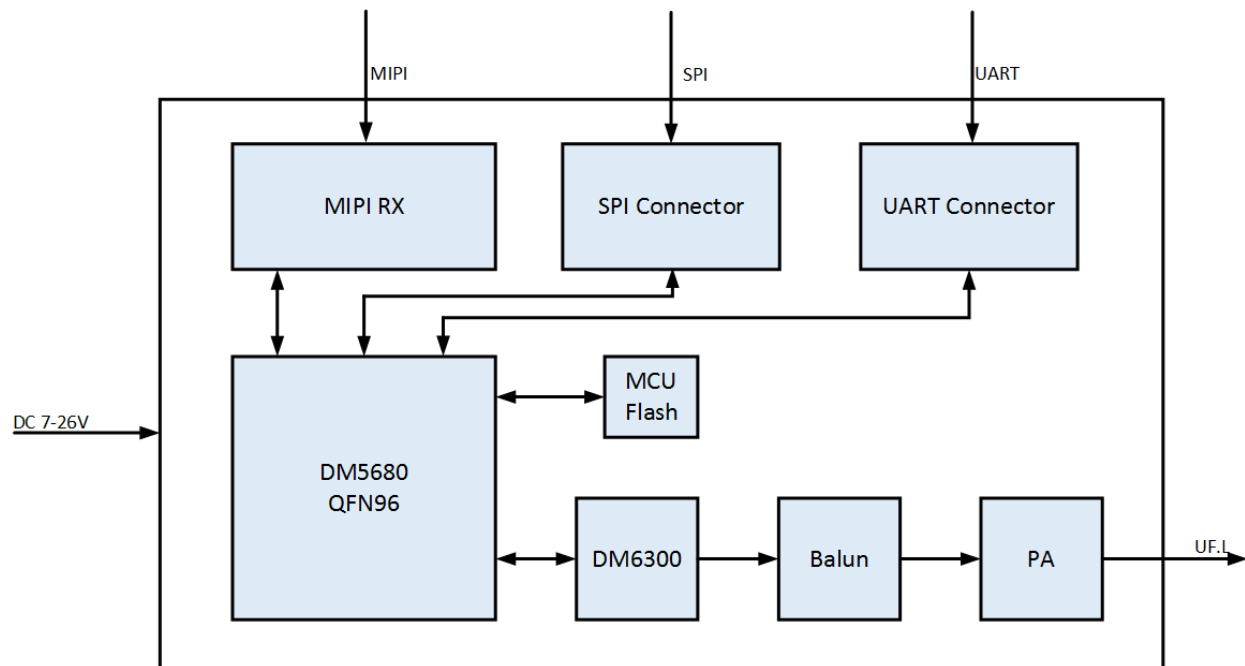


## Wireless Video Transmitter Module with HDZero™

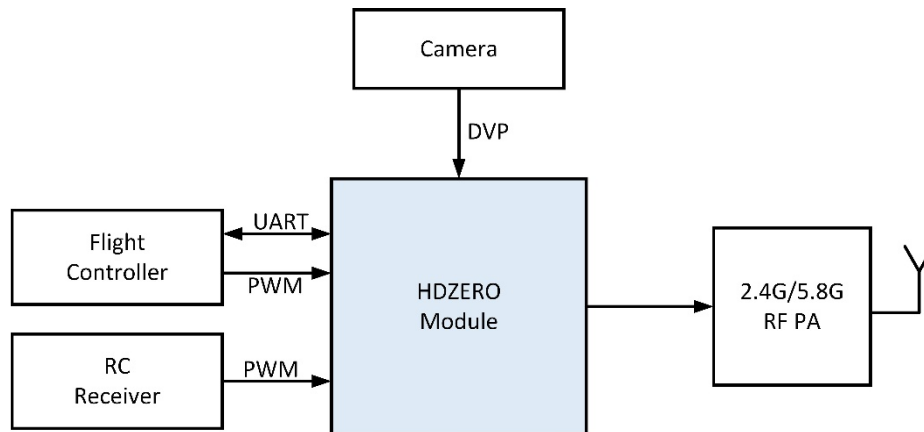
### Features

- Wireless video transmitter
  - No video compression needed
  - Less than 1ms latency
  - Up to 1080P30
  - Smart de-noise
- Video interface
  - MIPI
- Audio interface
  - I2S
- Peripherals
  - UART
  - GPIO
- Radio frequency band
  - 5.8G (5806Mhz/5769 Mhz)
- 7-28vpower supplies
- Low power operation, typical 5w
- Application
  - First Person View (FPV)
  - Unmanned Aerial Vehicle (UAV)
  - Unmanned Ground Vehicle (UGV)
  - Wireless medical
- DM5680 inside
- DM6300 inside

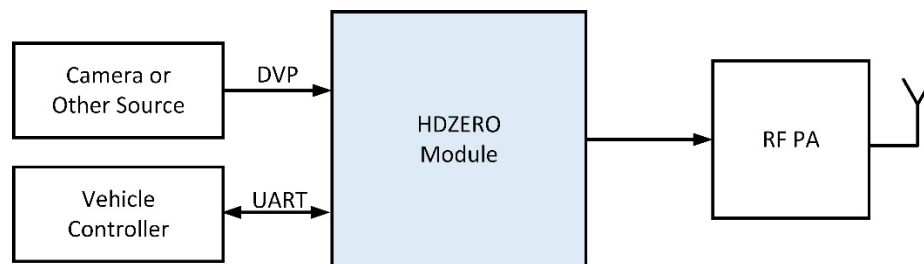
### Block Diagram



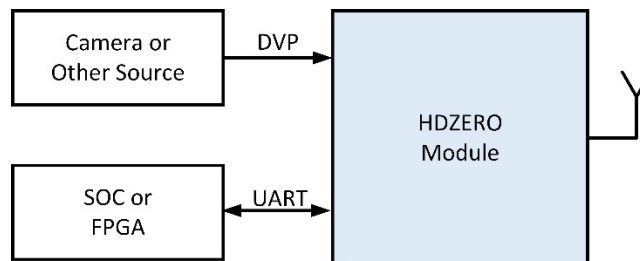
## FPV Application: Glass to Glass Delay < 30ms



## UV Application: Glass to Panel Delay < 80ms



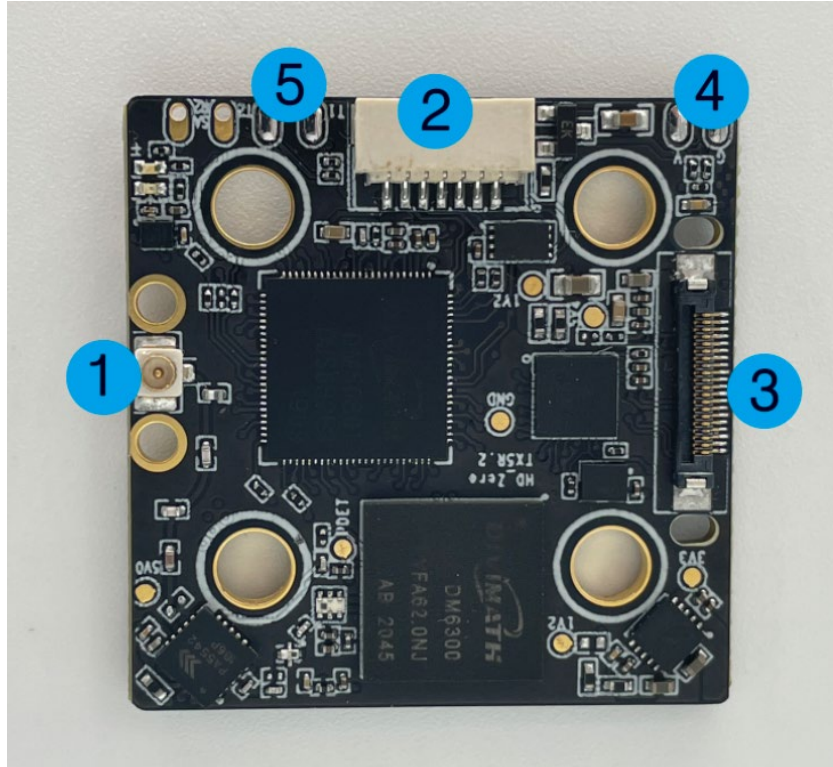
## Low Power Consumption Application: The TX power consumption is less than 1W



## Function Description

Function Description	
Frequency	5.8Ghz, 2Channels (5769MHz/5806 MHz)
Bandwidth	20MHz
Glass-to-Glass Latency	25ms
RF connector(s)	1x U.FL
Link Latency	Less than 1ms
Distance	29km (line of sight, 520Mhz, 1W) 2.3km (line of sight, 5.8Ghz, 200mW)
Video Interface	MIPI
Video Format	MIPI-CSI
Audio Interface	I2S
Host Interface	UART
Firmware Update Interface	SPI
Moving Speed	200km/h high speed
Input Voltage	DC 7-26V
Power consumption	0.5A@12V
Size	34mm×34mm
Weight	5g
Working Temperature	-20℃~65℃

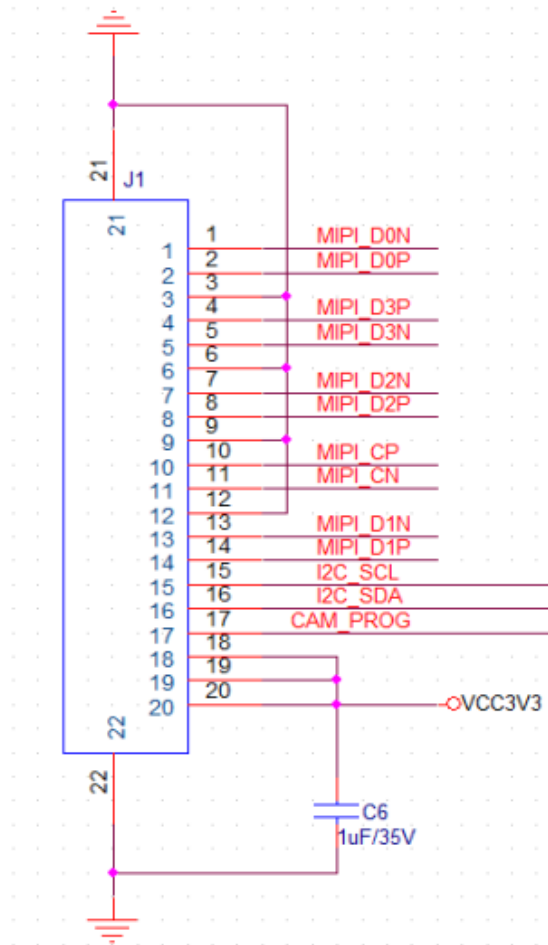
## PCB Packaging and Size



NAME	NUMBER	DESCRIPTION
UFL-R-SMT	1	Connect to antenna
SPI	2	Firmware update
MIPI	3	Video input
DC	4	7-26V
UART	5	Connect to Flight controller
1. Size of Positioning hole: $\phi$ 4mm		

# Interface Specification

## MIPI Pin Configuration



## FPC PIN Function Descriptions

NAME	NUMBER	TYPE	DESCRIPTION
Digital video interface			
DVP_D [15:0]	30,31,32,33,34,35,36,37,38,39,40, 41,42,43,44,45	IO	Digital Video Port data bus
DVP_DE	26	IO	Digital Video Port data bus
DVP_HS	22	IO	Digital Video Port data bus
DVP_VS	24	IO	Digital Video Port data bus
DVP_PCLK	28	IO	Digital Video Port data bus
Serial Audio Interface			
I2S_ACLK	7	IO	Serial audio clock
I2S_WS	8	IO	Serial audio word clock
I2S_DAT	9	IO	Serial audio data
Control Interface			
GPIO_0	18	IO	GPIOs controlled by DM5680
GPIO_1	17	IO	GPIOs controlled by DM5680
UART_TX	20	IO	UART connected to DM5680
UART_RX	19	IO	UART connected to DM5680
Firmware Interface			
OE	11	IO	SPI select
SPI1_DO	12	IO	SPI interface to MCU flash
SPI1_DI	13	IO	SPI interface to MCU flash
SPI1_CLK	14	IO	SPI interface to MCU flash
SPI1_CS	15	IO	SPI interface to MCU flash

Power and Ground Pins			
VIN_5V	1,2,3,4,5		5V Power in
GND	6,10,16,21,23,25,27,29		Ground

Pin No	Pin Name	Direction	Definition
1	MIPI_D0N	CAM → VTX	Differential MIPI Lane 0
2	MIPI_D0P		
3	GND	Ground	
4	MIPI_D3P	CAM → VTX	Differential MIPI Lane 3
5	MIPI_D3N		
6	GND	Ground	
7	MIPI_D2N	CAM → VTX	Differential MIPI Lane 2
8	MIPI_D2P		
9	GND	Power	Ground
10	MIPI_CP	CAM → VTX	Differential MIPI Clock
11	MIPI_CN		
12	GND	Ground	
13	MIPI_D1N	CAM → VTX	Differential MIPI Lane 1
14	MIPI_D1P		
15	I2C_SCL	CAM ↔ VTX	Dedicated pin to encryption IC
16	I2C_SDA	Dedicated pin to encryption IC	
17	CAM_PROG	CAM ← VTX	Analog level signal for camera setting
18	VCC3V3	CAM ← VTX	3.3V, max current 200mA
19	VCC3V3		
20	VCC3V3		
21	GND	Ground	
22	GND		





## FCC Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## FCC Radiation Exposure Statement

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## OEM INTEGRATION INSTRUCTIONS:

Attention: Limited Modular Approval - this RF Module may not be sold to the generic public and requires professional installation. Due to the fact that this RF Module is not equipped with an own shielding, the end-product incl. this RF Module has to show compliance to the FCC rules(15C / radiated emissions).

(OEM) Integrator has to assure compliance of the entire end-product incl. the integrated RF Module. Additional measurements (15C) and/or equipment authorizations (e.g either a complete new certification or a Class II Permissive Change) may need to be addressed depending on co-location or simultaneous transmission issues if applicable.

Integrator is reminded to assure that these installation instructions will not be made available to the end-user of the final host device.

The Integrator will be responsible to satisfy SAR/ RF Exposure requirements, when the

module integrated into any (portable) host device.

The final host device, into which this RF Module is integrated" has to be labeled with an auxiliary label stating the FCC ID of the RF Module, such as "Contains FCC ID: 2A2O6HDZ3100".

To be authorized as an FCC Part 15 device, the host product may also need to be evaluated against the FCC Part 15B criteria's for unintentional radiators.

The modular transmitter test with the IPEX antenna manufactured by Dongguan Fangge Electronics Co., Ltd. Integrator should be use the same or lower gain antenna gain on the end device.

Antenna	Maximum Antenna Gain
U.FL connector dipole antenna <a href="https://detail.1688.com/offer/564908771339.html?spm=a2615.7691456.autotrace-offerGeneral.16.1ca011eai1ygf7">https://detail.1688.com/offer/564908771339.html?spm=a2615.7691456.autotrace-offerGeneral.16.1ca011eai1ygf7</a>	2.0dBi