Easy HD Expressway!

HV-320 FPV Full HD Video Transmitter (100MHz~2500MHz)

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

HV-320 is the most cost-effective solution to transmit long range HD video for FPV application with 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.

***HV-320E supports EN 300-744 DVB-T modulation while HV-320J supports ARIB STD-B31 ISDB-T/ABNT NBR 15601 ISDB-Tb modulation.**

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-320 via the standard coaxial cable or antenna.

****HV-320 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

High Performance Wide Frequency Rage 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.

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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 configured with the IR RC easily.

More advanced configurations can be set from an external host like PC/NB thru serial port interface.

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-320'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

Order Information:

Model	Features
HV-320E	DVB-T (H.264 only), channel frequency range 100-2500MHz
HV-320E-PA900	DVB-T (H.264 only), channel frequency range 100-2500Hz

	With 900MHz band power amplifier (+20dBm output)
HV-320E-PA1200	DVB-T (H.264 only), channel frequency range 100-2500Hz **With 1.2G band power amplifier (+20dBm output)**
HV-320E-PA2400	DVB-T (H.264 only), channel frequency range 100-2500Hz **With 2.4G band power amplifier (+20dBm output)**
HV-320J	ISDB-T (H.264 only), channel frequency range 100-2500MHz

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 1920x1080x25P 1920x1080x30P Note: the output frame size is the same as the input, no scale-up or scale-down feature supported		
Power	HV-320 without PA		5 V or 6~16V DC 1420 mA@5V 470mA@12V
	HV-320-PA900 HV-320-PA1200 HV-320-PA2400		**5V or 12V DC** **2050mA@5V** **720mA@12V**
Dimension	W(105 mm) x D(75 mm) x H(35 mm)		

WxDxH	(Bare bone PCBA size: 100mmx70mm)
Weight	175g (Bare bone PCBA weight 55g)
Operating Temperature	-10℃ ~ 60℃

Digital TV RF Transmitter Specifications:

Parameter	Value						
TV Standard	HV-320E	DVB-T EN-300 744					
	HV-320J	ISDB-T ARIB STD-B31 ISDB-Tb ABNT NBR 15601					
RF connector	50-Ω SMA connecter						
Bandwidth	HV-320E	1/2/3/4/5/6/7/8 MHz					
	HV-320J	6MHz					
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	100~2500MHz, step size 1KHz						
Segment & Layer	HV-320E	n/a					
	HV-320J	13 Seg or 1 Seg					
Time Interleaver	HV-320E	n/a					
	HV-320J	Not supported					
RF Output Level (dBm)							
Hv-320E/HV-320J **	Frequency	177.5 MHz	474 MHz	666 MHz	915 MHz	1250 MHz	2450 MHz
	Max	6.5	6.5	6.5	5.5	5.5	0
HV-320E-PA900 HV-320J-PA900	850~950MHz +20 dBm (with 900MHz Power Amplifier)						
HV-320E-PA1200 HV-320J-PA1200	1200~1350Mz +20 dBm(with 1.2G Power Amplifier)						
HV-320E-PA2400 HV-320J-PA2400	2400~2500Mz +20 dBm(with 2.4G Power Amplifier)						
Digital Gain/Attenuator for Fine Tuning	Range: +0dB~-25dB , Step size 1dB Default: -5dB (Default: -17dB for HV-320-PA2400)						
MER	Typically, @-5 dB attenuation by ADRF6755 >38dB@V-band						

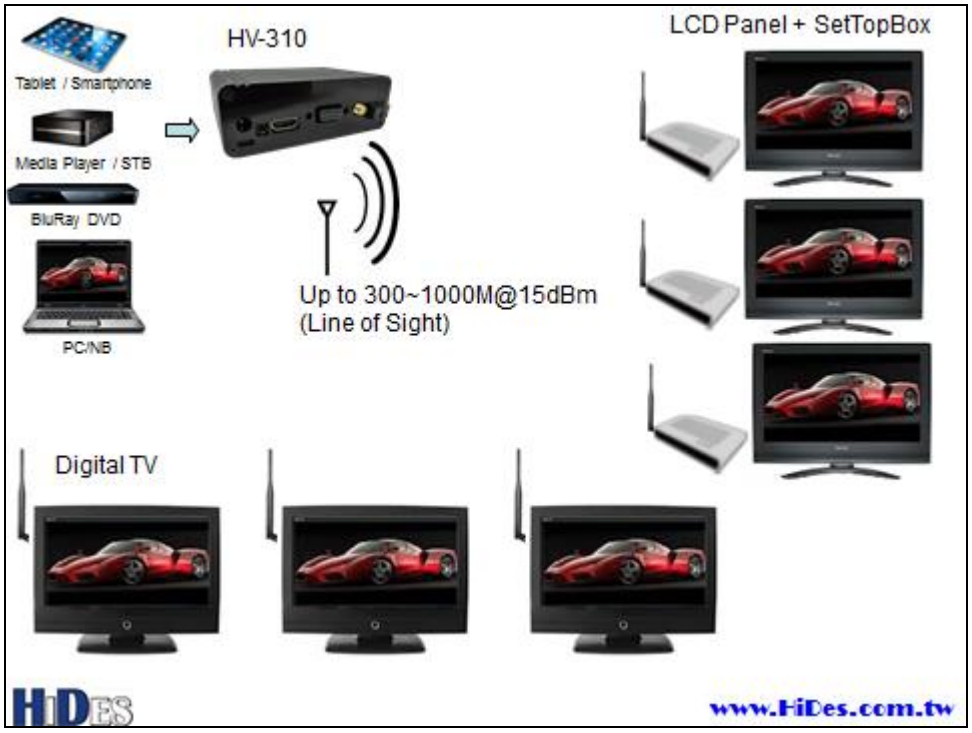
	>38dB@470-950 MHz >35dB@950-1900MHz >33dB@1900-2500MHz (>25dB with 900M/1.2G/2.4G +20 dBm output PA)
Spectrum Shoulder (Adjacent channel)	>48dB
Phase noise	<-92dBc @ 10kHz
Carrier Suppression	>42dB

Specifications are subject to change without prior notice.

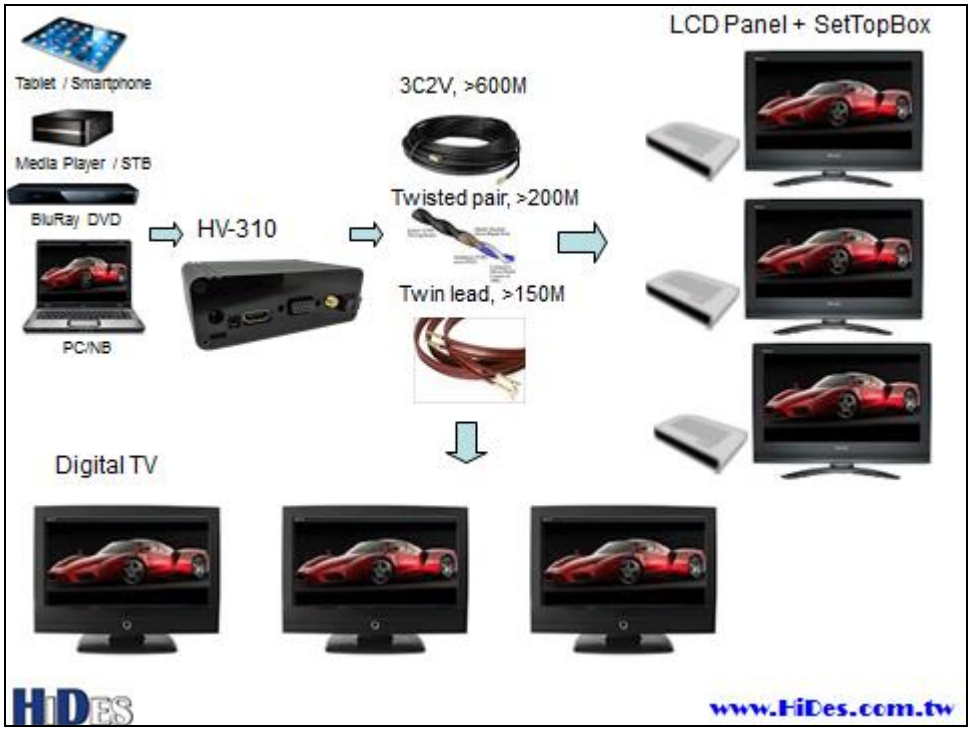
*: There could be MER loss in high gain/attenuation level.

HV-320 Application Scenario-FPV

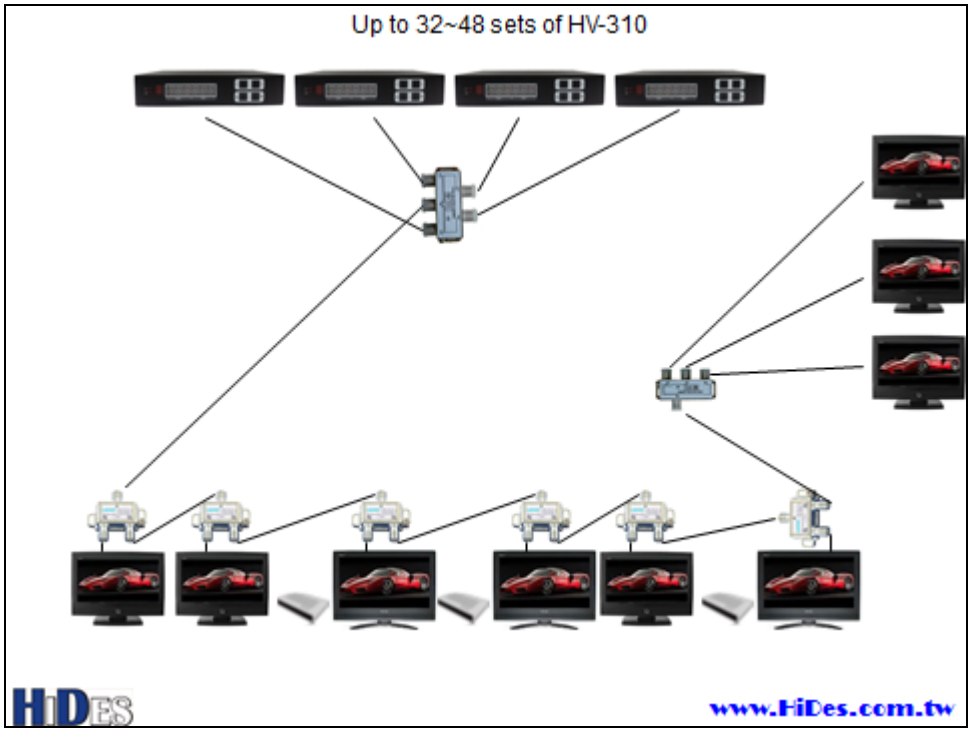
HV-320 Application Scenario-Wireless



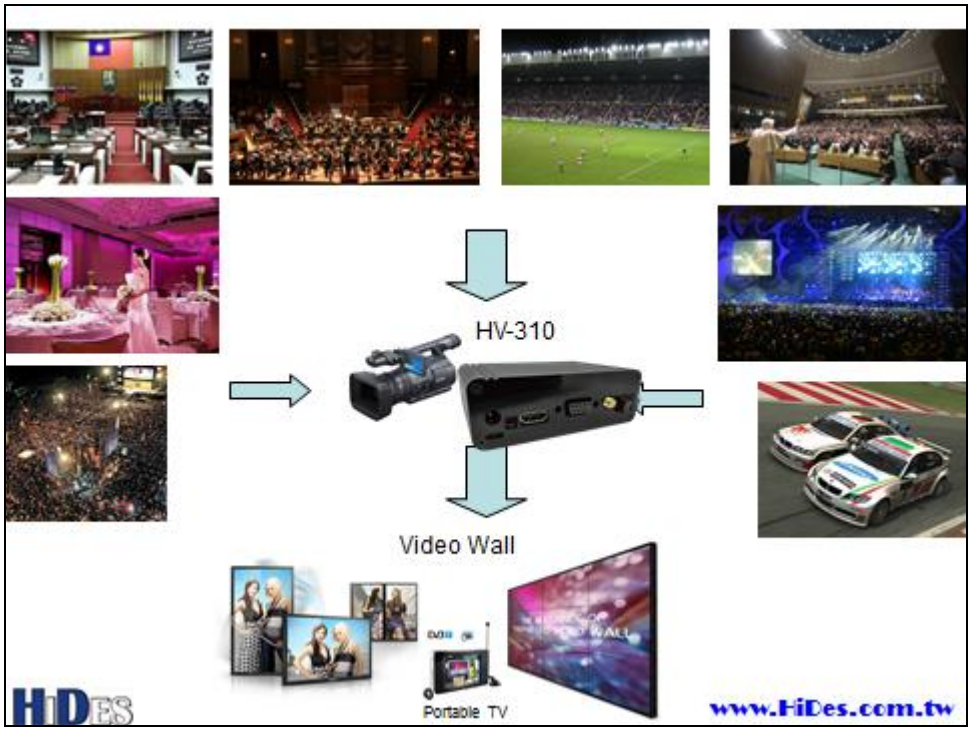
HV-320 Application Scenario-Wired



System Deployment Example – Daisy-Chain Bus Topology



HV-320 Application – Live Video Broadcast



HV-320 Application – Digital Signage

HV-320 Application – Entertainment HD Video Distribution