

## ISP090903 WHDI Transmit Module

### Features

- Video transmission from STB, game console, Blu-ray or AV-R player, to Large Screen TV or Projector
- WHDI Transmitter: uncompressed Full-HD video quality. WHDI 1.0 compliance, including HDCP 2.0
- 23 x 26 x 4.5 mm
- Up to Full HD 1080p 60Hz, UXGA video resolution
- Audio support: S/PDIF + 4 x I2S Audio 192 kHz 24 bit
- Uses 5GHz ISM band
- “Deep Color support:”, Up to 12 bits per colour: 36 bit RGB or YCrCb
- MIMO Configuration
- Strong 256-bit AES encryption
- Less than 1mSec latency between source and sink
- DFS compliance (enabling more RF channels)
- Frame buffer available for best quality (still pictures & video)

### Description

The ISP090903 module is based on AMN122 Robin Transmit platform. The Robin platform is based on MAX2850 RFIC, AMN2120 baseband IC and all serial and AV interfaces. Parts of the RF front end are integrated within the structure of the module to enable size optimization.

MAX2850 is a MIMO transmitter specifically designed for WHDI™ applications using OFDM modulation. This solution allows transmission of high quality audio and video, without compression, over a distance of 15 to 50 m depending on the environment.

The form factor of the module is 23 x 26 x 4.5 mm. Since the MAX2850 has four direct-conversion transmitters and one zero-IF uplink receiver, the module makes use of a total of 6 antennas; 4 antennas associated with the 4 output RF channels, and 2 antennas associated with the input channel. The 2 input receiving antennas may be used in parallel to the transmitting antennas for a total of 4 antennas. These antennas need to support a MIMO configuration in order to optimize the link budget.

## Functional Block Diagram

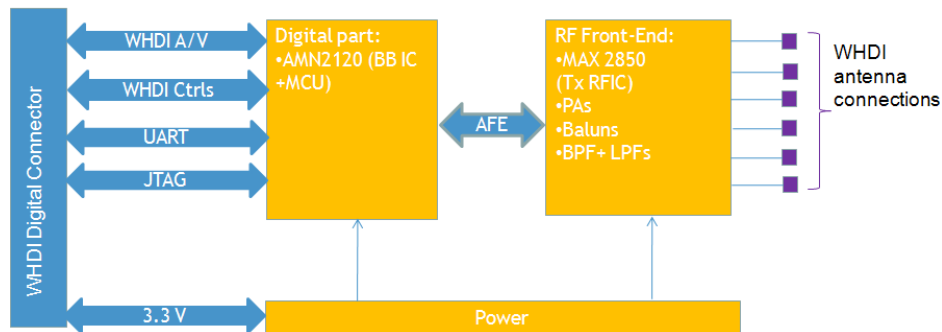


Figure 1: Functional diagram of the WHDI transmitter module.

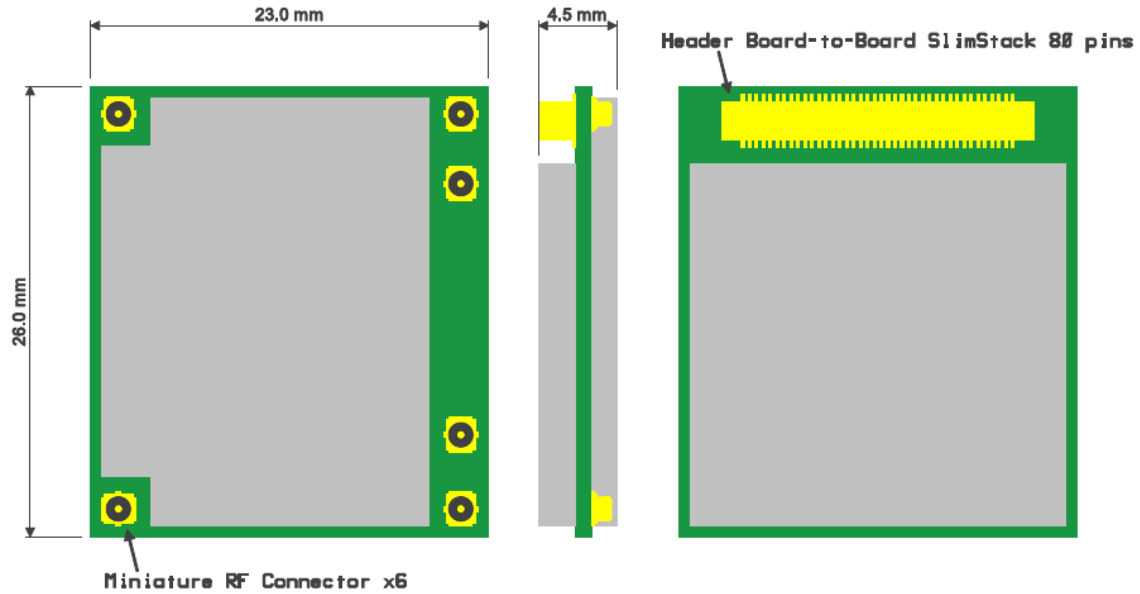
## Electrical Specifications

### Power Supply at Tcase 90°C T ambient 65°C

Parameter	Value	Unit
<b>Supply voltage</b>		
Digital Supply Voltage	3.3	V
RF Supply Voltage	3.3	V
Max Current on digital +3.3V	590	mA
Max Current on RF +3.3V	1290	mA

## RF characteristics

Parameter	Value	Unit
Max RF Output Power per channel	+18	dBm
RF Power range	TBC 5 to 18	dBm
Max range (NLOS)	up to 50	m

**Mechanical Drawings**

Preliminary Information Subject to

## Pin Connection Table

Pin #	Name	Pin #	Name
1	WHDI_INT_IN	2	WHDI_RESET_OUT
3	WHDI_IN_OUT	4	WHDI_S_MISO
5	WHDI_PWM0	6	WHDI_S_MOSI
7	WHDI_PWM1	8	WHDI_S_SCLK
9	WHDI_M_SCL	10	WHDI_SS
11	WHDI_M_SDA	12	WHDI_REF_CLK_OUT
13	WHDI_RESET_IN	14	WHDI_SPDIF
15	WHDI_SCLK	16	WHDI_I2S_D0
17	WHDI_I2S_D1	18	WHDI_I2S_D2
19	WHDI_I2S_D3	20	WHDI_LRCLK
21	WHDI_MCLK	22	WHDI_D0
23	WHDI_D1	24	WHDI_D2
25	WHDI_D3	26	WHDI_D4
27	WHDI_D5	28	WHDI_D6
29	WHDI_D7	30	WHDI_D8
31	WHDI_D9	32	WHDI_D10
33	WHDI_D11	34	WHDI_D12
35	WHDI_D13	36	WHDI_D14
37	WHDI_D15	38	WHDI_D16
39	WHDI_D17	40	WHDI_D18
41	WHDI_D19	42	WHDI_D20
43	WHDI_D21	44	WHDI_D22
45	WHDI_D23	46	WHDI_D24
47	WHDI_D25	48	WHDI_D26
49	WHDI_D27	50	WHDI_D28
51	WHDI_D29	52	WHDI_D30
53	WHDI_D31	54	WHDI_D32
55	WHDI_D33	56	WHDI_D34
57	WHDI_D35	58	WHDI_DE
59	WHDI_H_SYNC	60	WHDI_V_SYNC
61	WHDI_DCLK	62	GND
63	GND	64	GND
65	GND	66	GND
67	GND	68	GND
69	GND	70	GND
71	GND	72	GND
73	3V3_SHACHAF	74	3V3

Pin #	Name	Pin #	Name
75	3V3_SHACHAF	76	3V3
77	3V3_SHACHAF	78	3V3
79	3V3_SHACHAF	80	3V3

Preliminary Information Subject to Change CONFIDENTIAL