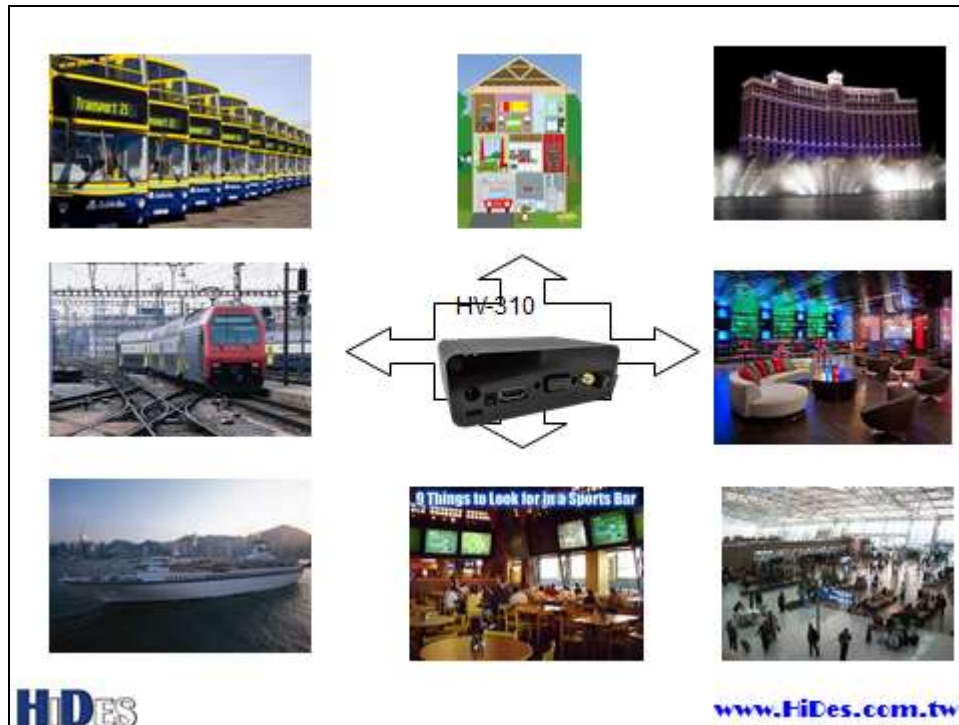


HV-330 Application – Digital Signage

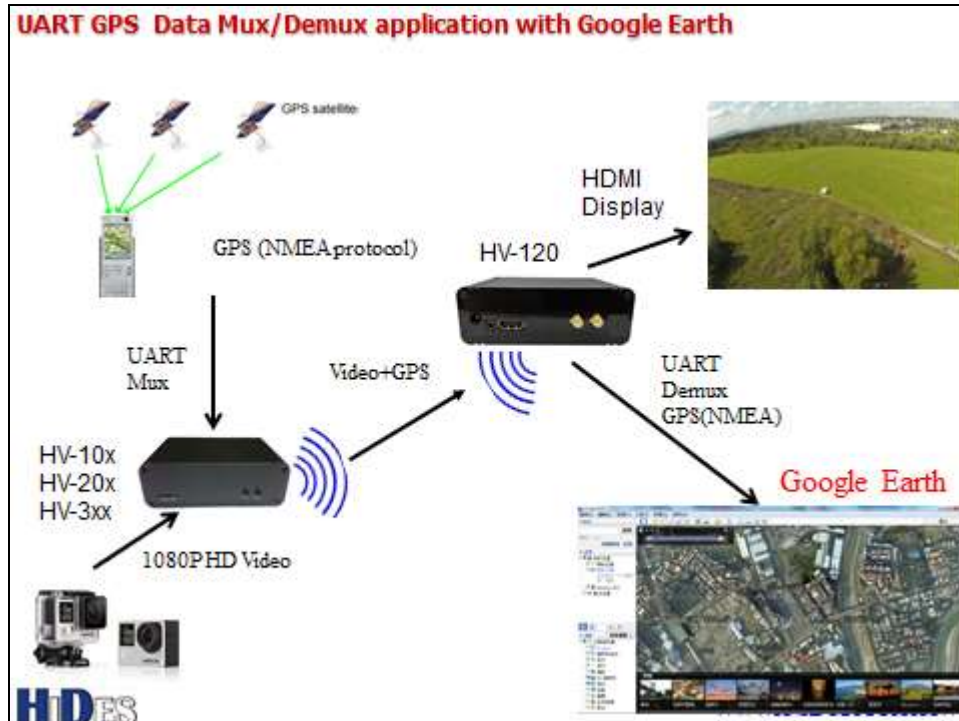


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HV-330 Application – Entertainment HD Video Distribution



UART GPS Data Mux (Demux'ed by HV-120)



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UART GPS Data Mux (Demux'ed by USB Receiver Dongle)

