

**HD-SDI RX**  
**WIRELESS MODULE – FALCON RX**  
**AMN36254**  
**USER GUIDE 1.0**



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# Revision History

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Version	Date	Description
1.0	February 17,2013	Initial Release

Preliminary

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Preliminary

## Introduction

The **AMN36254** is wireless A/V receiver board, which works at the 5GHz unlicensed band.

It is are based on AMIMON's WHDI Professional chipset that consist of the AMN2220\_A4W baseband receiver and the MAXIM 2850 ICs, presents the ultimate solution for HD-SDI receiver of the WHDI system. The perfect HD/SD video, audio quality, the high robustness and the invisible latency of the wireless system are unmatched by any other wireless technology and presents a true alternative to cable. The WHDI system transmits **uncompressed** video and audio streams wirelessly and thus simplifies and eliminates system issues, such as: lip-sync, large buffers and other burdens like retransmissions or error propagation.

### System Technical Specifications:

<b>Video Resolution:</b>	1080p/50, 1080p/60, 1080/59.94i, 1080/50i, 1080/29.97p, 1080/23.98p, , 720/59.94p, 720/50p, 525i/59.94, 625i/50, 1080/24p, 1080/24PsF, 1080/23.98PsF,1080/25PsF
<b>Frequencies:</b>	Non-DFS Frequencies: 5.15 ~ 5.25 GHz 5.725~5.825 GHz DFS Frequencies: 5.25 ~ 5.35 GHz 5.47 ~ 5.725 GHz
<b>Video Interface:</b>	Two SDI outputs over 75 Ohm BNC.
<b>Environment:</b>	Operational - 0:40° C, 10%~90% humidity Storage - 0:55° C, 10%~90% humidity
<b>Range:</b>	Up to 50 meter line of sight.
<b>Audio:</b>	Over SDI

Table 1: *Technical Specifications*

### Receiver Specifications:

Receiver AMN36254	
<b>Video Interface:</b>	SDI splitter Option to connect external connector board
<b>Antenna:</b>	4 receiving +1 transmitting/ receiving
<b>Voltage:</b>	7-17 V
<b>Size:</b>	(L)130mm x (W)106mm x (H )13mm
<b>User interface:</b>	<ul style="list-style-type: none"><li>• 3 LEDs indicating Power, Video lock and Network lock</li><li>• USB connector for software update</li><li>• Reset button</li></ul>

Table 2: *Receiver Specifications*

# Chapter 2

## Overview

### 2.1 AMN36254 WHDI Sink (RX):

The **AMN36254** WHDI Sink is designed to be at the receiver end of the WHDI downstream. The **AMN36254** receives wireless downstream transmission, demodulates it and regenerates the video, audio and control content transmitted by the AMN35254 WHDI source. The receiver works at the 5GHz unlicensed band.

#### 2.1.1 AMN36254 - General Guidelines (Rx)

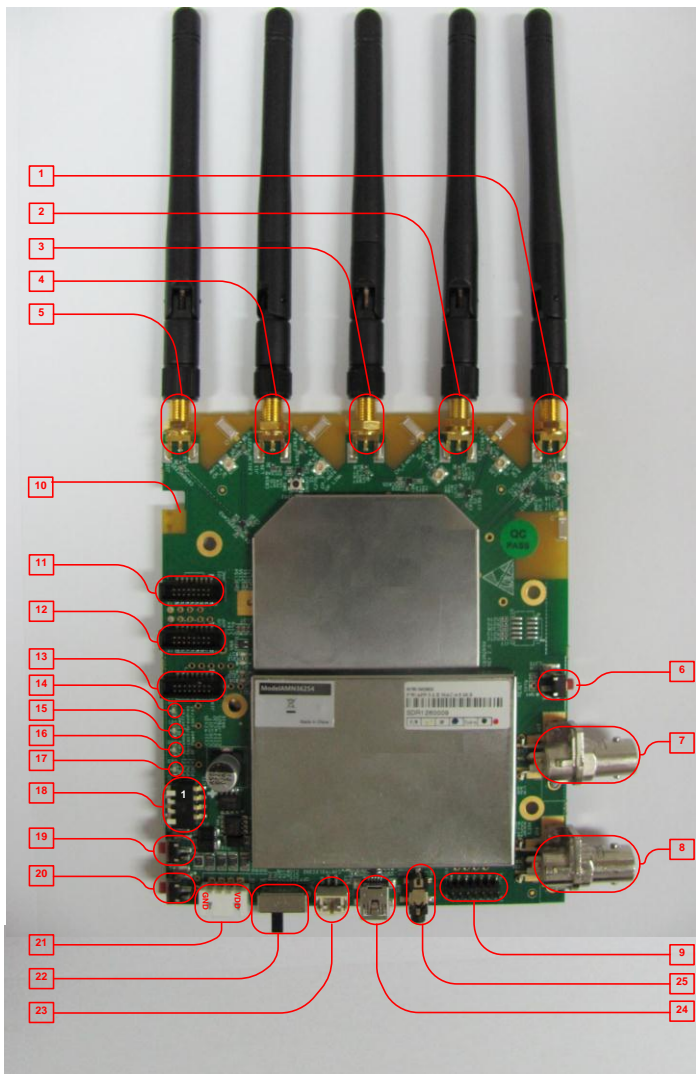


Figure 1 – Rx AMN36254

01- Down link antenna CH#0	16- LED #2
02- Down link antenna CH#1	17- LED #1
03- Down link antenna CH#2	18- DIP Switch
04- Down link /UPLINK antenna CH#3	19- TBD
05- Down link antenna #4	20- Boot Button
06- Reset Button	21- Input Voltage connector 7-17v
07- HD-SDI output1	22- ON/OFF Switch
08- HD-SDI output2	23- External On/Off switch connector
09- FPGA JTAG port	24- USB
10- DFS antenna (located on PS)	25- IR
11- MAC DEBUG Port	
12- APP DEBUG Port	
13- Interface connector	
14- LED #4	
15- LED #3	

### 2.1.2 LEDs

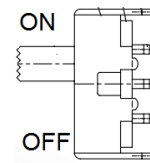
- 1- Power- the LED is ON when the power is applied and the ON/OFF switch is ON
- 2- Video Lock (Gennum lock)
- 3- Network (blink while searching, solid on when connected to Tx)
- 4- Unused.



### 2.1.3 On/Off switch

System has a main switch that turns on and off.

The system is active when the switch is near J1 (voltage input connector)



### 2.1.4 Boot button

Boot mode is a technical mode. In order to operate this mode you should hold "Boot button" for 5 seconds, when the system wakes up and then press momentary and simultaneously the "Reset button".

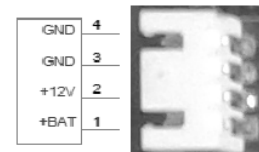
### 2.1.5 Reset button

The "Reset button" clears the dynamic memory and reboots the system.

### 2.1.6 Input Voltage connector

Input voltage connector contains 4 pins,

- 1: +BAT.
- 2: Power supply.
- 3: GND.
- 4: GND.



## 2.1.7 Microcontroller

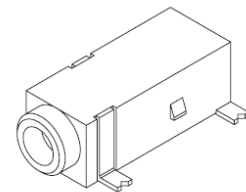
The connectivity line, ARM-based, 32-bit STM32F103 chip is used as the AMN36254 microcontroller. It includes the following:

- 128 KB Flash Memory
- USB Interface device with Mini-B connector
- IR Blaster
- UART
- JTAG
- SPI to Baseband and SPI
- Power Jack
- 3 LEDs indicators – power, video lock and network lock
- Software reset Push Buttons
- Reset Button
- 3 DIP Switches
- USB for software update
- Hidden button for registration
- Hidden button for Reset
- IR option with micro jack connector to place the IR outside the box

## 2.1.8 IR blaster

AMN35254 support PWM interface to IR blaster via audio 2.5mm jack, for mechanical dimensions of the audio jack follow the datasheet

<http://www.cui.com/pdf/files/SJ-2523-SMT.pdf>, Silk number: U47.

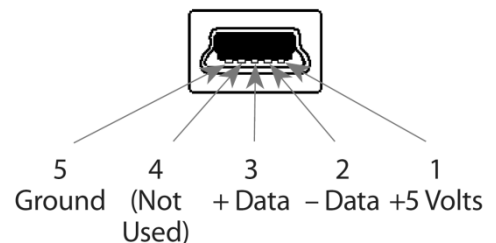


## 2.1.9 USB

There is a USB connector on board that is connected to the application uC.

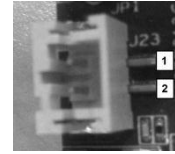
This will be used for software upgrade through WHDI monitor.

USB type: USB mini-B connector, Silk number J15.



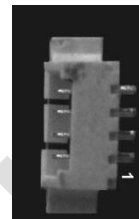
### 2.1.10 External On/Off switch connector

This connector is used for external On/Off switch, Pin 1 is VDD, Pin 2 is Power Enable.



### 2.1.11 I2C connector

I2C Host interface connector is used for transferring I2C protocol message between the host chip (Micro Controller STM32F103) and the slave component.  
Pin-1: 3.3v, Pin-2: SCL Pin-3: SDA Pin-4: GND



## 2.2 Antennas

This module is authorized to be used only with the RP-SMA external antennas with 5dBi gain or less. The module also use 2dBi chip antenna for reception only.

## 2.3 Block Diagram

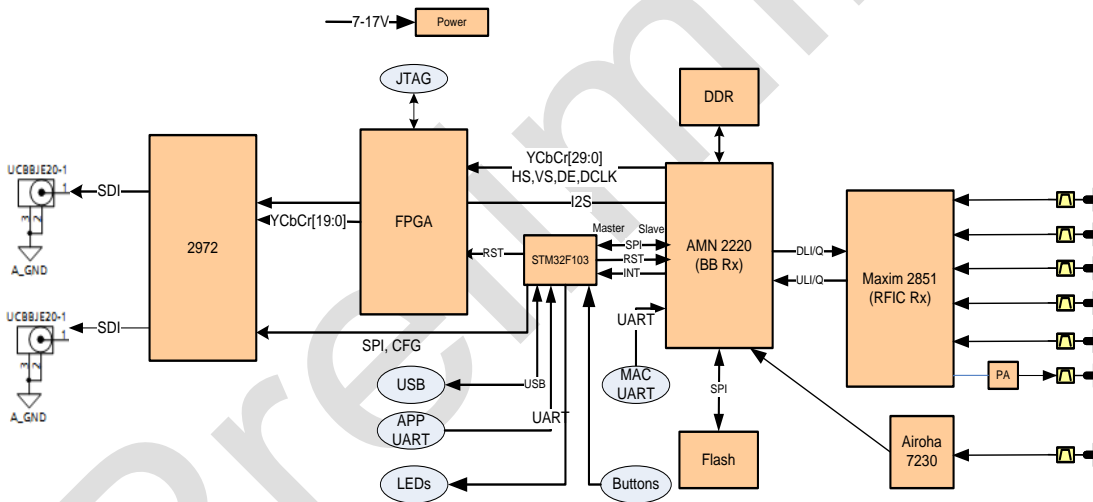


Figure 2 – Block Diagram

# FCC Caution

*Any changes or modifications not expressly approved by the responsible party could void the user's authority to operate this equipment.*

**Notice:**

*This module in its final integration requires the end-product to continue to comply with DFS requirements. A class II permissive change may be required for operation not already described in the FCC Grant filing.*

**OEM Labeling Requirements**

*Notice: The OEM of final integrator must ensure that FCC labeling requirements are met.*

*For a host using this module, if (1) the module's FCC ID is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module should be used, with the following contents: **Contains FCC ID:VQSAMN36254.***

*The host OEM user manual must also contain clear instructions on how end users can find and/or access the module and the FCC ID.*

*The applicable usage is to be used as a wireless device, connected to the back of a professional camera and transmitting live video, coming from BNC connectors*

**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 in-stalled 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 a particular installation.*

**FCC Radiation Exposure Statement**

*This equipment 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.*

*This equipment 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.*

*The antenna used for transmission must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.*