



# Universal Development Kit v3.0 User Guide

## AirPrime SL Series



**SIERRA**  
WIRELESS

WA\_DEV\_SL6087\_UGD\_003  
004  
March 24, 2011

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## Document History

Version	Date	Updates
001	May 10, 2010	Creation
002	September 02, 2010	Removed Battery Charging information.
003	September 24, 2010	Updated for Revision 3.0 PCB – added information for SL80xx support.
		Added information for JTAG.
004	March 24, 2011	Added information for SL501x support.
		Added section 10.3 AirPrime SL80xx Socket Board.

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# 1. Overview

This document describes the Universal SL Development Kit v3.0 and how it integrates with the AirPrime SL Series Intelligent Embedded Module via a socket board. This document discusses the different interface and peripheral connections supported by the AirPrime SL Development Kit and provide schematics to facilitate the user's understanding and configuration of the development kit board for their own application use.

The AirPrime SL Development Kit Board may be used to develop both software and hardware applications based on the AirPrime SL Series embedded module (SL6087, SL80xx and SL501x). Note however that in order to use the development kit with the embedded module, the embedded module must be soldered-down to a corresponding socket board.

For more information about the AirPrime SL Series embedded modules and the Sierra Wireless Software Suite, refer to the documents listed in section 8 Reference Documents.

## 2. General Description

This section gives a brief overview of the AirPrime SL Development Kit and briefly describes the interfaces and special jumper pads available. It also lists all available test points on the development kit board.

### 2.1. RoHS Compliance

The AirPrime SL Development Kit board is compliant with RoHS (Restriction of Hazardous Substances in Electrical and Electronic Equipment) Directive 2002/95/EC which sets limits for the use of certain restricted hazardous substances. This directive states that “from 1st July 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE)”.

The AirPrime SL series embedded module is also compliant with this directive and is identified by the RoHS logo on its label.



### 2.2. AirPrime SL Development Kit

The AirPrime SL Development Kit is used to allow users to create and define applications using the AirPrime SL Series embedded module.

#### 2.2.1. Top View

The development kit version number is printed on the board next to the Sierra Wireless logo.

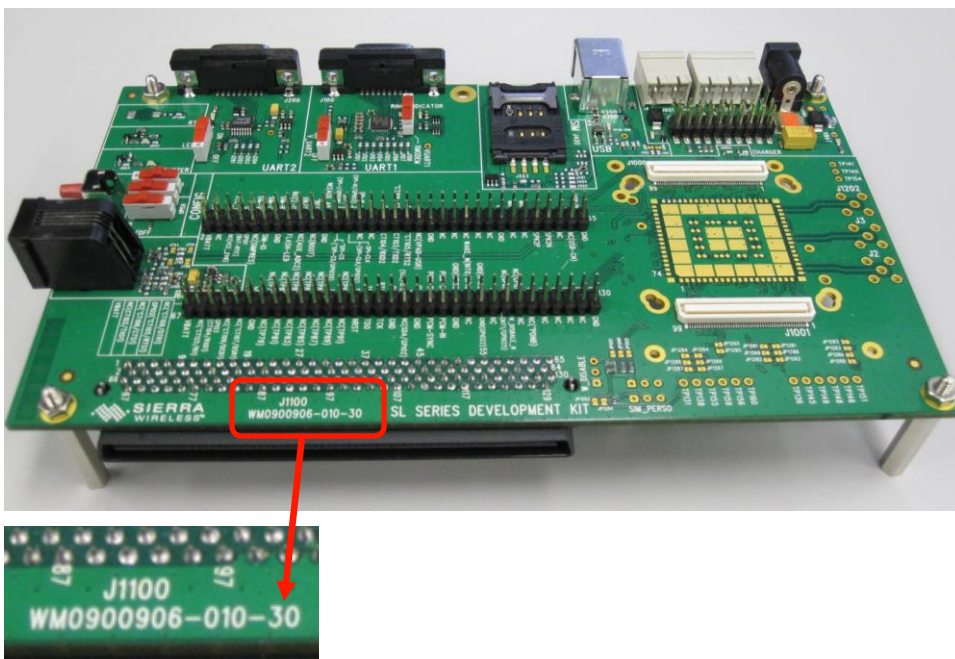


Figure 1. Universal SL Development Kit v3.0 (Top View)

## 2.2.2. Bottom View

The J1100 connector can be used as a daughter board interface when implementing applications with the AirPrime SL Series embedded module. Refer to document [6] AirPrime WMP100 Development Kit User Guide for more information about the external board connector pin assignments.

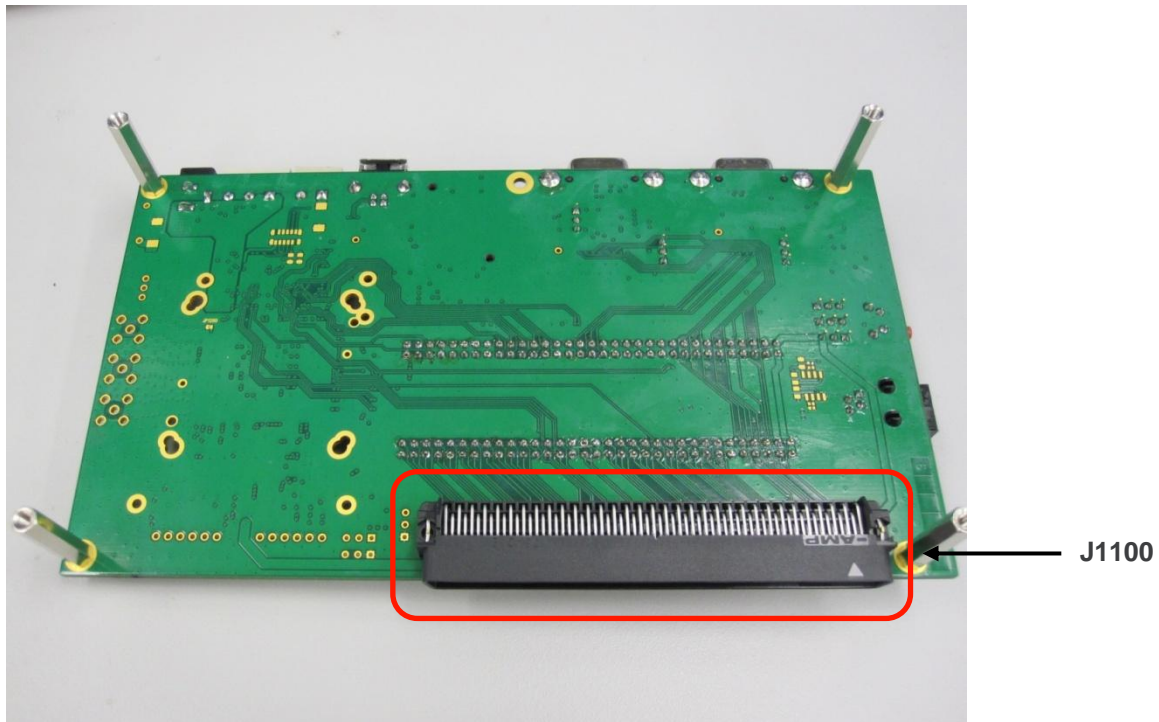


Figure 2. Universal SL Development Kit v3.0 (Bottom View)

## 2.3. Socket Board

The socket board is used to interface the AirPrime SL Series embedded module with the SL Development Kit. The socket board provides a changeable interface for the SL series embedded modules using the same set of peripheral devices, and it varies depending on which SL series embedded module is used.

Refer to section 10 Appendix for further information about the AirPrime SL Development Kit and the available Socket Boards.

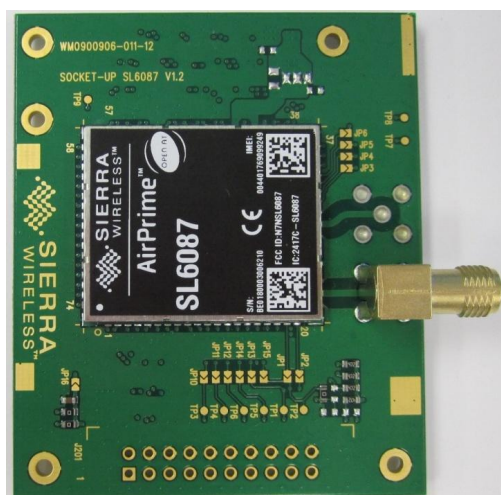


Figure 3. AirPrime SL6087 Socket Board with the AirPrime SL6087 Embedded Module (Top View)

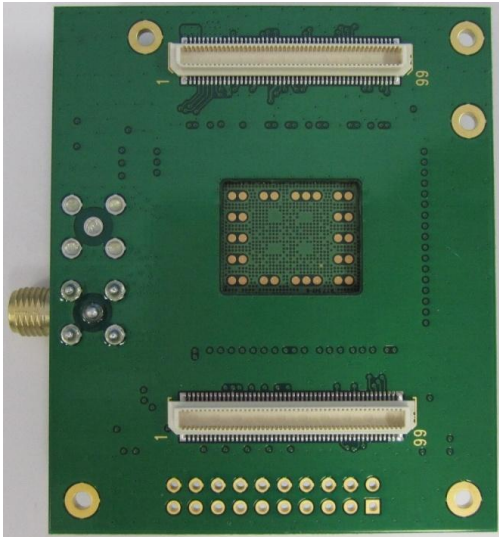


Figure 4. AirPrime SL6087 Socket Board with the AirPrime SL6087 Embedded Module (Bottom View)



Figure 5. AirPrime SL80xx Socket Board with the AirPrime SL8090 Embedded Module (Top View)



Figure 6. AirPrime SL80xx Socket Board with the AirPrime SL8090 Embedded Module (Bottom View)



Figure 7. AirPrime SL501x Socket Board with the AirPrime SL5011 Embedded Module (Top View)

### 2.3.1. Socket Board Component Placement Diagrams

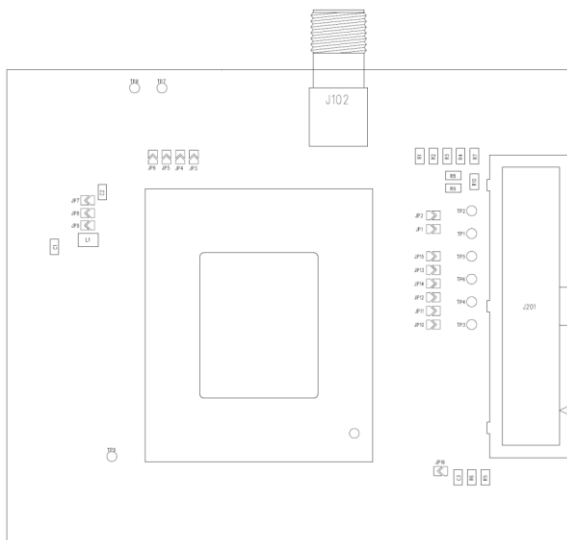


Figure 8. AirPrime SL6087 Socket Board (Top View)

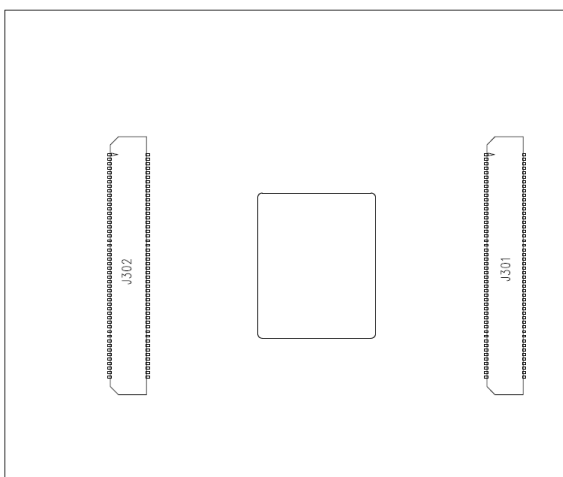


Figure 9. AirPrime SL6087 Socket Board (Bottom View)

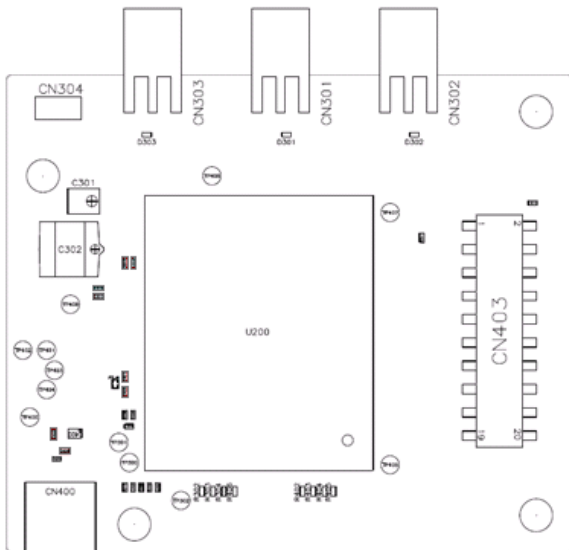


Figure 10. AirPrime SL80xx Socket Board (Top View)

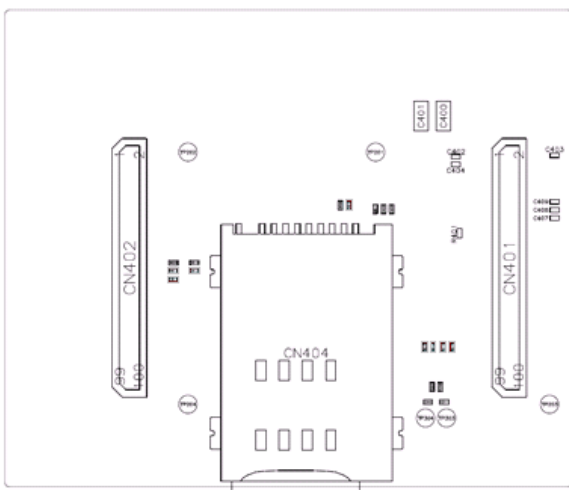


Figure 11. AirPrime SL80xx Socket Board (Bottom View)

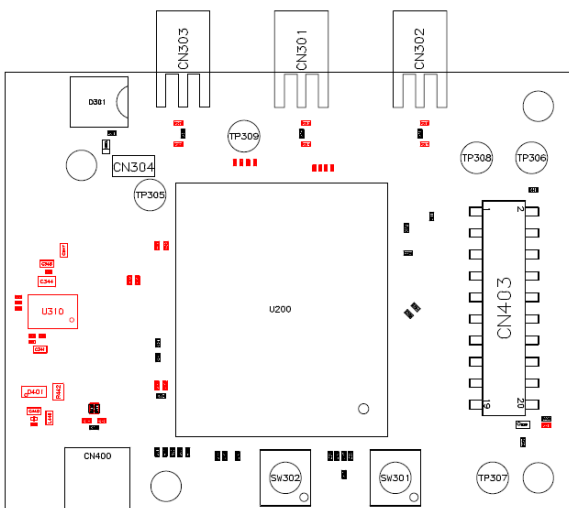


Figure 12. AirPrime SL501x Socket Board (Top View)

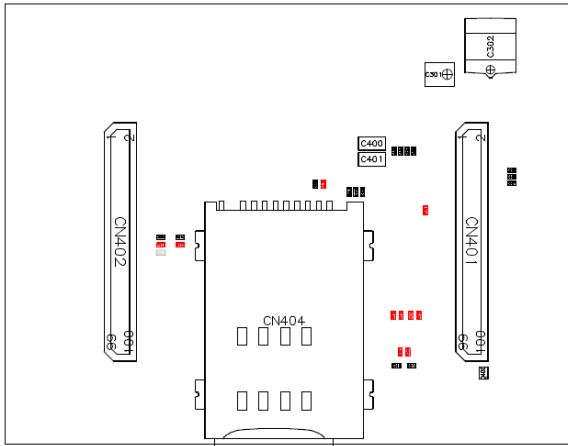


Figure 13. AirPrime SL501x Socket Board (Bottom View)

## 2.4. Special Soldering for Jumper Pads

PCB jumper prints are used to electrically connect or disconnect peripherals between the AirPrime SL series embedded module and the AirPrime SL Development Kit.

To connect signals between the AirPrime SL series embedded module (from J1000 and J1001) and the dedicated connectors on the AirPrime SL Development Kit, solder the PCB jumper prints specified in section 2.5 Default Soldering Configuration for Jumpers.

To connect signals between the socket board and the external board connector (J1100), it is recommended NOT to solder the PCB prints. Instead, a daughter board can be prototyped to connect the socket board directly through the board connector (J1100).

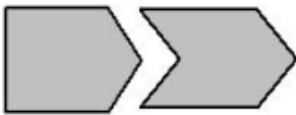


Figure 14. Jumper Solder Pad



The interfaces (and signals) listed below could be electrically removed by dissociating the following PCB jumper prints:

- Power supply of the AirPrime SL Development Kit interfaces (All components from J605, except for the AirPrime SL series embedded module. For more information, refer to section 7 Current Consumption Measurement.)
- SIM (from J401 to J405)
- UART1 (from J101 to J108)
- UART2 (from J201 to J204)
- USB (from J301 to J302)
- AUDIO2 (from J702 to J705)
- FLASH-LED signal (J602)
- BUZZ-OUT signal (J603)

## 2.5. Default Soldering Configuration for Jumpers

The following sub-sections display the default soldering configuration for jumpers on both the development kit board and on the different socket boards.



## 2.5.2. Socket Board

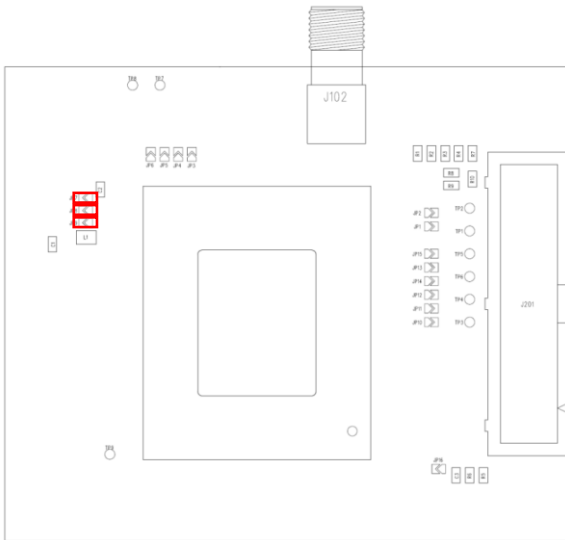


Figure 16. Default Soldering Configuration for Jumpers for the SL6087 Socket Board

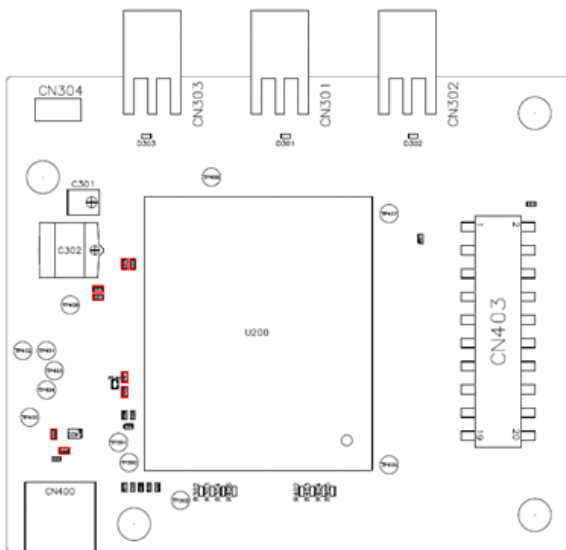


Figure 17. Default Soldering Configuration for Jumpers for the SL80xx Socket Board (Top View)

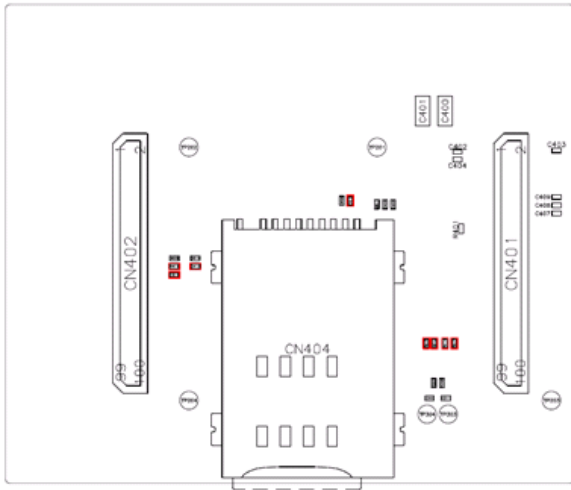


Figure 18. Default Soldering Configuration for Jumpers for the SL80xx Socket Board (Bottom View)

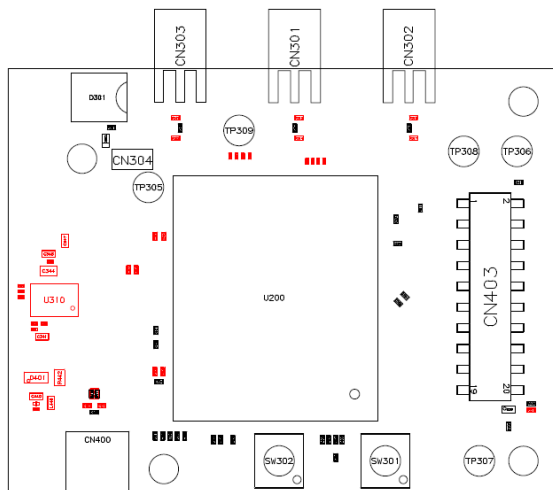


Figure 19. Default Soldering Configuration for Jumpers for the SL501x Socket Board (Top View)

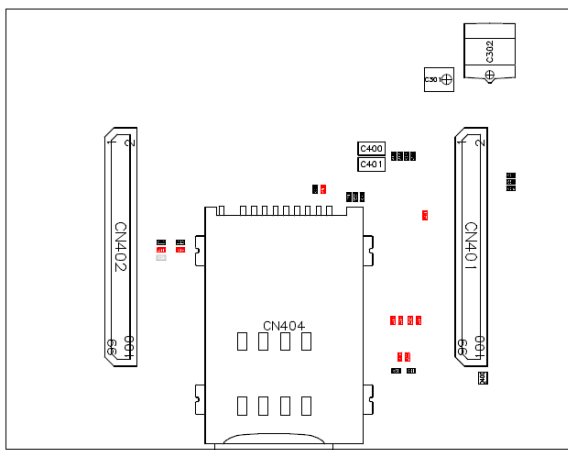


Figure 20. Default Soldering Configuration for Jumpers for the SL501x Socket Board (Bottom View)

## 2.6. Interfaces

Interfaces available on the AirPrime SL Development Kit which are supported on the various SL series embedded modules are listed in the table below.

**Table 1. Interfaces Available on the SL Series Embedded Module**

SL6087	SL8080	SL809x, SL8081, SL8083	SL501x
External board to board connector and test point (TP) to access all signals for the adaptor board	External board to board connector and test point (TP) to access all signals for the adaptor board	External board to board connector and test point (TP) to access all signals for the adaptor board	External board to board connector and test point (TP) to access all signals for the adaptor board
Serial link RS232, UART1* with full signals	Serial link RS232, UART1* with four signals**	Serial link RS232, UART1* with four signals**	Serial link RS232, UART1* with four signals
Ring Indicator	--	--	--
Serial link RS232, UART2* with four signals	--	--	--
Slave USB*, with SoftConnect™ signal. USB 2.0 Compliant (full speed)	Slave USB*, with SoftConnect™ signal. USB 2.0 Compliant (full speed)	Slave USB*, with SoftConnect™ signal. USB 2.0 Compliant (full speed)	Slave USB*, with SoftConnect™ signal. USB 2.0 Compliant (full speed)
SIM* (1.8/3V)	SIM* (1.8/3V)	SIM* (1.8/3V)	SIM* (1.8/3V)
1 Audio connector (AUDIO2)	1 Audio connector (AUDIO2)	--	--
LEDs for several indications	LEDs for several indications	LEDs for several indications	LEDs for several indications
Power supply connectors	Power supply connectors	Power supply connectors	Power supply connectors
RESET Pushbutton	RESET Pushbutton	RESET Pushbutton	RESET Pushbutton
ON/OFF switch	ON/OFF switch	ON/OFF switch	ON/OFF switch
BOOT switch	--	--	--
Buzzer LED	Buzzer LED	Buzzer LED	Buzzer LED
Flash LED	Flash LED	Flash LED	Flash LED

\* These signals from the connector side can be electrically disconnected from the AirPrime if the related jumper pads are dissociated. Refer to section 2.7 Available Test Ports on the AirPrime SL Development Kit for more information regarding jumper pads.

\*\* The SL80xx can be configured to support full UART. Refer to document [3] AirPrime SL809x Product Technical Specification and Customer Design Guidelines for more information.

## 2.7. Available Test Ports on the AirPrime SL Development Kit

There are a total of 130 test ports available in the AirPrime SL Development Kit. The following figure shows the location of these test ports in the AirPrime SL Development Kit and the table below lists their corresponding pin assignments.



Table 2. AirPrime SL Development Kit Test Ports

Test Port	Pin Assignment (Signal) for SL6087	Pin Assignment (Signal) for SL80xx	Pin Assignment (Signal) for SL501x
1	VBATT	VCC_3V6	VBATT
2	VBATT	VCC_3V6	VBATT
3	NC	NC	NC
4	NC	NC	NC
5	VCC_1V8	VREF_1V8	VCC_2V6
6	VCC_2V8	NC	NC
7	GND	GND	GND
8	BAT_RTC	GPIO1	GPIO1
9	SIM-VCC	EXT_VREG_USIM	SIM-VCC
10	SIMPRES	NC	NC
11	SIM-CLK	EXT_USIM_CLK	SIM-CLK
12	SIM-IO	EXT_USIM_DATA	SIM-IO
13	~SIM-RST	EXT_USIM_RESET	~SIM-RST
14	GND	GND	GND
15	BUZZ-OUT	BUZZER_EN	BUZZ-OUT
16	FLASH-LED	LED_FLASH	FLASH-LED
17	ON/OFF	POWER_ON_N	ON/OFF
18	AUX_ADC2	NC	GPIO5
19	~RESET	SYSTEM_RESET_N	~RESET
20	BOOT	NC	ADC2
21	AUX_ADC1	NC	NC
22	GND	GND	GND
23	SPI1-I/GPIO19	SPI_DATA_MISO	SPI1-I
24	~SPI1-CS/GPIO20	SPI_CS_N	~SPI1-CS
25	SPI1-IO/GPIO13	SPI_DATA_MOSI	SPI1-IO
26	SPI1-CLK/GPIO12	SPI_CLK	SPI1-CLK
27	NC	NC	NC
28	NC	NC	NC
29	NC	NC	NC
30	NC	NC	NC
31	GND	GND	GND
32	CT104/RXD2	UART1_RXD	CT104/RXD2
33	~CT106/CTS2	UART1_CTS_N	~CT106/CTS2
34	CT103/TXD2	UART1_TXD	CT103/TXD2
35	GND	GND	GND
36	~CT105/RTS2	UART1_RTS_N	~CT105/RTS2
37	NC	NC	NC
38	VPAD-USB	NC	NC
39	NC	NC	NC
40	GND	GND	GND
41	NC	NC	NC
42	NC	NC	NC

Test Port	Pin Assignment (Signal) for SL6087	Pin Assignment (Signal) for SL80xx	Pin Assignment (Signal) for SL501x
43	NC	NC	NC
44	NC	NC	NC
45	NC	NC	NC
46	NC	NC	NC
47	NC	NC	NC
48	NC	NC	NC
49	NC	NC	NC
50	NC	NC	NC
51	GND	GND	GND
52	GND	GND	GND
53	MIC2P	MIC1_P	MIC2P
54	NC	NC	NC
55	MIC2N	MIC1_N	MIC2N
56	NC	NC	NC
57	NC	NC	NC
58	SPK2P	SPK_P	SPK2P
59	NC	NC	NC
60	SPK2N	SPK_N	SPK2N
61	NC	NC	NC
62	NC	NC	NC
63	NC	NC	NC
64	USB-CN	NC	NC
65	USB-DET	NC	NC
66	VBATT	VCC_3V6	VBATT
67	VBATT	VCC_3V6	VBATT
68	CT103/TXD1	NC	NC
69	~CT125/RI1	NC	NC
70	~CT106/CTS1	NC	NC
71	CT104/RXD1	GPIO3	GPIO3
72	~CT105/RTS1	GPIO2	GPIO2
73	~CT109/DCD1	NC	NC
74	~CT108/DTR1	NC	NC
75	~CT107/DSR1	NC	NC
76	GND	GND	GND
77	GND	GND	GND
78	TP78	NC	NC
79	TP79	NC	NC
80	TP80	NC	NC
81	TP81	NC	NC
82	TP82	NC	NC
83	TP83	NC	NC
84	TP84	NC	NC
85	TP85	NC	NC



Test Port	Pin Assignment (Signal) for SL6087	Pin Assignment (Signal) for SL80xx	Pin Assignment (Signal) for SL501x
86	TP86	NC	NC
87	TP87	NC	NC
88	NC	NC	NC
89	TP89	NC	NC
90	TP90	NC	NC
91	TP91	NC	NC
92	TDI	TDI	TDI
93	NRST	TRST_N	NRST
94	TMS	TMS	TMS
95	TDO	TDO	TDO
96	RTCK	RTC	RTCK
97	TCK	TCK	TCK
98	GND	GND	GND
99	GND	GND	GND
100	SCL/GPIO1	NC	ADC1
101	SDA/GPIO2	NC	NC
102	GND	GND	GND
103	GND	GND	GND
104	PCM-CLK	PCM_CLK	PCM-CLK
105	PCM-SYNC	PCM_SYNC	PCM-SYNC
106	PCM-OUT	PCM_DOUT	PCM-OUT
107	PCM-IN	PCM_DIN	PCM-IN
108	GPIO24	GND	GND
109	GND	GND	GND
110	INT0/GPIO3	WAKE_N	WAKE_N
111	NC	NC	NC
112	GPIO23	GND	GND
113	GPIO22	GND	GND
114	NC	NC	NC
115	NC	NC	NC
116	GPIO21	NC	NC
117	INT1/GPIO25	W_DISABLE_N	W_DISABLE_N
118	GPIO0	GPIO0	GPIO4
119	NC	NC	NC
120	NC	NC	NC
121	~PDNB	NC	NC
122	NC	NC	NC
123	NC	NC	NC
124	NC	NC	NC
125	NC	NC	NC
126	NC	NC	NC
127	NC	NC	NC
128	NC	NC	NC

<b>Test Port</b>	<b>Pin Assignment (Signal) for SL6087</b>	<b>Pin Assignment (Signal) for SL80xx</b>	<b>Pin Assignment (Signal) for SL501x</b>
129	NC	NC	NC
130	NC	NC	NC



# 3. Setting Up the AirPrime SL Development Kit

The following section describes how the AirPrime SL Development Kit and the Socket Board (with the AirPrime SL Series embedded module soldered-down) are setup. It also briefly describes how communication tests are done to ensure that the AirPrime SL Series Embedded Module has been properly connected to the AirPrime SL Development Kit.

## 3.1. Setting Up the AirPrime SL Development Kit

Prepare the AirPrime SL Development Kit and the Socket Board by following these instructions step by step.

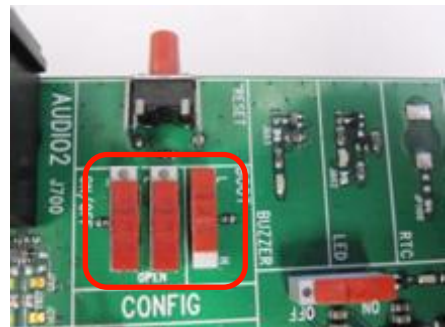
1. Plug the Socket Board onto the AirPrime SL Development Kit using board to board connectors J1000 and J1001.



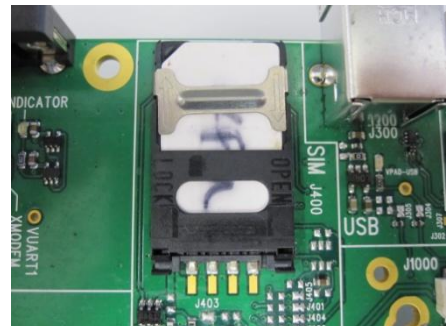
2. Turn the ON/OFF switches to the "OFF" position to ensure that no shorting will occur when the development kit board is supplied with power:

Switch	For SL6087	For SL80xx	For SL501x
SW600	"Open"	"Open"	"Open"
SW601	"Open"	"Open"	"Open"

For SL6087, the BOOT switch (SW602) should also be turned to the "L" position.



3. Insert a SIM card into the SIM card holder, J400 (if communications is required).



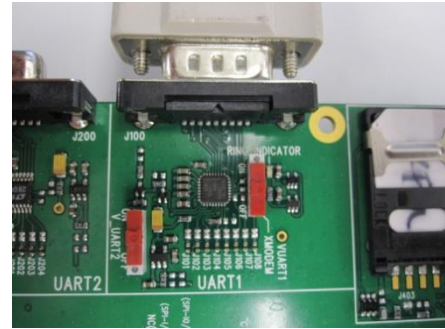
*Note: Note that all jumper pads are soldered by default. (Refer to section 1.1 for more information.) Retain these settings.*

4. Connect the RS232 cable between the PC port and J100 of the AirPrime SL Development Kit and make sure that SW101 is in the "ON" position.

---

*Note:* By default, baud rate = 115200 kbps, data bits = 8, parity = none, and stop bits = 1.

---



5. If USB communications is required,
  - a. For SL6087:
 

Connect the USB cable between the USB port and J300 of the AirPrime SL Development Kit.
  - b. For SL80xx/SL501x:
 

Connect the USB cable to the mini USB port on the Socket Board directly.

---

*Note:* The provided USB driver should be also installed in the host computer.

---



6. If RF communications is required, connect the SMA connector on the Socket Board to an external antenna or a Radio Communication Tester using a coaxial cable.



7. If audio communications is required on the Analog Audio enabled AirPrime SL Series embedded module, connect the handset to the audio connector, J700.



- Plug in the AC/DC power supply provided in the J604 connector; or connect it to an external DC power supply at 4V/2A (J600).

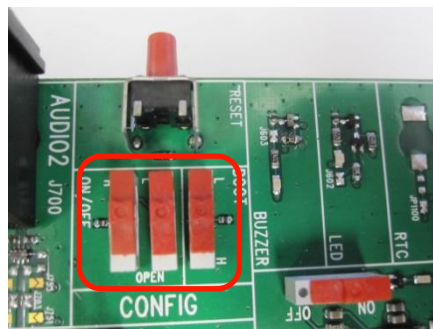
The presence of a DC power supply is indicated by a green LED, D601. For more details about this LED, refer to section 4.1.3 LED Signalization for VBAT.



- Turn the ON/OFF switches to the “ON” position to switch the module ON:

Switch	For SL6087	For SL80xx	For SL501x
SW600	“H”	“OPEN”	“OPEN”
SW601	“L”	“L”	“L”

For SL6087, the BOOT switch (SW602) should also be turned to the “L” position.



The AirPrime SL Development Kit should look like the following figure after it has been properly setup.

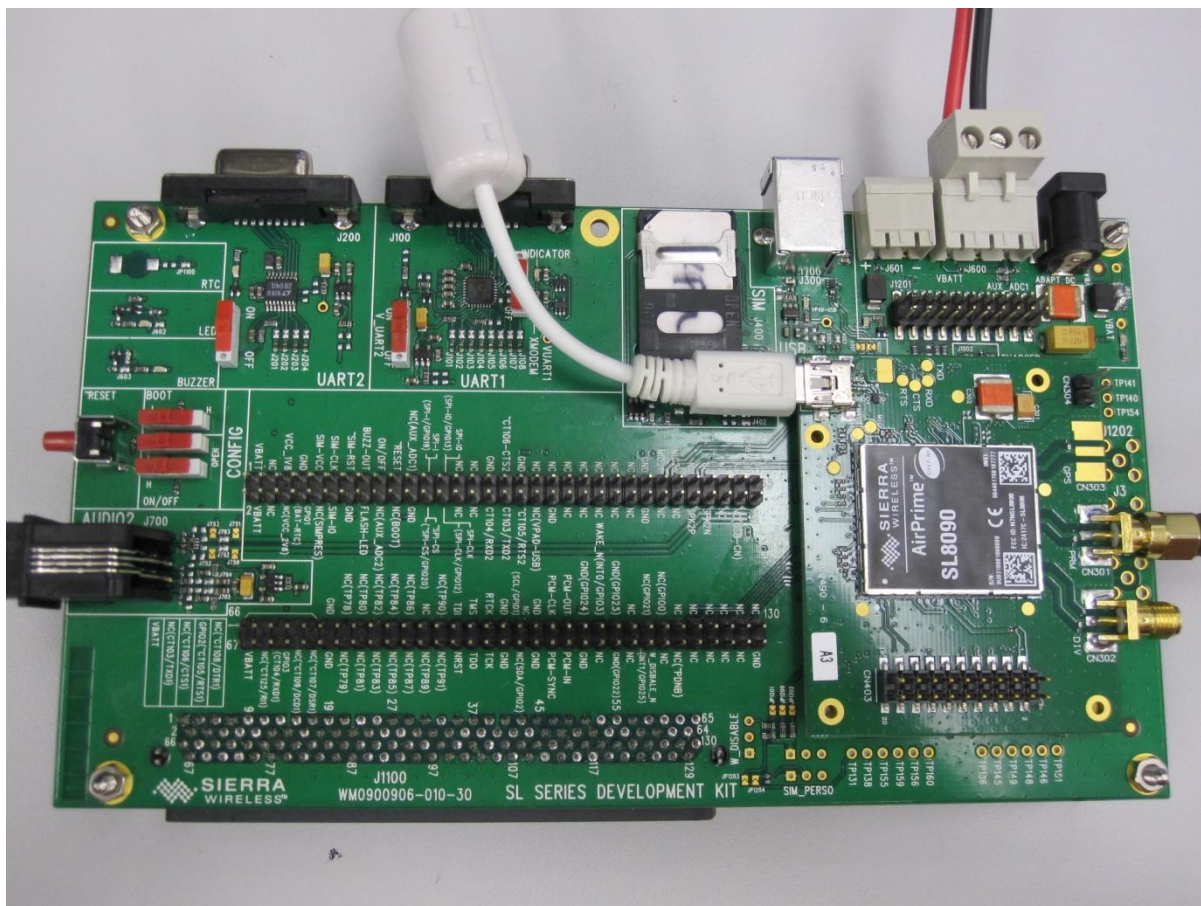


Figure 22. AirPrime SL Development Kit (with an SL80xx Socket Board and SL8090 Embedded Module)

## 3.2. Communications Test

To perform a communications test after setting the AirPrime SL Development Kit with the AirPrime SL Series embedded module, do the following:

1. Configure SW600 and SW601 as shown in the following table to switch the embedded module ON after power has been applied:

Switch	SL6087	SL80xx	SL501x
SW600	"H"	"Open"	"Open"
SW601	"L"	"L"	"L"

2. Using a PC terminal emulator, send the following command on a serial port to communicate with the AirPrime SL Series embedded module:  
**AT↵**
3. When communications is established between the PC and the AirPrime SL Series embedded module, the embedded module replies with an "OK". Verify that the response is displayed in the terminal emulator window.
4. A communication call can be made from the embedded module by AT command, "**ATD12345;**" while the embedded module is connected to the CMU200. Conversely, "RING" will be indicated in the HyperTerminal window on the PC when a call is received by the embedded module; type "**ATA**" to accept the call. For more details about communication calls, please refer to document [5] Firmware 7.4b AT Commands Manual (Sierra Wireless Software Suite 2.32).

## 4. Interfaces/Peripherals

This section describes the different interfaces/peripherals that are available in the AirPrime SL Development Kit.

### 4.1. Power Supplies

Two power supply sources are available on the AirPrime SL Development Kit:

- DC external supply (via J600)
- AC/DC adapter (via J604)

These power supplies are protected against electrostatic discharge (ESDs) and voltage or current transient surges by ESD diodes or varistors.

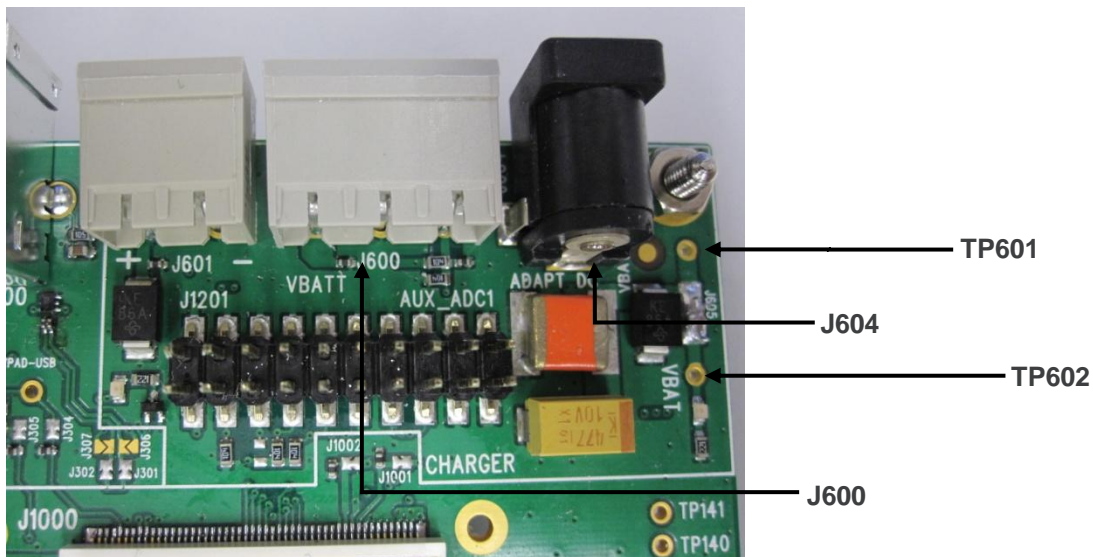


Figure 23. Power Supply Connectors (J604 and J600)

Either one these power supplies can be used for **both** the AirPrime SL Series embedded module and the peripherals on the AirPrime SL Development Kit.

Note that it is possible to separate the power supply for the Socket Board (“VBATT” via TP601) and the power supply for the peripherals (“VBAT” via TP602) by unsoldering J605. Current measurement is therefore possible for the AirPrime SL Development Kit and for the AirPrime SL Series embedded module. Refer to section 7 Current Consumption Measurement for more information.



Figure 24. VBATT Connection (J605)

### 4.1.1. Main Supply Adapter

The J604 connector powers the AirPrime SL Development Kit using an AC/DC power supply cable.

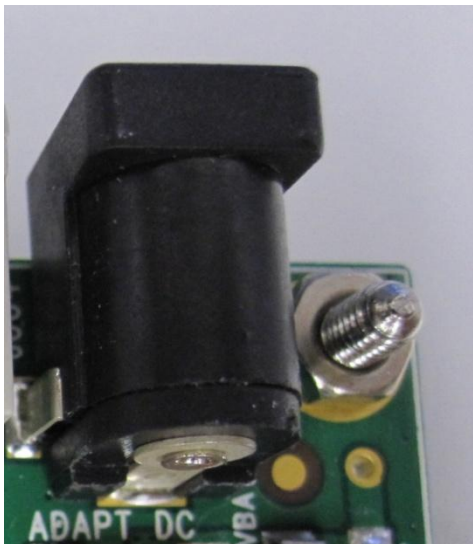


Figure 25. Main Supply Adapter

Details on the only supported adapter are listed in the following table.

Table 3. Supported Adapter

Manufacturer	Reference	Characteristics
SINPRO	SPU12C-101	4V DC / 2.5A

### 4.1.2. External Supply

The external supply is accessible through the J600 connector.

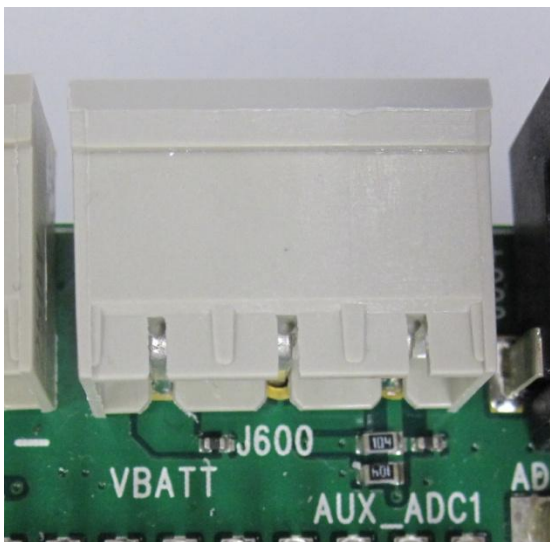


Figure 26. External Power Supply



The J600 connector has three pins:

- **Pins 1-2** are used to plug the power supply.
- **Pins 2-3** are used to plug in ADC1. (Refer to section 4.1.2.1 ADC1 for more information.)

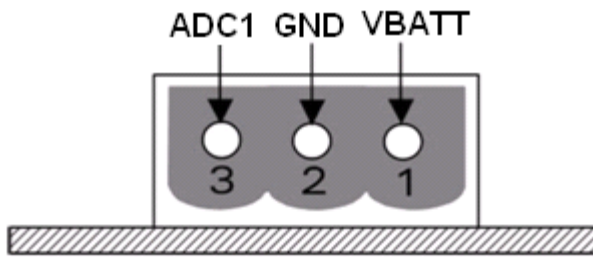


Figure 27. External Power Supply Pins

Refer to the following table for the electrical characteristics of VBATT.

Table 4. Electrical Characteristics of VBATT

VBATT <sup>1,2</sup>	V <sub>MIN</sub>	V <sub>NOM</sub>	V <sub>MAX</sub>
SL6087	3.2V	3.6V	4.8V
SL80xx	3.3V	3.6V	4.3V
SL501x	3.3V	3.6V	4.3V

1: This value has to be guaranteed during the burst (with 1.5A Peak in GSM or GPRS mode).

2: Maximum operating Voltage Stationary Wave Ratio (VSWR) is 2:1.

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

### 4.1.2.1. ADC1

The ADC1 signal is an input (ADC) to the AirPrime SL Series embedded module.

Pins 2-3 of J600 allow the simulation of the temperature level from a sensor inside the battery. Refer to the following table for the electrical characteristics of ADC1.

Table 5. Electrical Characteristics of ADC1

	V <sub>MIN</sub>	V <sub>NOM</sub>	V <sub>MAX</sub>
ADC1	0	-	2V

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

### 4.1.3. LED Signalization for VBAT

The “VBAT” indicator is a green LED and it indicates the presence of a power supply at J600 or J604. Both the AirPrime SL Series embedded module and its peripherals are powered by this power source when J605 is soldered. If J605 is unsoldered, an extra external power supply should be connected to “VBAT” for the AirPrime SL Development Kit.

---

**Tip:** *It is recommended to always use both VBATT and VBAT simultaneously.*

---

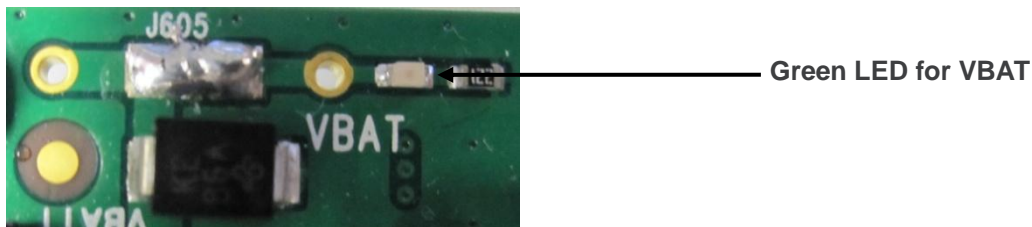


Figure 28. LED Signalization of VBAT

Refer to the following table for the VBATT and VBAT status depending on the LED state.

Table 6. Status of VBATT and VBAT

LED State	VBATT Status	VBAT Status
ON	ON	ON
OFF	ON when J605 is soldered; OFF when J605 is un-soldered	OFF

## 4.2. SIM

The SIM interface signals on the AirPrime SL Development Kit can be electrically disconnected from the AirPrime SL Series embedded module if the five solder pads, J401 to J405, are dissociated. Unsoldering them allows the SIM signals to transmit to an external interface board via the external connector (J1100), with R1122, R1123, R1124, R1125 and R1126 equipped with 0Ω resistors (0603 package resistors).

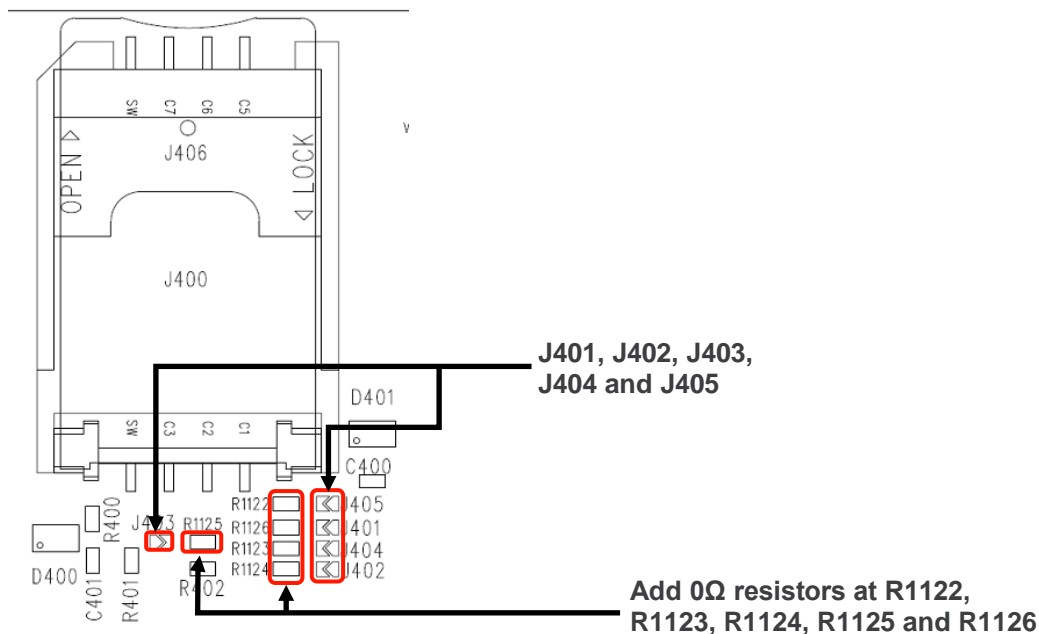


Figure 29. Solder Pads and Resistor Locations on the SIM Interface

By default, SIM is available on its dedicated connector, J400, with J401 to J405 soldered.

---

*Note:* ESD protection is available on all SIM signals.

---

### 4.2.1. SIM Connector (J400)

J400 is a standard 1V8 or 3V SIM socket.

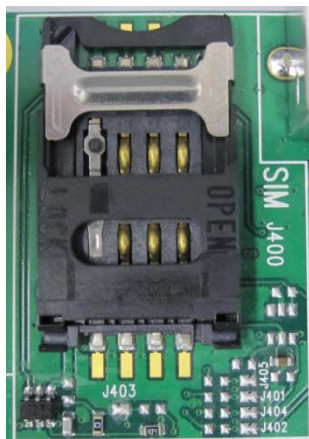


Figure 30. SIM Connector

Refer to the following table for the SIM connector pin description.

Table 7. SIM Connector Pin Description

Pin Number	Signal Name	I/O	I/O Type	Description
1	SIM-VCC	O	1V8 or 2V9	SIM Power Supply
2	SIM-RST	O	1V8 or 2V9	SIM Reset
3	SIM-CLK	O	1V8 or 2V9	SIM Clock
4	SIMPRES	I	2V8 max*	SIM Card Detect (Not used)
5	GND			Ground
6	VPP	Not used		
7	SIM-IO	I/O	1V8 or 2V9	SIM Data
8	CC8		2V8	SIMPRES signal supply (Not used)

\* For either 1V8 or 3V SIM cards.

### 4.3. UART1

UART1 of the AirPrime SL Development Kit is connected to the RS232 serial link interface of the AirPrime SL Series embedded module. The voltage level of UART1 is 2.8V from the AirPrime SL Development Kit side.

The eight UART1 signals in the AirPrime SL Development Kit could be electrically disconnected from the AirPrime SL Series embedded module if the eight tie pads, J101 to J108, are dissociated. Unsoldering them allows the UART1 signals to transmit to an external interface board via the external connector (J1100).

By default, UART1 is available on its dedicator connector, J100, with J101 to J108 soldered.

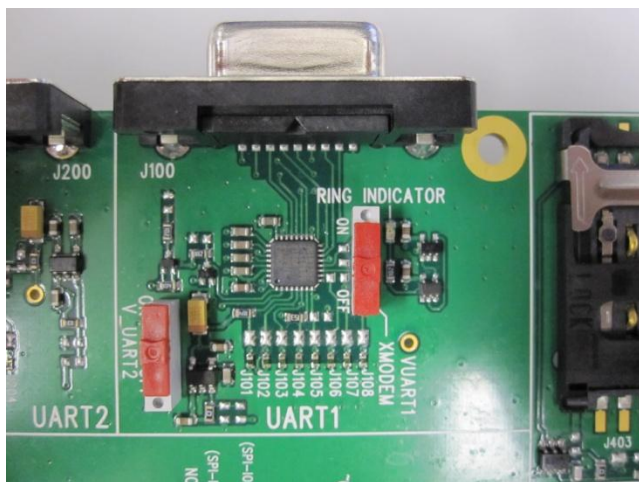


Figure 31. UART1 Connector

### 4.3.1. UART1 Connector (J100)

J100 is a SUB-D 9-pin female connector.

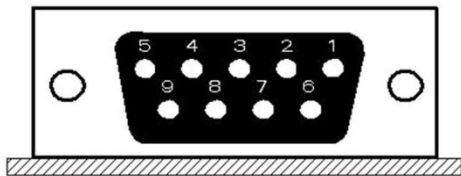


Figure 32. DB-9 Female Connector for UART1

Refer to the following table for the UART1 connector signal pin description.

Table 8. UART1 Connector Pin Description

Pin Number	Signal Name	I/O	I/O Type	Description
1	CT109 DCD	O	RS232 (V24/V28)	Data Carrier Detect
2	CT104 RXD	O	RS232 (V24/V28)	Receive serial data
3	CT103 TXD	I	RS232 (V24/V28)	Transmit serial data
4	CT108-2 DTR	I	RS232 (V24/V28)	Data Terminal Ready
5	GND			Ground
6	CT107 DSR	O	RS232 (V24/V28)	Data Set Ready
7	CT105 RTS	I	RS232 (V24/V28)	Request To Send
8	CT106 CTS	O	RS232 (V24/V28)	Clear To Send
9	CT125 RI	O	RS232 (V24/V28)	Ring Indicator

### 4.3.2. UART1 Configuration

The AirPrime SL Development Kit acts as a DCE and is connected to a DTE (PC or terminal) with a “straight cable”. This is a full UART.

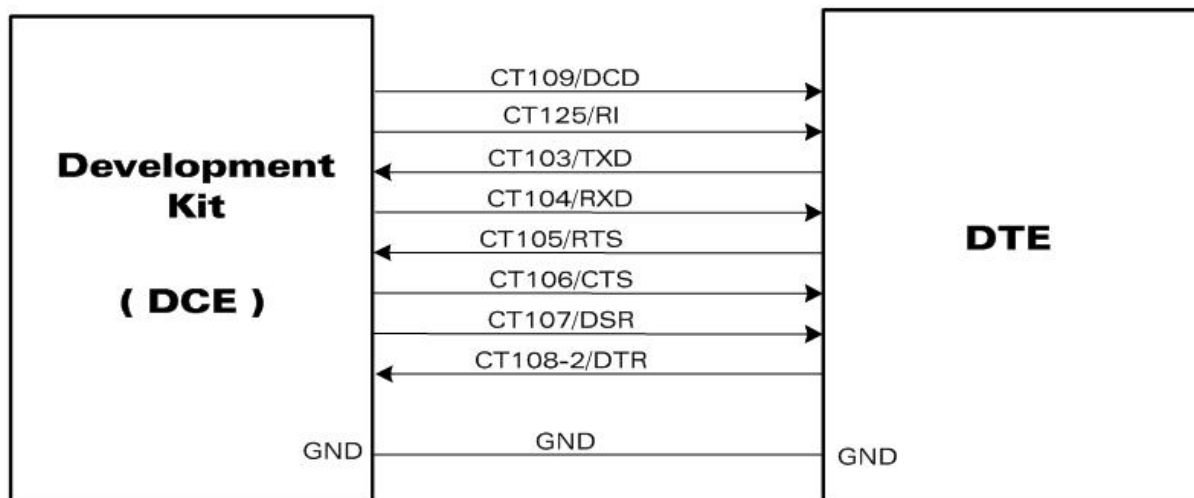


Figure 33. RS232 Main Serial Link

### 4.3.3. Enabling the UART1 Function (SW101)

The UART1 interface can be enabled by switching SW101 to the “ON” position.

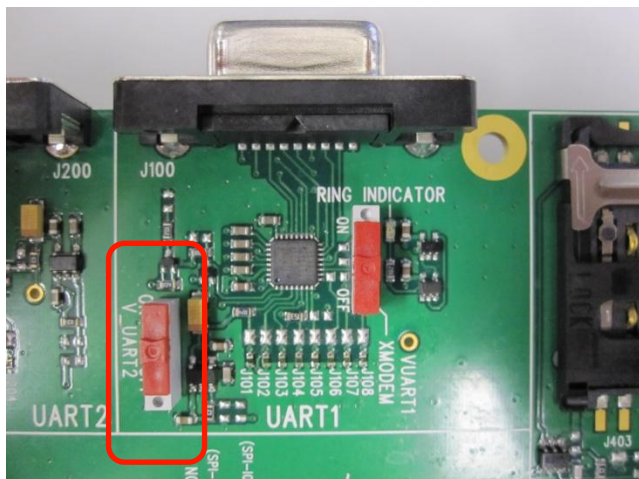


Figure 34. UART1 Switch Configuration

### 4.3.4. Switch “XMODEM” (SW100)

**Caution:** The “XMODEM” switch must always be in the “OFF” position, as shown in the figure below. Do not use this switch. If SW100 is in the wrong position (“ON”), UART1 will not work properly.

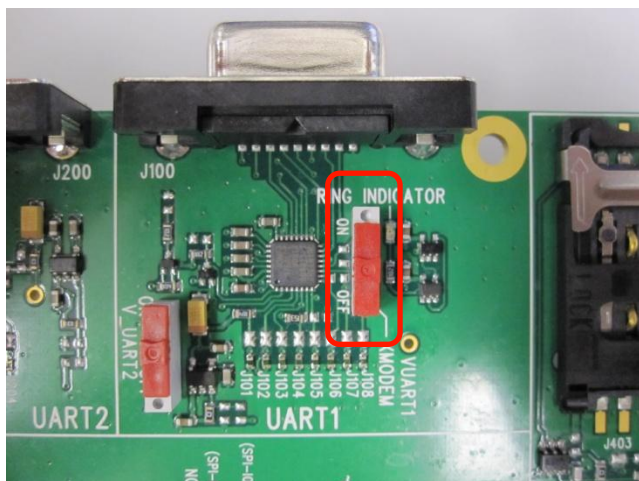


Figure 35. XMODEM Switch Configuration (SW100)

Refer to the following table for the XMODEM configuration.

Table 9. XMODEM Configuration

Mode	Description
Normal	OFF

### 4.3.5. LED Signalization for UART1 (D100, D101)

Two LEDs are available to indicate the state of UART1.

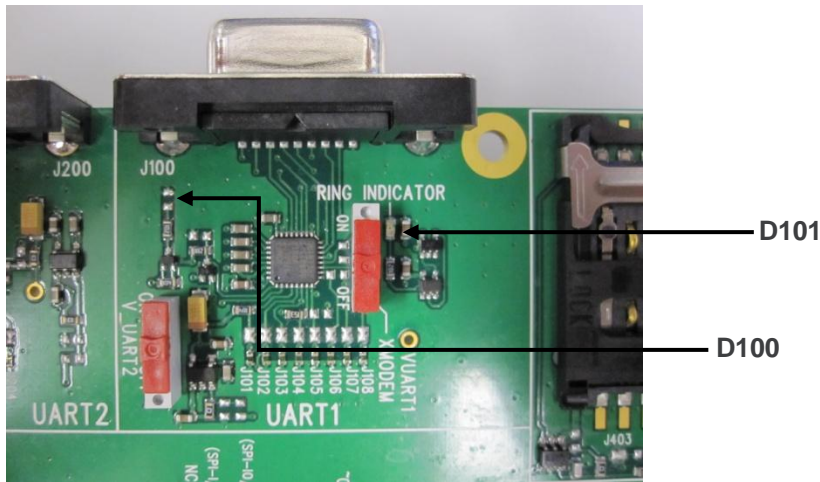


Figure 36. UART1 LED Location (D100, D101)

#### 4.3.5.1. LED “UART1” (D100)

This green LED indicates the power supply state of UART1.

The interface can be used when it is lit depending on which power supply is present (J600 or J604). Refer to section 4.1 Power Supplies for more information.

#### 4.3.5.2. LED “RING INDICATOR” (D101)

The “RING INDICATOR” indicator is a yellow LED controlled by the RI signal on the AirPrime SL Series embedded module.

When the AirPrime SL Series embedded module receives an incoming call, the RI signal goes from high to low for 0.5sec alternately; hence making the D101 LED blink.

## 4.4. UART2

UART2 of the AirPrime SL Development Kit is connected to the auxiliary RS232 serial link interface of the AirPrime SL Series embedded module at voltage level 1.8V. However, in the case of SL501x, the UART2 voltage level is 2.6V. Due to this, UART2 on the SL Development Kit has to be modified to make it compatible with SL501x.

To make the SL Development Kit compatible with SL501x, remove pin 12 of the UART2 chip from the pad in the PCB and weld a wire to connect this pin to TP5 (silkscreen VCC\_1V8) of the SL Development Kit.



Figure 37. UART2 Modification for SL501x

---

**Note:** Configuring UART2 of the SL Development Kit in this way has no effect on SL80xx's UART function. That is, this modified UART2 configuration can be used with both SL501x and SL80xx.

---

The four UART2 signals from the Socket Board could be disconnected by dissociating solder pads J201 to J204. Dissociating the four pads allows for the transmission of undisturbed signals to an external interface board via the external connector (J1100).

By default, UART2 is available on its dedicated connector, J200, with J201 to J204 soldered.

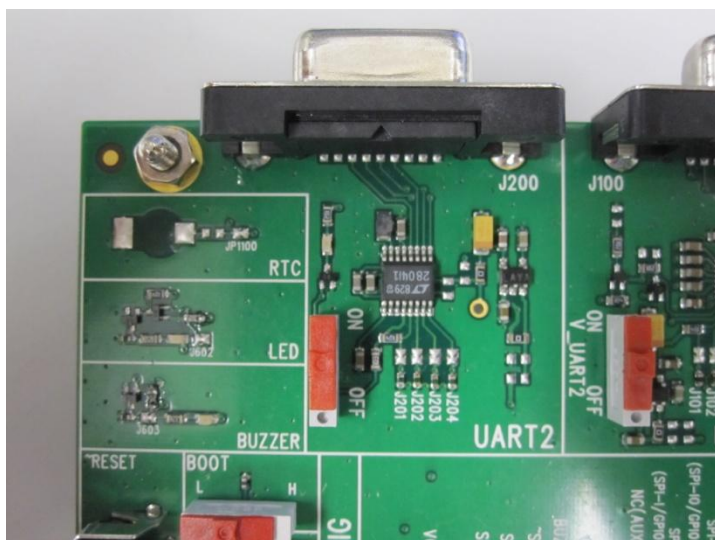


Figure 38. UART2 Connector



### 4.4.1. UART2 Connector (J200)

J200 is a SUB-D 9-pin female connector.

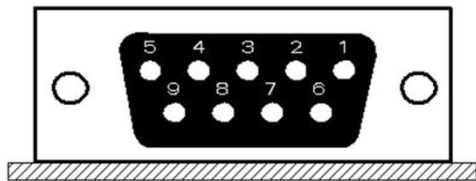


Figure 39. DB-9 Female Connector for UART2

Refer to the following table for the UART2 connector signal pin description.

Table 10. UART2 Connector Pin Description

Pin Number	Signal Name	I/O	I/O Type	Description
1	Not used*	-	-	-
2	CT104 RXD	O	RS232 (V24/V28)	Receive serial data
3	CT103 TXD	I	RS232 (V24/V28)	Transmit serial data
4	Not used*	-	-	-
5	GND			Ground
6	Not used*	-	-	-
7	CT105 RTS	I	RS232 (V24/V28)	Request To Send
8	CT106 CTS	O	RS232 (V24/V28)	Clear To Send
9	Not used*	-	-	-

\* Only four signals are used on this connector.

### 4.4.2. UART2 Configuration

The AirPrime SL Development Kit acts as a DCE and is connected to a DTE (PC or terminal) with a “straight cable”. There are only 4 signals on the UART2 as shown in the figure below.

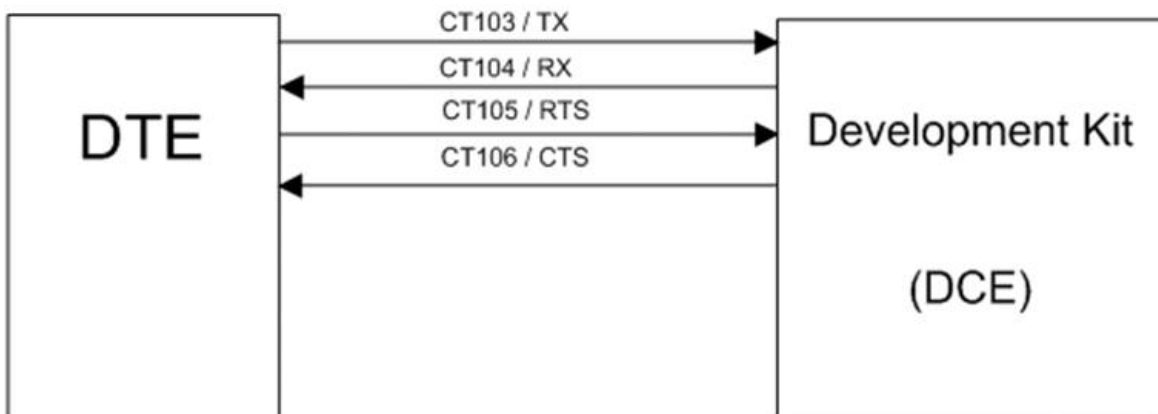


Figure 40. RS232 Auxiliary Serial Link

### 4.4.3. Enabling the UART2 Function (SW200)

The UART2 interface can be enabled by switching SW200 to the “ON” position.

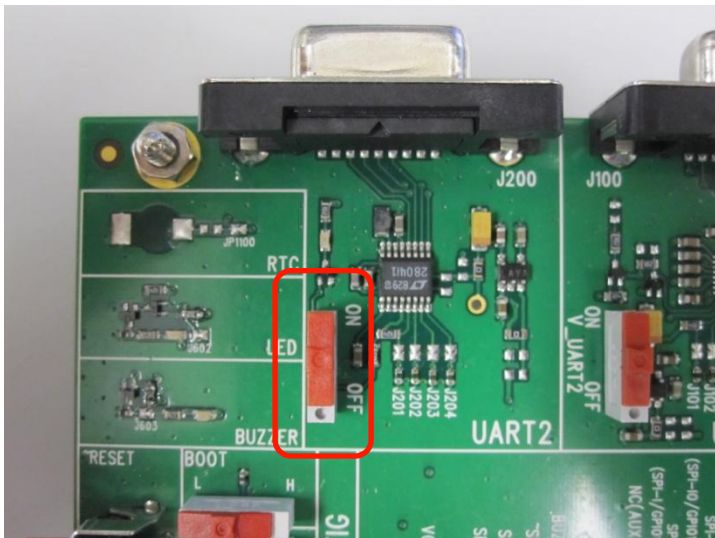


Figure 41. UART2 Switch Configuration

### 4.4.4. LED Signalization for UART2 (D200)

A green LED indicates the UART2 state. When this LED is lit, it indicates that the UART2 interface is available for use.

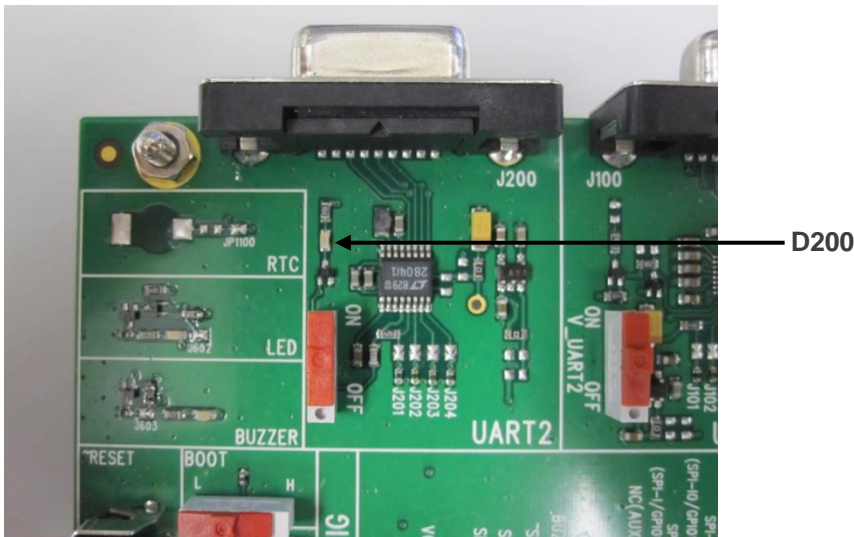


Figure 42. UART2 LED Location (D200)

## 4.5. USB

*Note:* This interface is for use with the AirPrime SL6087 embedded module. For USB connection with AirPrime SL80xx/SL501x embedded modules, refer to section 4.11 Mini-USB.

The USB interface on the AirPrime SL Development Kit board could be disconnected by dissociating solder pads J301 to J305. Dissociating the five solder pads allows for the transmission of undisturbed signals to an external interface board via the external connector (J1100).

By default, USB is available on its dedicated connector, J300; with J301, J302 and J304 soldered.

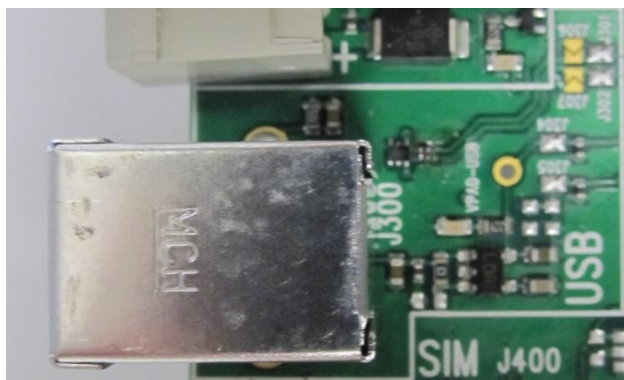


Figure 43. USB Connector

Note that ESD protection is used on the USB signals.

Refer to document [1] AirPrime SL6087 Product Technical Specification and Customer Design Guidelines for more information on the characteristics of the USB interface of the AirPrime SL6087 embedded module.

### 4.5.1. USB Connector (J300)

J300 is a USB B type receptacle.

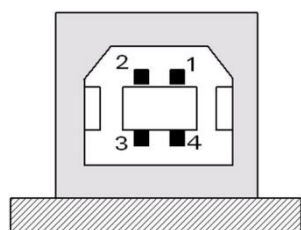


Figure 44. USB B Type Receptacle

Refer to the following table for the USB connector pin description.

Table 11. USB Connector Pin Description

Pin Number	Signal Name	I/O	I/O Type	Description
1	VBUS	I	Power supply	+ 5V DC
2	DM	I/O	Digital	USB negative line
3	DP	I/O	Digital	USB positive line
4	GND		Power supply	Ground
Shell	Shielding			

### 4.5.2. LED Signalization for USB (VPAD-USB)

The VPAD-USB is a green LED that is activated by the presence of VBUS (when plugged into the USB connector).

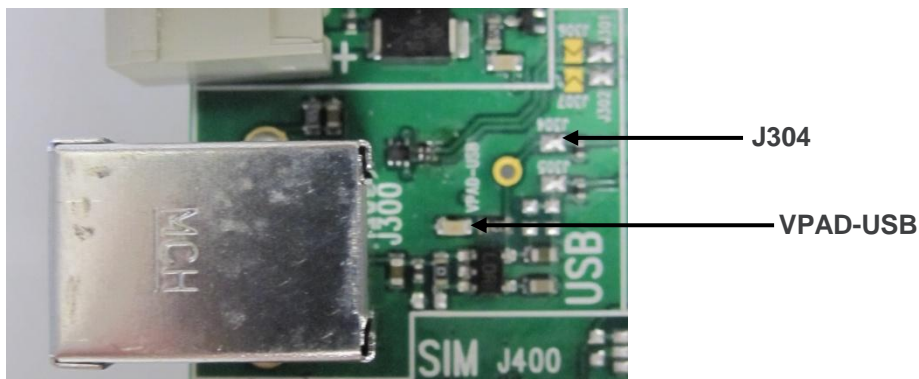


Figure 45. USB LED Location (VPAD-USB)

The power supply for the USB interface in the AirPrime SL Development Kit is provided by the USB connector. If a USB cable is plugged in, the LED and VPAD-USB (regulator, LDO, output) is at 3.3V.

---

**Note:** Solder pad J304 must be soldered to power the USB interface in the AirPrime SL6087 embedded module.

---

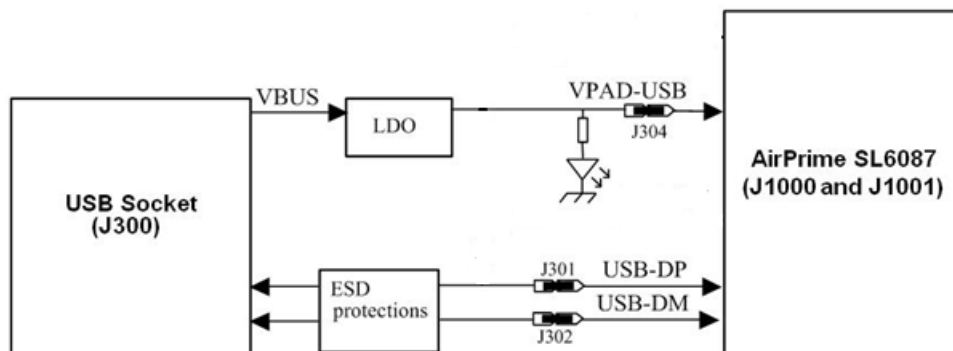


Figure 46. USB Electrical Diagram

## 4.6. Audio

There is one AUDIO interface in the AirPrime SL Series embedded module. Use J700 (AUDIO2) in the AirPrime SL Development Kit to connect to this audio interface.

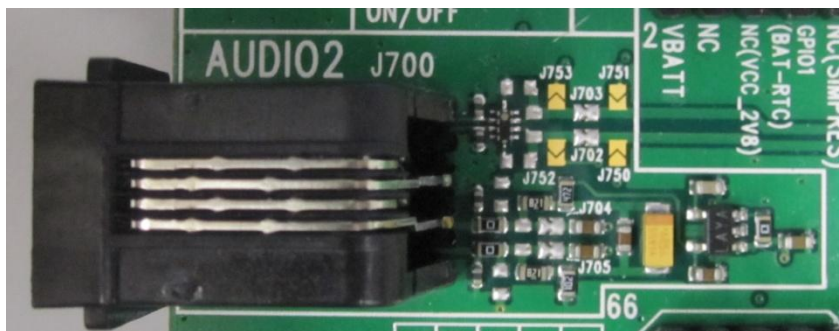


Figure 47. AUDIO Connectors

### 4.6.1. AUDIO2 Connector (J700)

The audio connector could be disconnected from the AirPrime SL Series embedded module when soldering pads J702 to J705 are dissociated. That is, having it unsoldered allows for the transmission of undisturbed signals to an external interface board via the external connector (J1100).

By default, AUDIO signals of the AirPrime SL Series embedded module are available on its dedicated connector J700 (AUDIO2) when J702 to J705 are soldered.

J700 is an RJ9 4-pin connector.

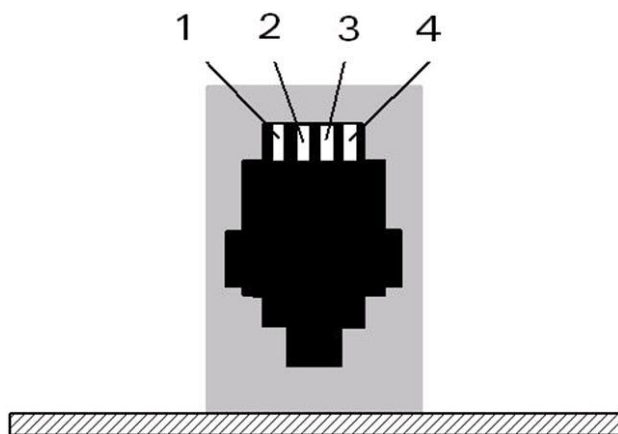


Figure 48. RJ9 4-pin Connector for AUDIO2

Refer to the following table for the AUDIO2 connector signal pin description.

Table 12. AUDIO2 Connector Pin Description

Pin Number	Signal Name	I/O	I/O Type	Description
1	MIC Ground	GND	Analog	Microphone ground
2	HSET_OUTN	O	Analog	Main speaker negative output
3	HSET_OUTP	O	Analog	Main speaker positive output
4	INTMIC_P	I	Analog	Main microphone positive input

Both microphone and speaker signals of the AirPrime SL Series embedded module can be configured in either single-ended or differential mode. By default, both microphone and speaker signals are set to differential mode on the AirPrime SL Development Kit. The following diagrams show how the AirPrime SL Development Kit should be configured for the differential microphone and speaker.

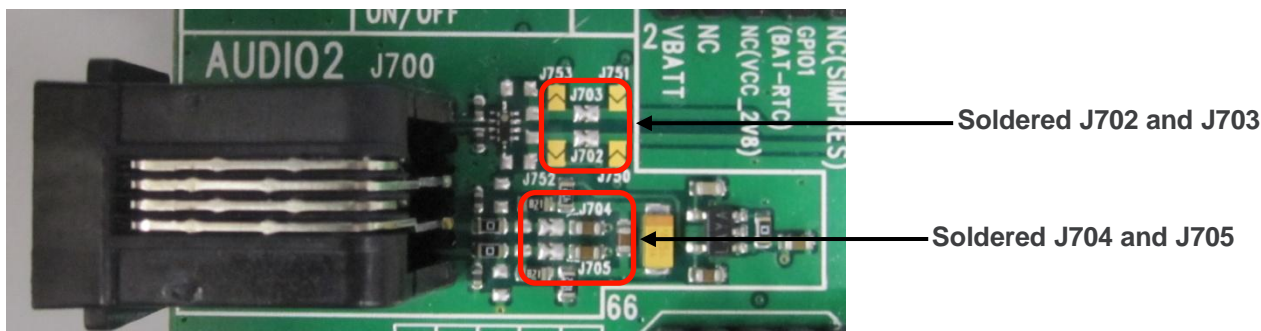


Figure 49. Settings for a Differential Microphone

For a single-ended microphone connection, the settings on the AirPrime SL Development Kit Board should be modified as follows. For more information about differential and single-ended audio configurations, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

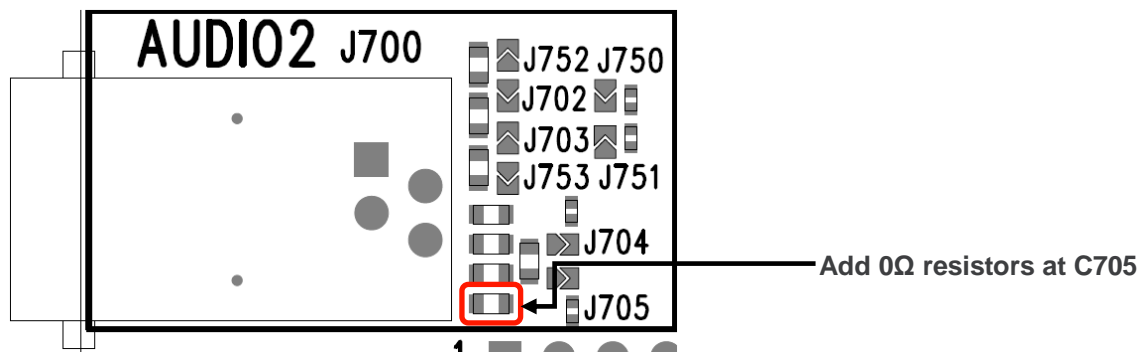


Figure 50. Settings for a Single-Ended Microphone

## 4.7. Flash LED (LED, D602)

The LED location is shown in the following figure.

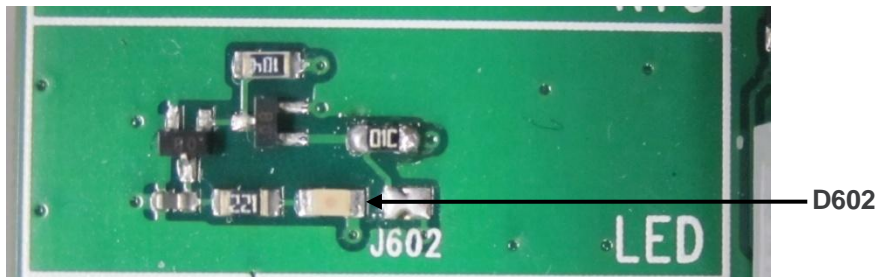


Figure 51. LED Location

The LED indicator, D602, is a green LED that indicates the network status.

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

## 4.8. Buzzer LED (BUZZER, D600)

The BUZZER location is shown in the figure below.

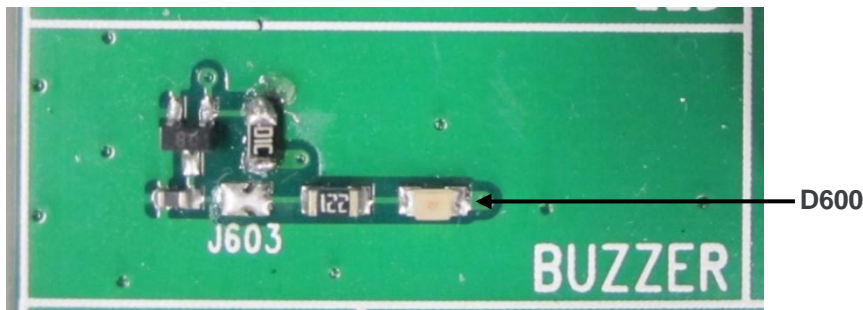


Figure 52. BUZZER Location

The BUZZER indicator, D600, is a green LED that is controlled by the BUZZ-OUT signal of the AirPrime SL Series embedded module.

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

## 4.9. Other Interfaces

Other interfaces and signals available on the AirPrime SL Development Kit Board are available on both the test points at the center of the AirPrime SL Development Kit Board, and also on the external board connector J1100. The following sub-sections describe these additional interfaces and signals.

Refer to sections 2.7 Available Test Ports on the AirPrime SL Development Kit and 4.13 External Board Connector (J1100) for the test point location and the pin description.

For further technical information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

### 4.9.1. Power Supply Function

These outputs (VCC\_1V8 and VCC\_2V8) from the AirPrime SL Series embedded module can be used to connect pull-up resistors. VCC\_2V8 is 2.8V. They must only be used as a reference supply.

### 4.9.2. Backup Battery Function

The AirPrime SL Series embedded module provides an input/output signal, BAT-RTC, for connecting a Real Time Clock power supply. This pin is used as a backup power supply to preserve the date and time when VBATT is switched OFF (no VBATT).

### 4.9.3. Serial Interface

The AirPrime SL Series embedded module may be connected to an LCD module driver through either an SPI bus (3 or 4-wire interface) or an I<sup>2</sup>C bus (2-wire interface).

#### 4.9.3.1. SPI Bus

The AirPrime SL Series embedded module provides one SPI bus with a maximum speed of 13Mb/s in Master mode operation using a 3 or 4-wire interface design.

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

#### 4.9.3.2. I<sup>2</sup>C Bus

The AirPrime SL Series embedded module provides an I<sup>2</sup>C bus that includes a clock signal (CLK) and a data signal (SDA) with a maximum speed of 400Kb/s in Master mode operation.

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

### 4.9.4. Digital Audio Interface (PCM)

The digital audio interface (PCM) allows connectivity with standard audio peripherals.

For more information, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.



## **4.9.5. ADC Function**

The AirPrime SL Series embedded module provides two analog to digital converters, ADC1 and ADC2. These converters are 10-bit resolution ADCs ranging from 0V to 2V.

For more information about this interface, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

### **4.9.5.1. ADC1**

This analog input signal can be used to monitor external (application) temperature.

### **4.9.5.2. ADC2**

This input may be used for customer specific applications.

## **4.9.6. External Interrupt**

The AirPrime SL Series embedded module provides two external interrupt inputs, INT0 and INT1, with differing voltages. INT0 is a 1V8-type input while INT1 is 2V8-type input.

For more information about this interface, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

## 4.10. JTAG

The JTAG interface is used for hardware debugging and product troubleshooting. When using an AirPrime SL6087 embedded module, this interface is connected through the JTAG connector on the AirPrime SL Development Kit; and when using an AirPrime SL80xx/SL501x embedded module, this interface is available on the corresponding Socket Board.

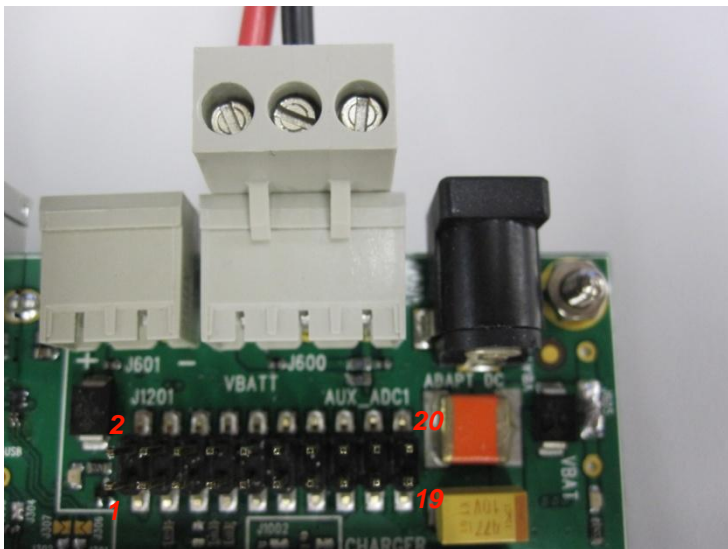


Figure 53. JTAG Connector on the SL Series Development Kit for AirPrime SL6087



Figure 54. JTAG Connector on the AirPrime SL80xx Socket Board



Figure 55. JTAG Connector on the AirPrime SL501x Socket Board

### 4.10.1. JTAG Connector

The JTAG connectors on the SL Series Development Kit and on the SL80xx/SL501x socket boards are of similar types. Refer to the following tables for the JTAG connector pin description for both SL80xx and SL501x.

Table 13. JTAG Connector Pin Description for SL80xx

Pin Number	Signal Name	I/O	I/O Type	Description
1	VCC_1V8	O	1V8	Digital Supply
2	VCC_1V8	O	1V8	Digital Supply
3	~TRST	I	1V8	JTAG asynchronous reset
4	GND	-	-	GROUND
5	TDI	I	1V8	JTAG input data
6	GND	-	-	GROUND
7	TMS	I	1V8	JTAG test mode select
8	GND	-	-	GROUND
9	TCK	I	1V8	JTAG scan clock
10	GND	-	-	GROUND
11	RTCK	O	1V8	JTAG return test clock from the ARM JTAG for external debug HW
12	GND	-	-	GROUND
13	TDO	O	1V8	JTAG output data
14	GND	-	-	GROUND
15	~RESET	I/O	Open Drain	Reset Input
16	GND	-	-	GROUND
17	GND	-	-	GROUND
18	GND	-	-	GROUND
19	GND	-	-	GROUND
20	GND	-	-	GROUND

Table 14. JTAG Connector Pin Description for SL501x

Pin Number	Signal Name	I/O	I/O Type	Description
1	VCC_2V6	O	2V6	Digital Supply
2	VCC_2V6	O	2V6	Digital Supply
3	~TRST	I	2V6	JTAG asynchronous reset
4	GND	-	-	GROUND
5	TDI	I	2V6	JTAG input data
6	GND	-	-	GROUND
7	TMS	I	2V6	JTAG test mode select
8	GND	-	-	GROUND
9	TCK	I	2V6	JTAG scan clock
10	GND	-	-	GROUND
11	RTCK	O	2V6	JTAG return test clock from the ARM JTAG for external debug HW
12	GND	-	-	GROUND
13	TDO	O	2V6	JTAG output data
14	GND	-	-	GROUND
15	~RESET	I/O	Pull-up inside the module	Reset Input
16	GND	-	-	GROUND
17	GND	-	-	GROUND
18	GND	-	-	GROUND
19	GND	-	-	GROUND
20	GND	-	-	GROUND

## 4.11. Mini-USB

The mini-USB connector, available on the SL80xx/SL501x Socket Board, is used for USB connections for the AirPrime SL80xx/SL501x embedded module.



Figure 56. Mini-USB Connector on the Socket Board for AirPrime SL80xx/SL501x

## 4.12. Antenna Function

Depending on the SL series embedded module, several antenna connections may be available from the socket board.

An SMA connector used for customer applications is available on the SL6087, SL80xx and SL501x socket boards.



Figure 57. SMA Connector on the AirPrime SL6087, SL80xx and SL501x Socket Boards

Diversity and GPS antenna connectors are also available on the SL80xx and SL501x socket boards.

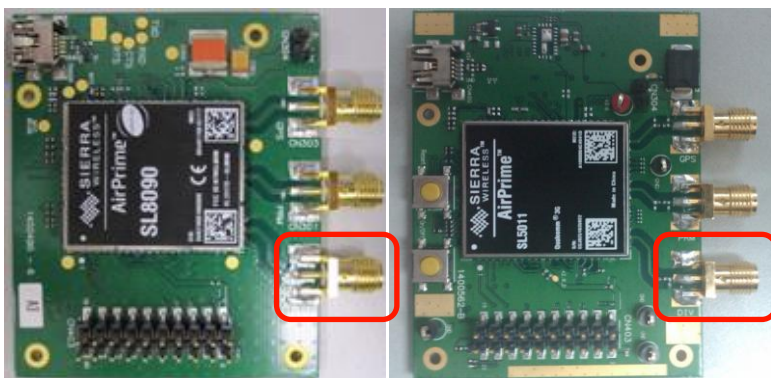


Figure 58. Diversity Antenna Connector on the AirPrime SL80xx and SL501x Socket Boards



Figure 59. GPS Antenna Connector on the AirPrime SL80xx and SL501x Socket Boards

### 4.13. External Board Connector (J1100)

The external board connector is an interface to connect an external test bench for testing or debugging.

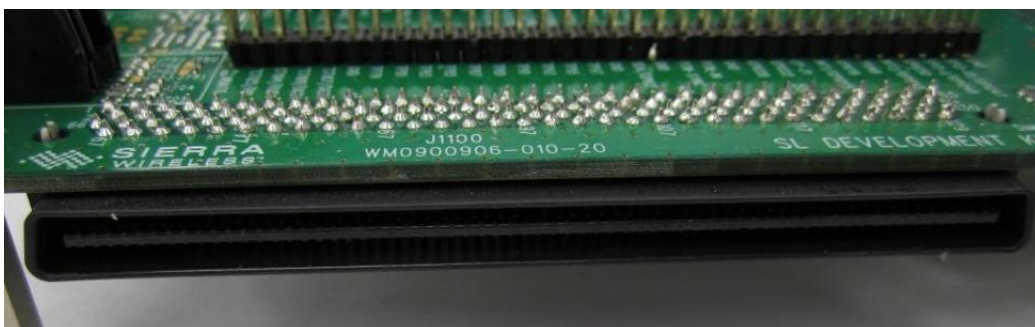


Figure 60. External Board Connector

Most of the AirPrime Socket Board signals are connected to the external board connector (J1100) and are available via TP from the center of the AirPrime SL Development Kit Board. The test ports in the center of the development kit board and the external board connector (J1100) have a one to one correspondence except for pins 37-39 which is NC (not connected) on the external board connector. Refer to Table 2 AirPrime SL Development Kit Test Ports for the pin descriptions.

For further information about the AirPrime SL Series embedded module signals and their corresponding multiplexed signals, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

## 5. Control Functions

This section describes the control functions available in the AirPrime SL Development Kit.

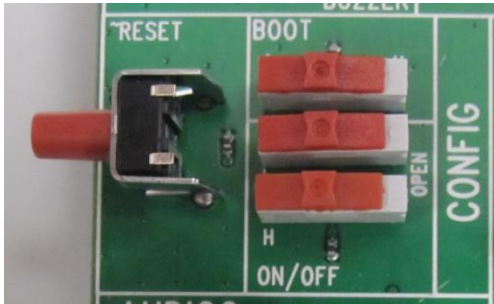


Figure 61. Control Functions

### 5.1. ON/OFF

Two switches (SW600 and SW601) are necessary to manage the ON/OFF control because the active level varies depending on the AirPrime SL series embedded module.

When the AirPrime SL Development Kit is connected to an external power supply (via J600 or J604) and SW600 is set to the “H” position, a HIGH level signal is sent to the AirPrime SL Series embedded module through VBATT.

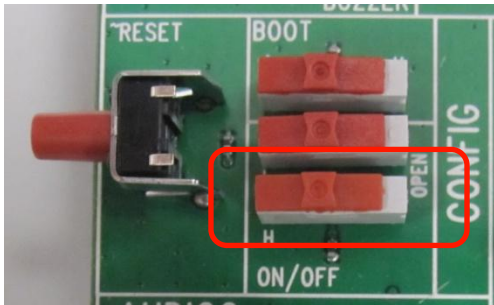


Figure 62. SW600 in the “H” Position

Switch SW601 is used together with switch SW600 for the ON or OFF control of the AirPrime SL Series embedded module. This switch should be set to the “L” position.

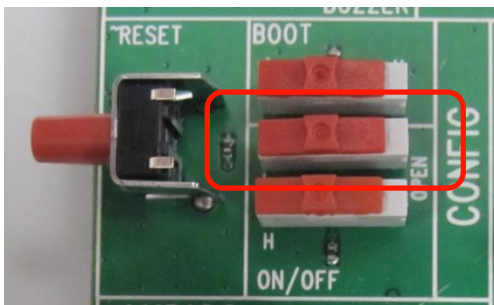


Figure 63. Switch SW601 in the “L” Position

Refer to the following table for the configuration of switches SW600 and SW601 and the corresponding voltage level applied to the ON/OFF pin of the embedded module.

Table 15. SW600 and SW601 Configuration

SW600 State	SW601 State	ON/OFF Pin Voltage
H	Open	H
H	L	H
Open	L	L
Open	Open	Open

The following table enumerates the settings for SW600 and SW601 to turn the embedded module ON or OFF.

Table 16. SW600 and SW601 Settings to Turn the Embedded Module ON or OFF

Embedded Module State	Switch Settings for SL6087		Switch Settings for SL80xx		Switch Settings for SL501x	
	SW600	SW601	SW600	SW601	SW600	SW601
ON	H	L	Open	L	Open	L
OFF	Open	Open	Open	Open	Open	Open

For more information about the ON/~OFF signal, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.



## 5.2. ~RESET

The ~RESET button starts a general reset when it is pushed.

**Caution:** A software reset is preferred to a hardware reset.

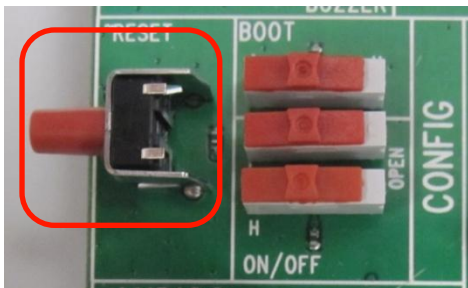


Figure 64. ~RESET Button

For more information about this signal, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

## 5.3. BOOT

The BOOT switch is only used when downloading new software to the AirPrime SL Series embedded module via UART1 using specific download software provided by Sierra Wireless. This switch is set to the “OFF” position by default.

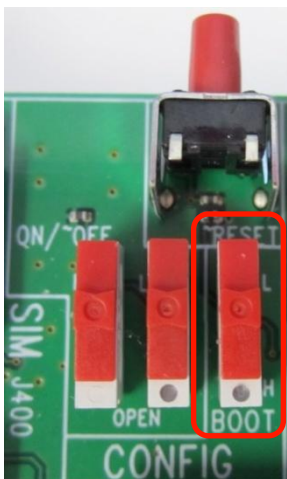


Figure 65. BOOT Switch in the “OFF” Position

Refer to the following table for the BOOT signal configuration.

Table 17. BOOT Configuration

Mode	BOOT	ON/~OFF
Normal	OFF	ON*
Backup download with specific download software	ON	ON

\* The BOOT switch can be switched to the “OFF” position within two seconds if the ON/~OFF signal is to be driven by software (via the AT+CPOF AT command). For more information about this AT command, refer to document [5] Firmware 7.4b AT Commands Manual (Sierra Wireless Software Suite 2.32).

## 6. ESD Protections

External ESD protections are available on the AirPrime SL Development Kit for the following signals:

- SIM interface signals:
  - SIM-VCC
  - SIM-IO
  - SIM-CLK
  - SIM-RST
- AUDIO2
- USB
  - USB-DP
  - USB-DM

Other interface signals protected on the AirPrime SL Series embedded module are as follows:

- UART1 signals with the ADM3307 transceiver
- UART2 signals with the LTC2804 transceiver

---

**Caution:** *As the test points at the center of the AirPrime SL Development Kit are not protected against ESD discharge and they are directly connected to the signal pins of the AirPrime SL Series embedded module, users must be careful when using these TP signals.*

---

## 7. Current Consumption Measurement

To measure the current consumption of the AirPrime SL Series embedded module, configure the AirPrime SL Development Kit as shown in the following sub-sections.

---

**Caution:** *Before making any of the adjustments below, ensure that the AirPrime SL Development Kit is disconnected from the power supply.*

---

Note that with the configuration described in the following sub-sections, the consumption current from VBATT is only\* that of the AirPrime SL Series embedded module soldered-down. For more information about the AirPrime SL Series embedded module and its current consumption, refer to the Product Technical Specification and Customer Design Guideline of the corresponding AirPrime SL Series embedded module.

---

**Note:** \* *Subtract a quiescent current of 50 $\mu$ A from T100.*

---

Also, make sure to take note of the following additional points:

- T100 used for UART1 enable will affect power consumption on 4V (VBATT) by an additional 50 $\mu$ A.
- C600 and D604 connected on 4V (VBATT) may affect power consumption on 4V (VBATT). Disconnect these 2 components if necessary.
- Flash LED (D602) and can affect power consumption and can be disconnected by opening jumper J602.

### 7.1. AirPrime SL Development Kit Board

Configure the AirPrime SL Development Kit Board as follows:

- Around the Power Supply area:
  - Unsolder jumper J605 to disconnect VBATT and VBAT.
- Around the UART2 area:
  - Disconnect UART2 from the AirPrime Series embedded module by opening soldering jumpers J201 to J204.
- Around BAT-TEMP (VBATT area):
  - Remove R600, D603 and D604 in order to eliminate the current drawn by the application circuit on the AirPrime SL Development Kit.
  - Open soldering jumper J605 in order to separate the power supplies of the AirPrime SL Development Kit and the AirPrime SL Series embedded module.
  - Connect a 4V external power supply to the test point TP602 (“VBAT”) and ground.

---

**Note:** *The current from J600 is supplied to the AirPrime SL Series embedded module; while the current from TP602 is supplied to the AirPrime SL Development Kit.*

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- Around the USB area:
  - Disconnect USB from the AirPrime SL Series embedded module by opening soldering jumpers J301, J302, J303, J304 and J305.

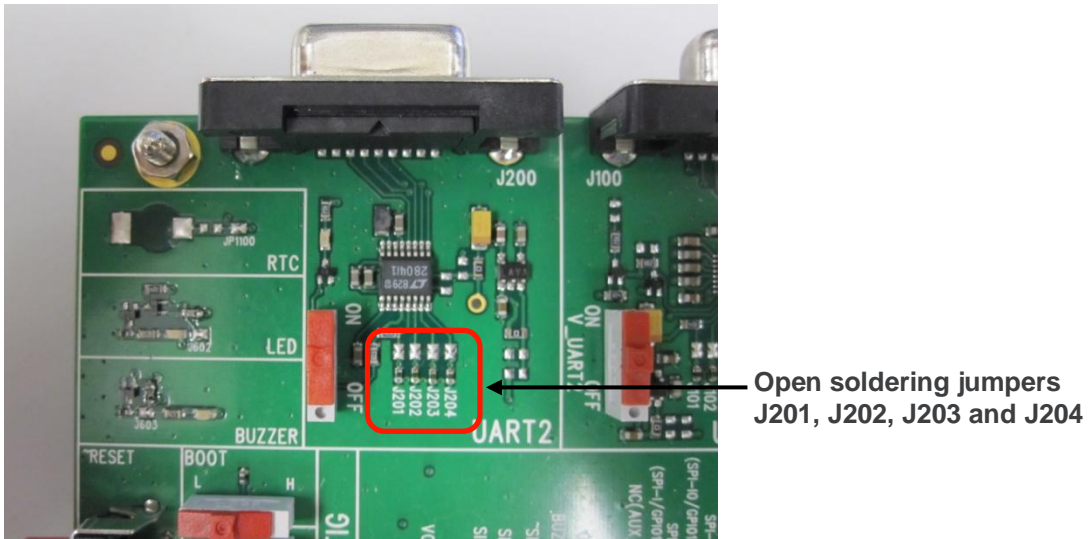


Figure 66. UART2 Configuration for Current Consumption Measurement

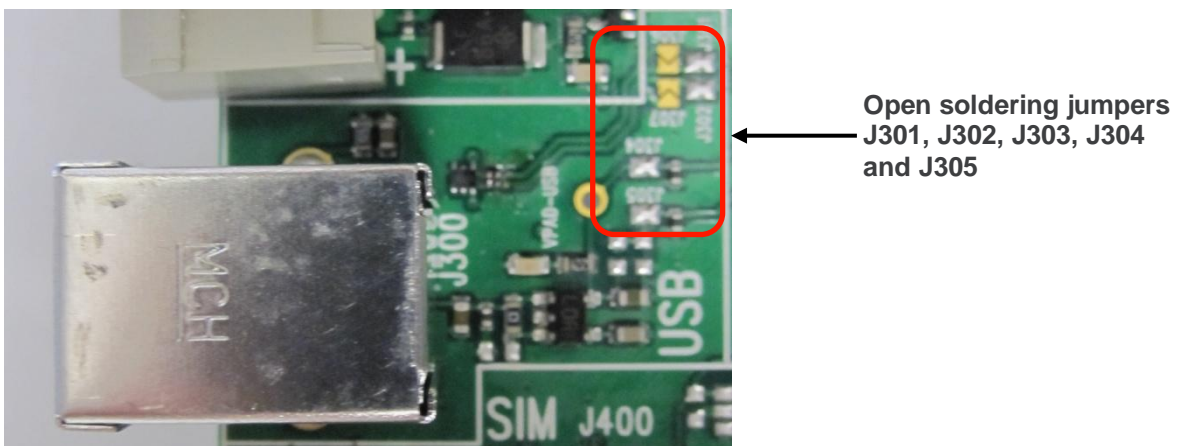


Figure 67. USB Configuration for Current Consumption Measurement

## 7.2. Socket Board

Keep the default settings on the embedded module Socket Board.

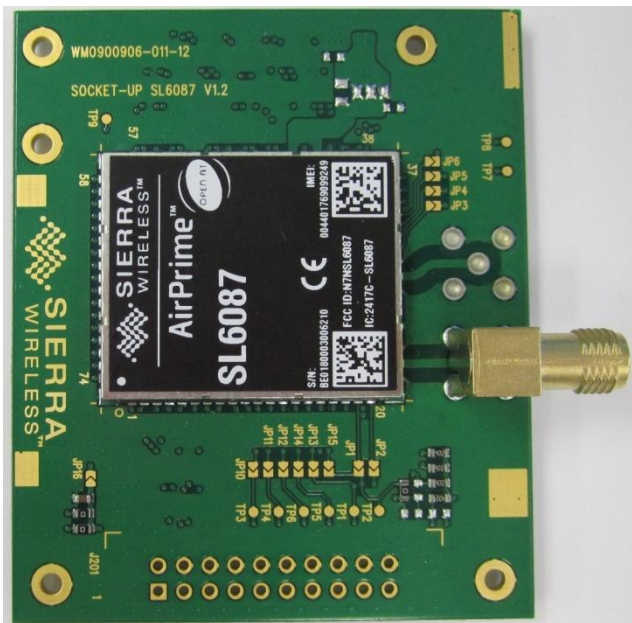


Figure 68. AirPrime SL6087 Socket Board Configuration for Current Consumption Measurement



Figure 69. AirPrime SL80xx Socket Board Configuration for Current Consumption Measurement



Figure 70. AirPrime SL501x Socket Board Configuration for Current Consumption Measurement



## 8. Reference Documents

- [1] AirPrime SL6087 Product Technical Specification and Customer Design Guidelines  
Reference: WA\_DEV\_SL6087\_PTS\_001
- [2] AirPrime SL808x Product Technical Specification and Customer Design Guidelines  
Reference: 2400058
- [3] AirPrime SL809x Product Technical Specification and Customer Design Guidelines  
Reference: WA\_DEV\_SL8090\_PTS\_001
- [4] AirPrime SL501x Product Technical Specification and Customer Design Guidelines  
Reference: 4110802
- [5] Firmware 7.4b AT Commands Manual (Sierra Wireless Software Suite 2.32)  
Reference: WM\_DEV\_OAT\_UGD\_079
- [6] AirPrime WMP100 Development Kit User Guide  
Reference: WM\_DEV\_WUP\_UGD\_001

## 9. List of Abbreviations

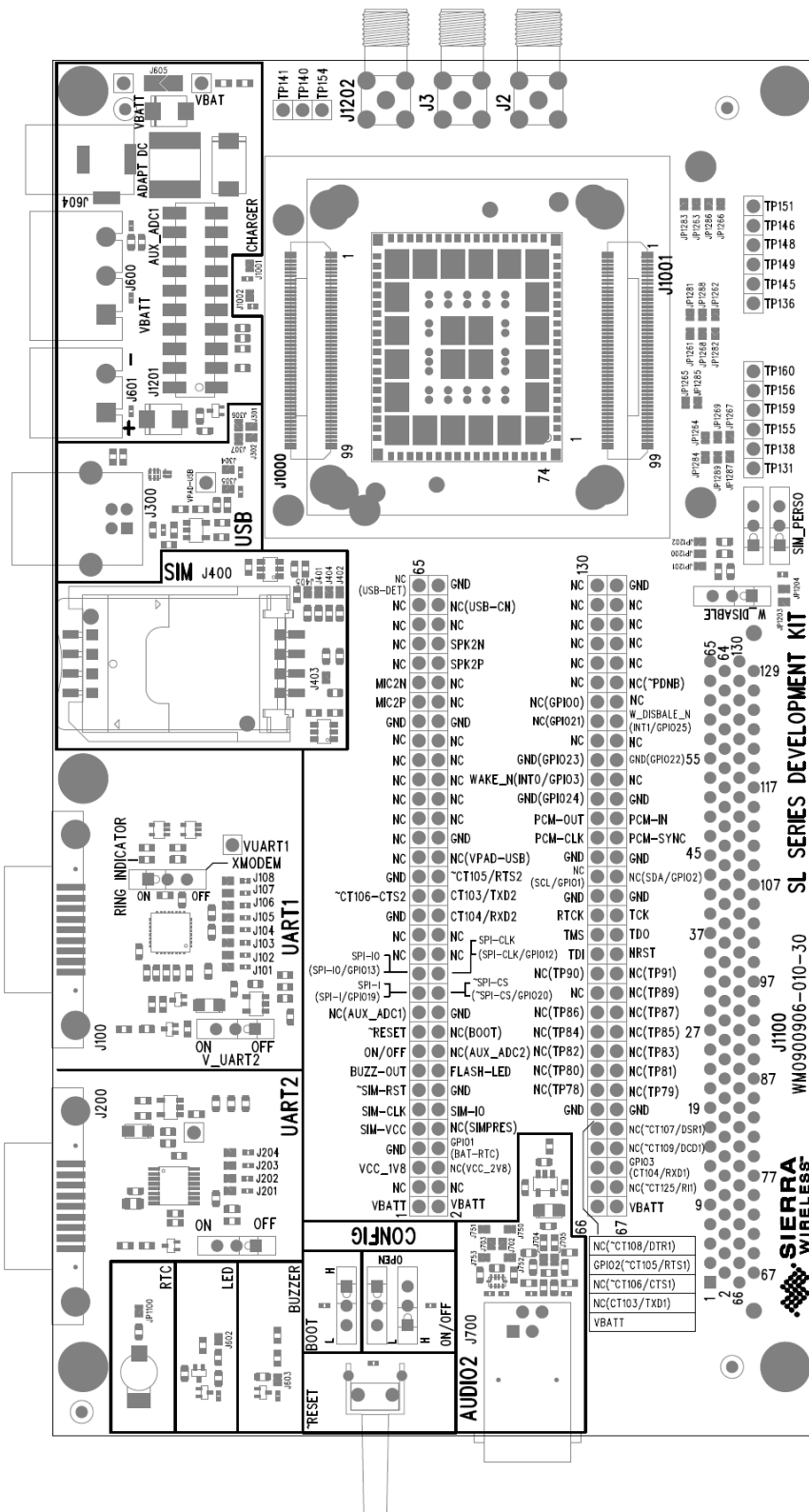
Abbreviation	Definition
ADC	Analog to Digital Converter
AUX	AUXiliary
CLK	CLOCK
CPU	Central Process Unit
CTS	Clear To Send
DAC	Digital to Analog Converter
DC	Direct Current
DCD	Data Carrier Detect
DCE	Data Communication Equipment
DSR	Data Set Ready
DTE	Data Terminal Equipment
DTR	Data Terminal Ready
ESD	ElectroStatic Discharges
GND	GrouND
GPI	General Purpose Input
GPIO	General Purpose Input Output
GPO	General Purpose Output
IIC (I2C)	Inter IC Control bus
I/O	Input / Output
MIC	MICrophone
PC	Personal Computer
PCB	Printed Circuit Board.
PCM	Pulse Code Modulation
PWM	Pulse Width Modulation
RF	Radio Frequency
RI	Ring Indicator
RTC	Real Time Clock
RTS	Request To Send
RXD	Receive Data
SIM	Subscriber Identity Module
SPI	Serial Peripheral Interface
SPK	SPEaKer
TP	Test Point
TXD	Transmit Data
UART	Universal Asynchronous Receiver-Transmitter
USB	Universal Serial Bus

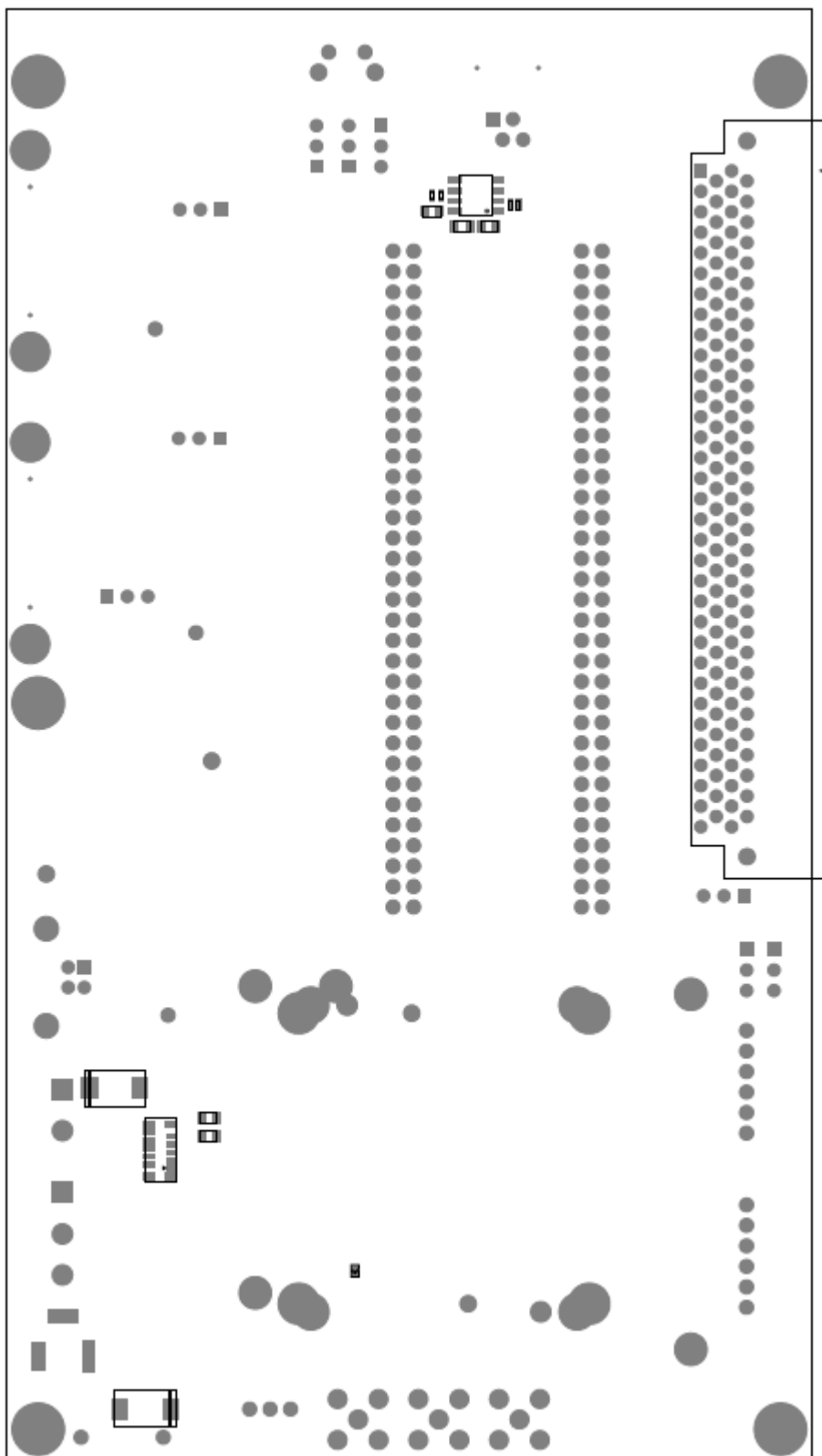


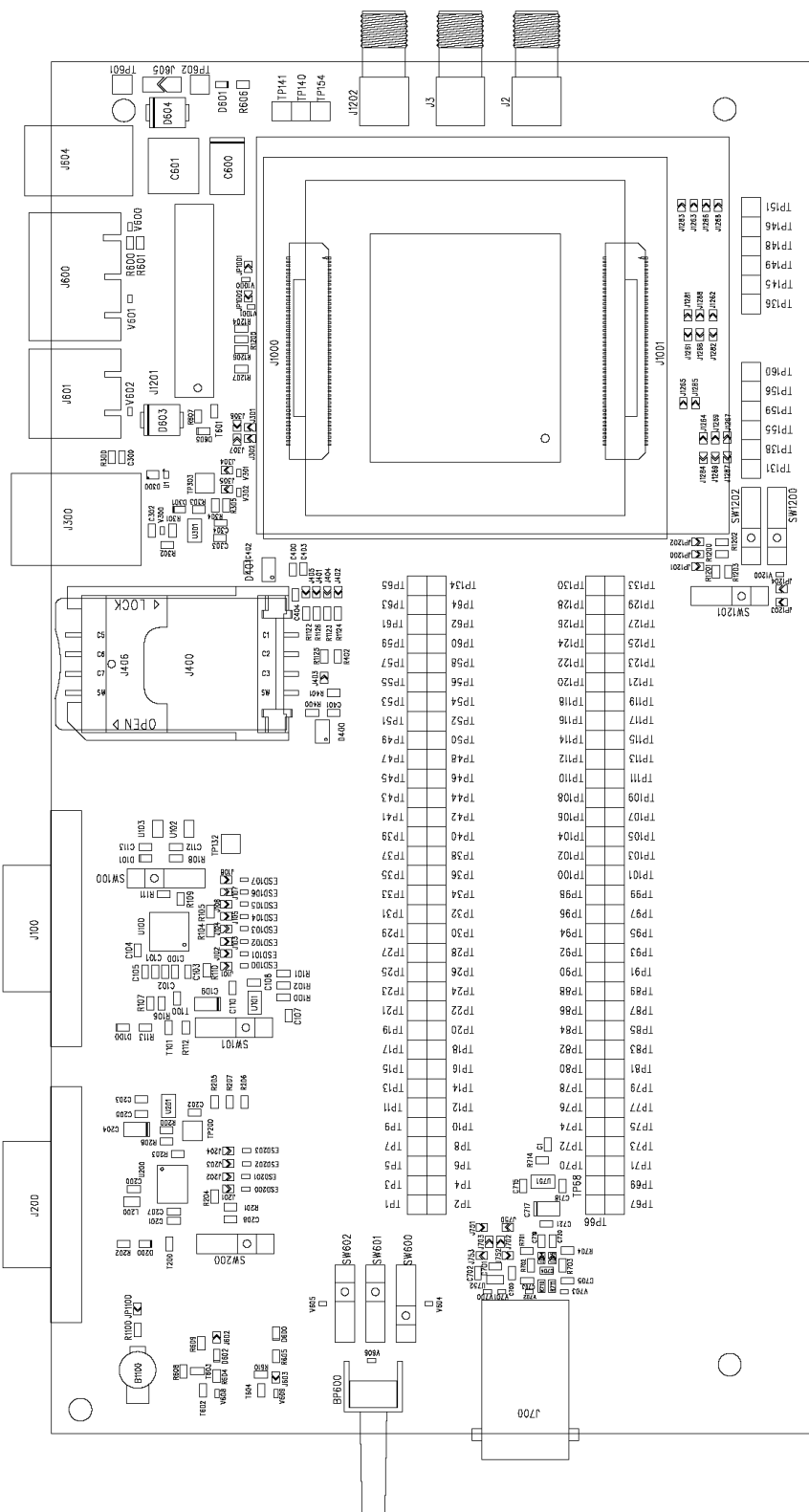
## 10. Appendix

This section contains schematic diagrams for the AirPrime SL Development Kit and Socket Boards.

# 10.1. AirPrime SL Development Kit

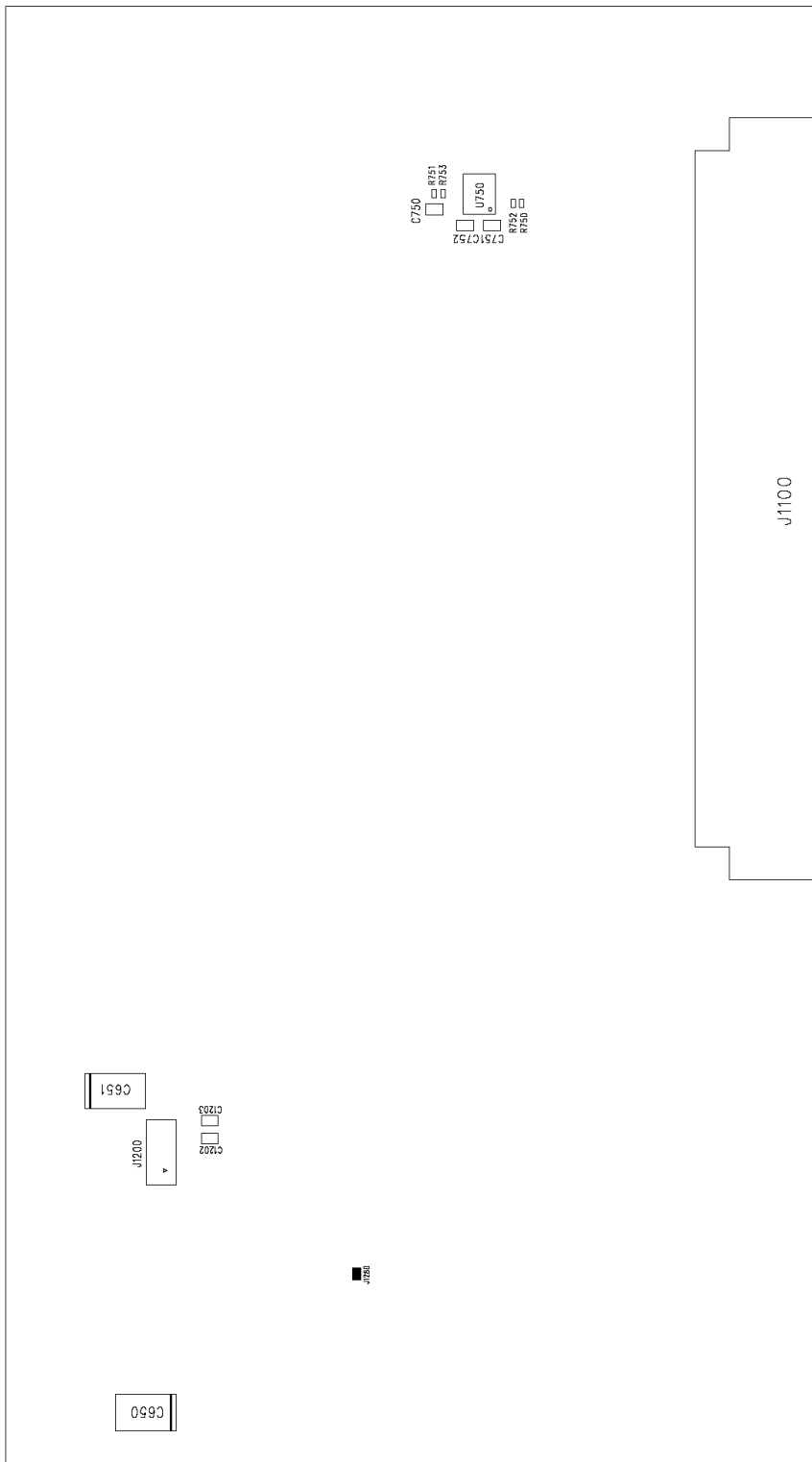





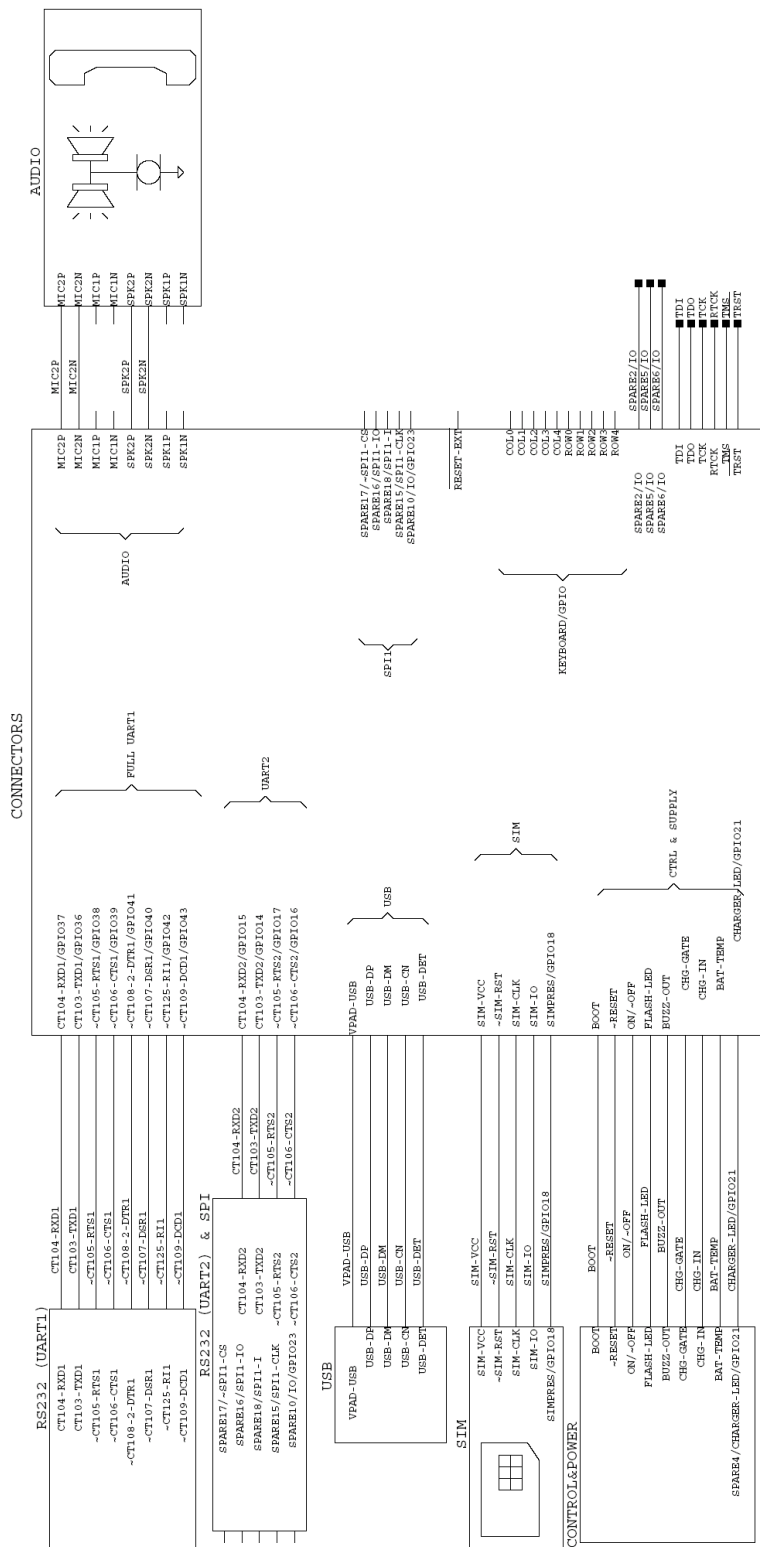


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ENG	CPCHAN/MLD/RMT/KFU	PROJECT		
TITLE		DEVELOPMENT KIT SL6087		
PROJECT		N: D'IDENTIFIANT WM090096-010-30		

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DATE	13/08/2010		<b>SIERRA WIRELESS™</b>
VERSION	V3.0		
ENG	CPC/AM/MLD/AMT/NFU	<b>ASSEMBLY DRAWING BOTTOM</b>	
TITLE			
PROJECT	DEVELOPMENT KIT SL6087	SCALE	0.2, .4 mm <small>(ASSEMBLY)</small>
		FORMAT	---
<b>N: DIDENTIFIANT</b>		<b>WMO900906-010-30</b>	
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PROJECT: DEVELOPMENT KIT SL6087

SCHEMATIC: HIERARCHIC

Date: 30/06/2010

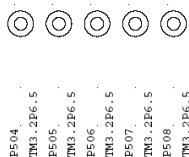
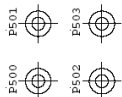
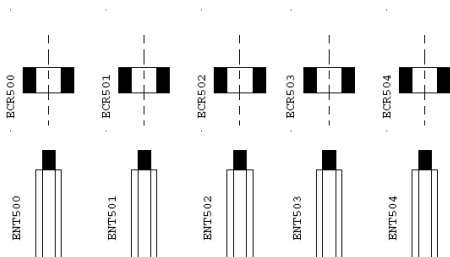
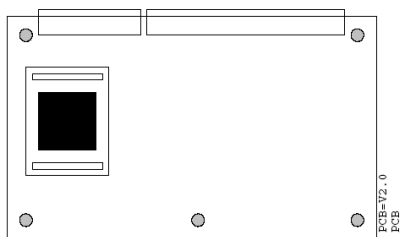
Version: 3.0

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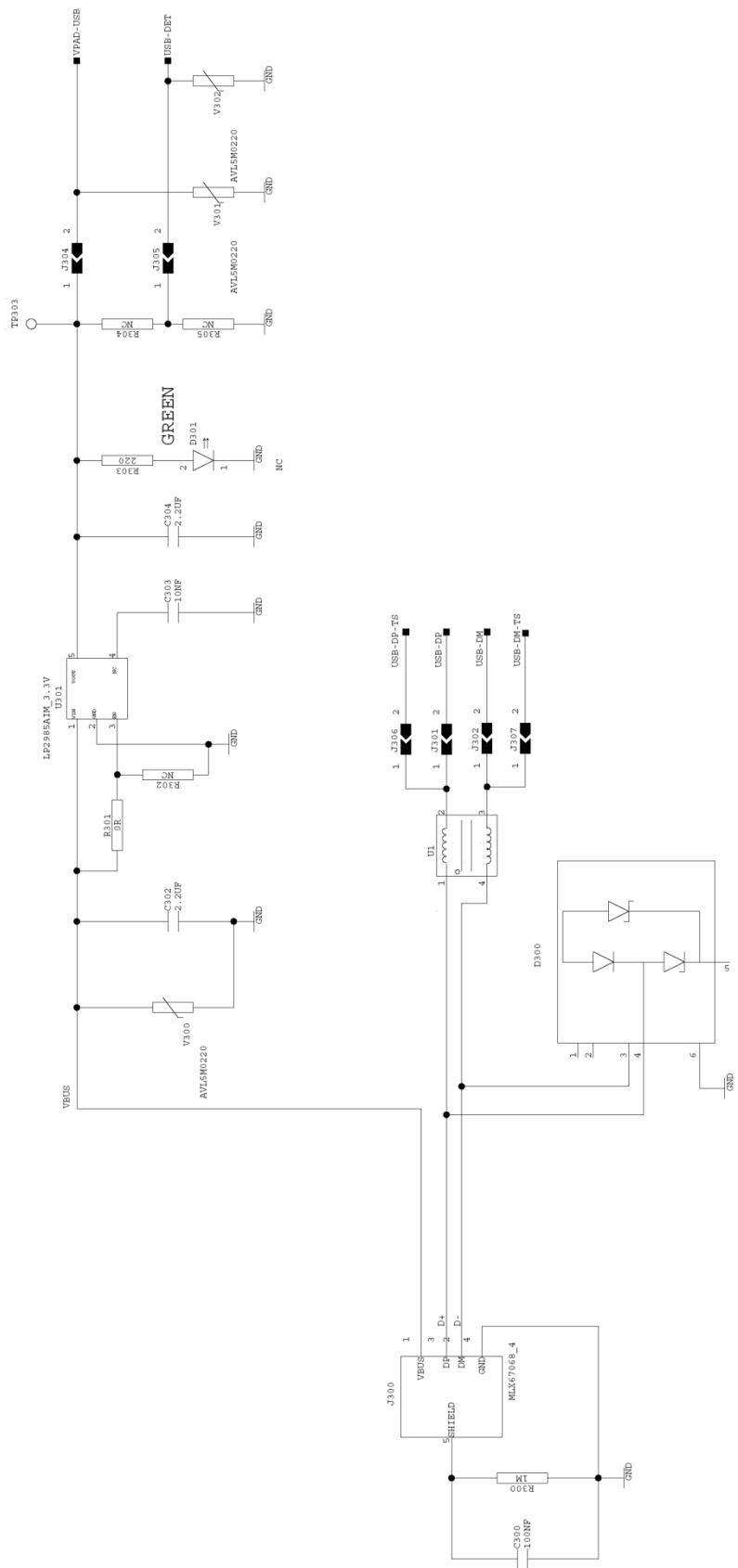
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Make-by: KFU

Sheet : 0/12



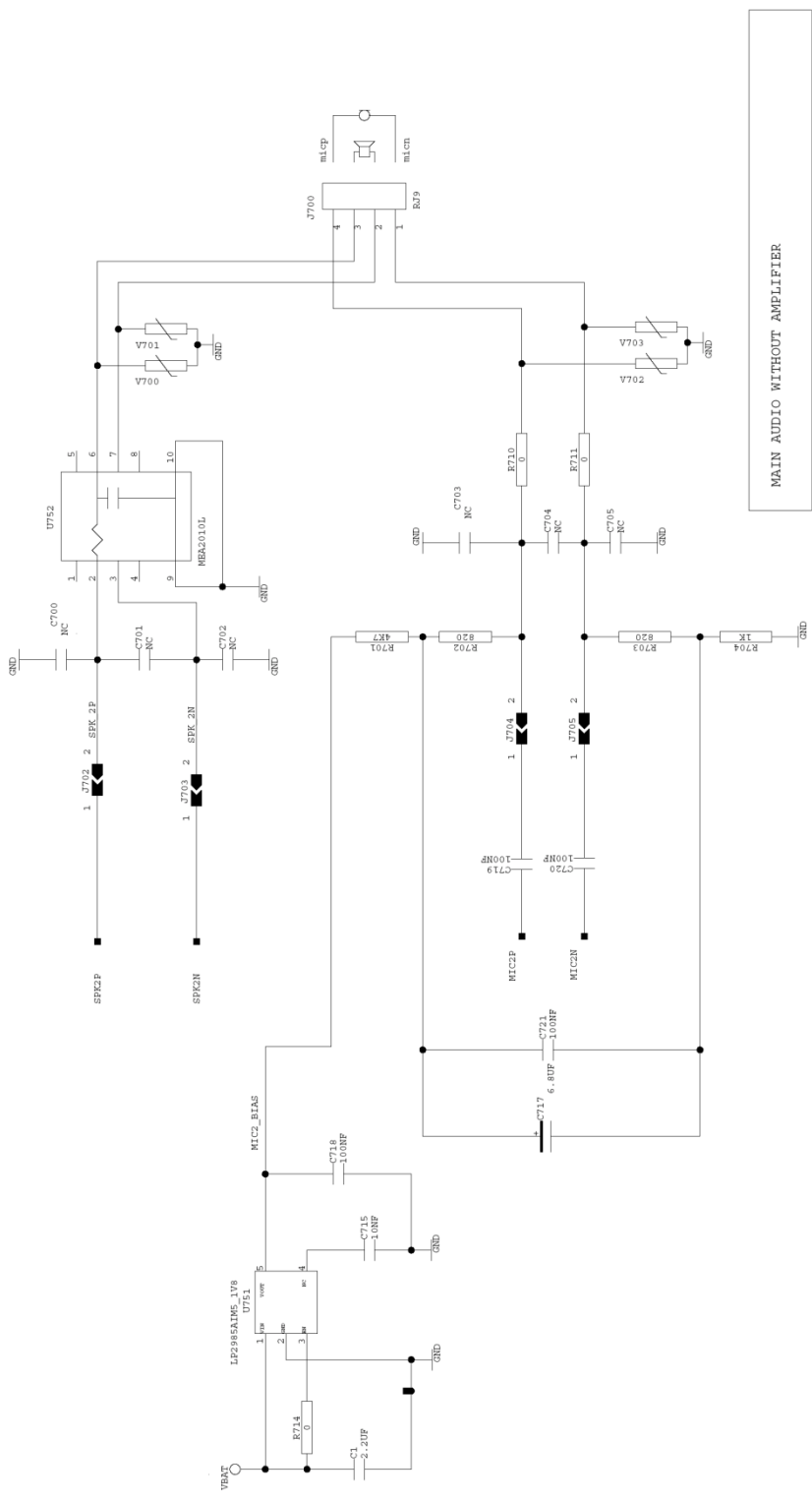
<b>wavecom</b> ®	
PROJECT: DEVELOPMENT KIT SL6087	
SCHEMATIC: MECHANICAL	
Date:	30/06/2010
Version:	3.0
Validated By:	
Verified By:	
Drawn by:	KFU
Sheet :	7/12



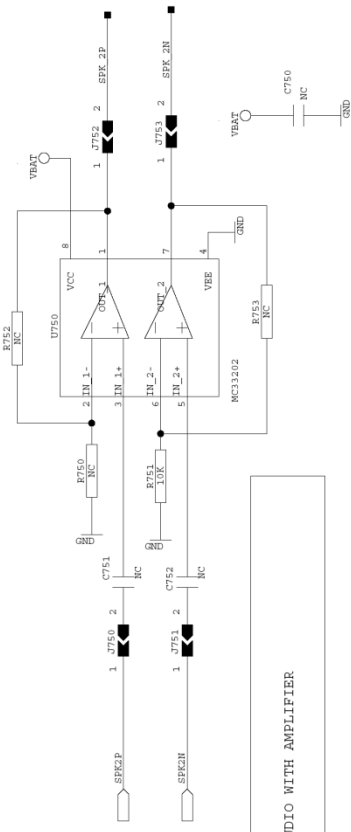


PROJECT: DEVELOPMENT KIT SL6087	
SCHEMATIC: USB	
Date:	30/06/2010
Version:	3.0
Validate by:	
Verify by:	
Drawn by:	RFT
Sheet:	1
Sheet:	5/12






MAIN AUDIO WITHOUT AMPLIFIER

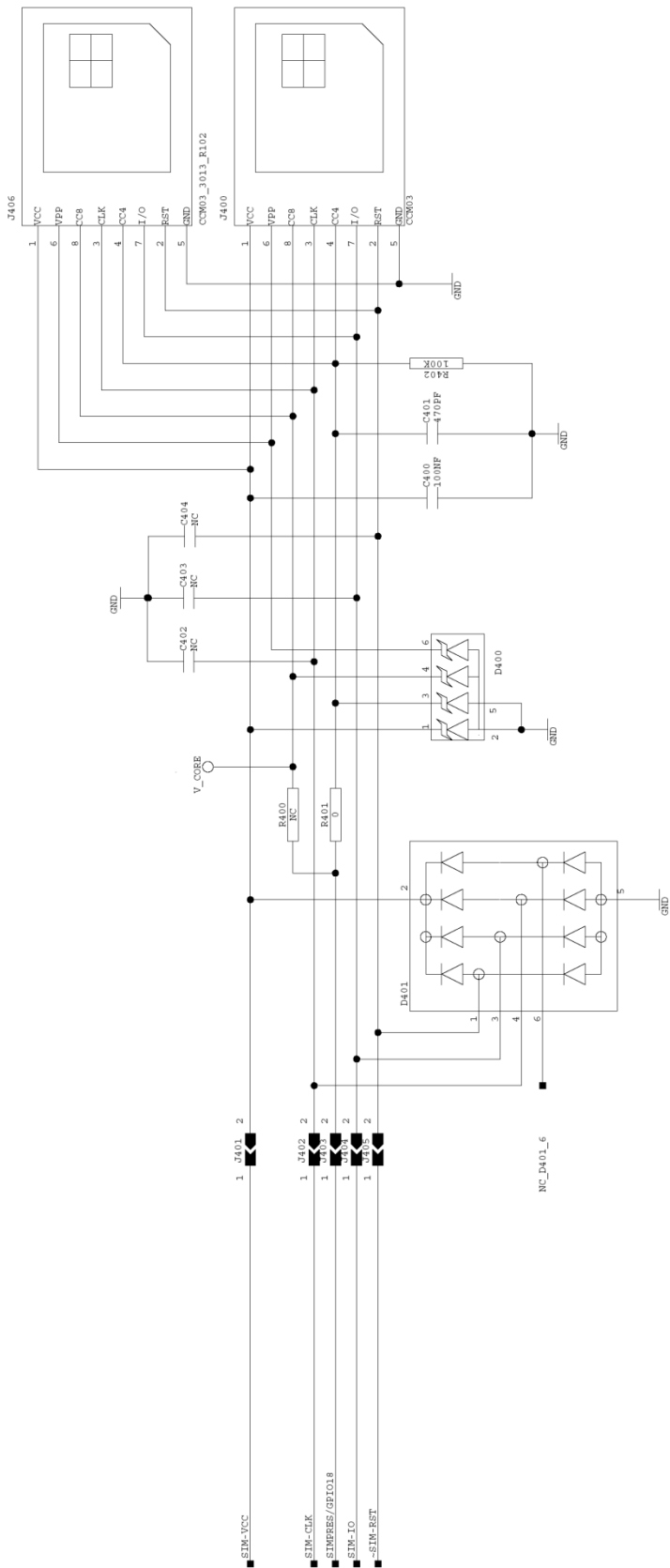


MAIN AUDIO WITH AMPLIFIER



PROJECT: DEVELOPMENT KIT SL6087	
SCHEMATIC: AUDIO	
Date:	30/06/2010
Version:	3.0
Created by:	
Checked by:	
Sheet:	1 / 7/12





**wavecom**

PROJECT: DEVELOPMENT KIT SL6087

SCHEMATIC: SIM

Date: 30/06/2009

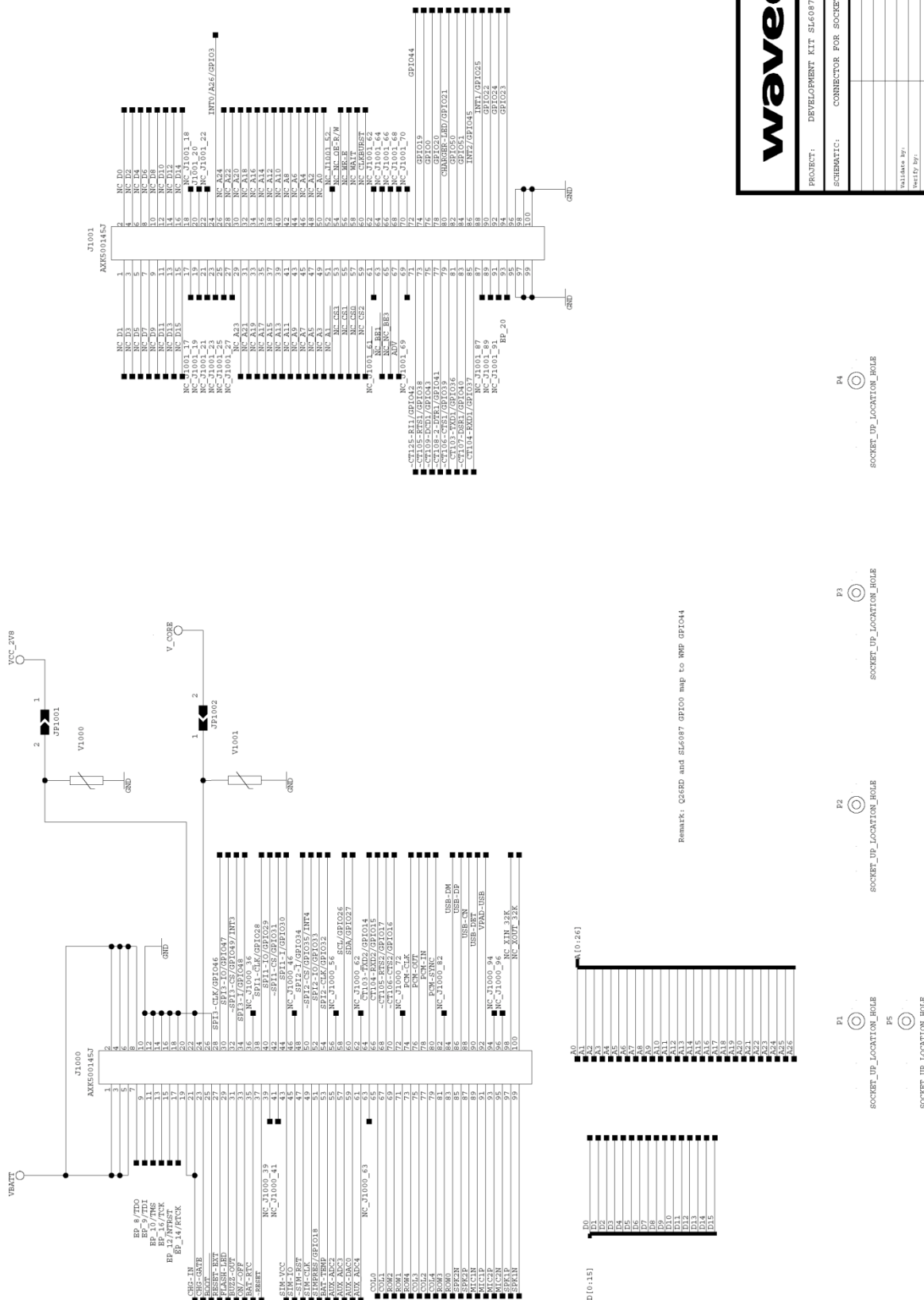
Version: 3.0

Validate by: \_\_\_\_\_

Verify by: \_\_\_\_\_

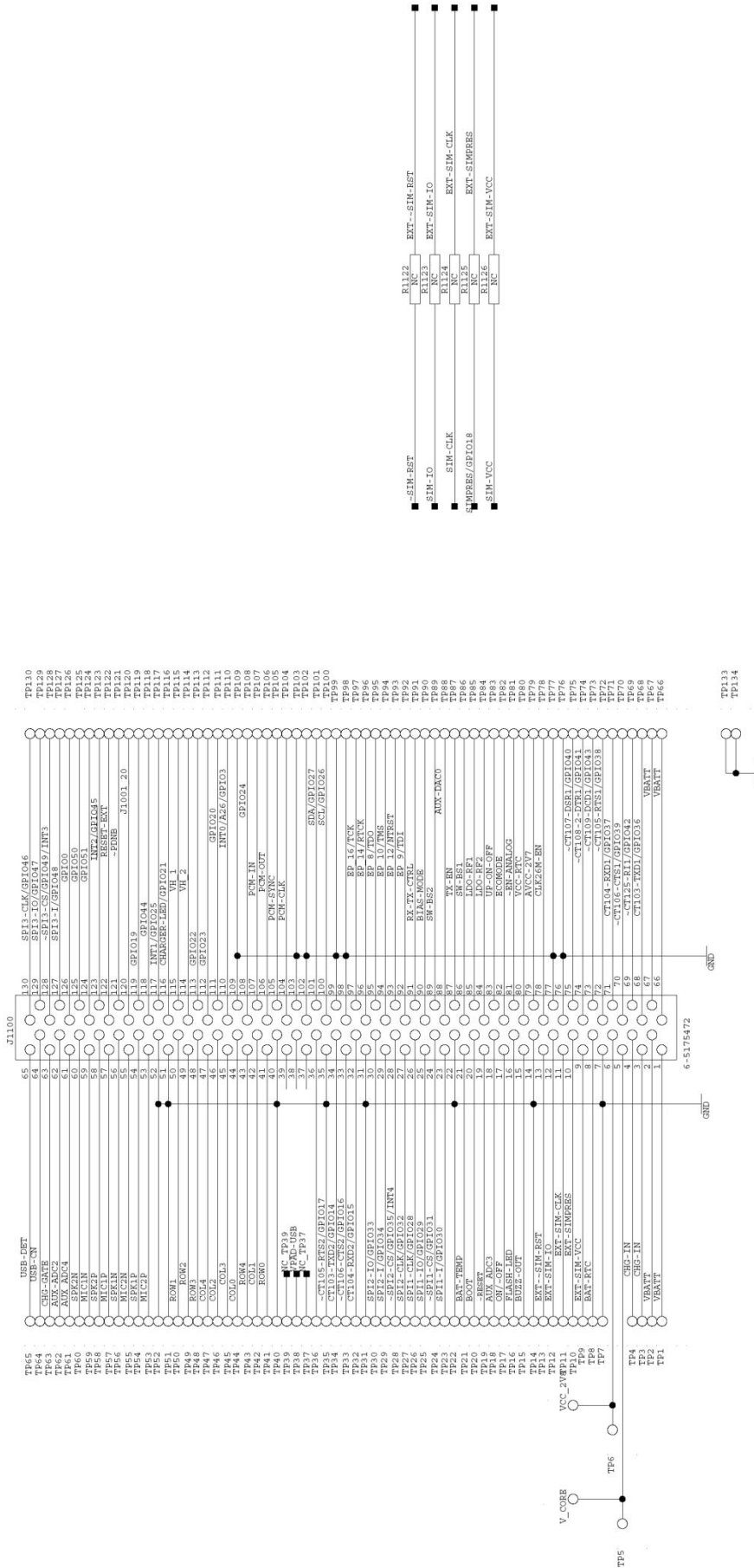
Sheet: 2/12

KPI

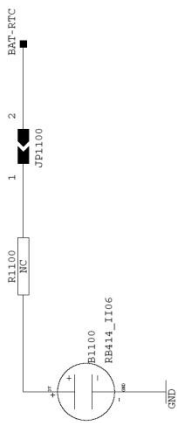


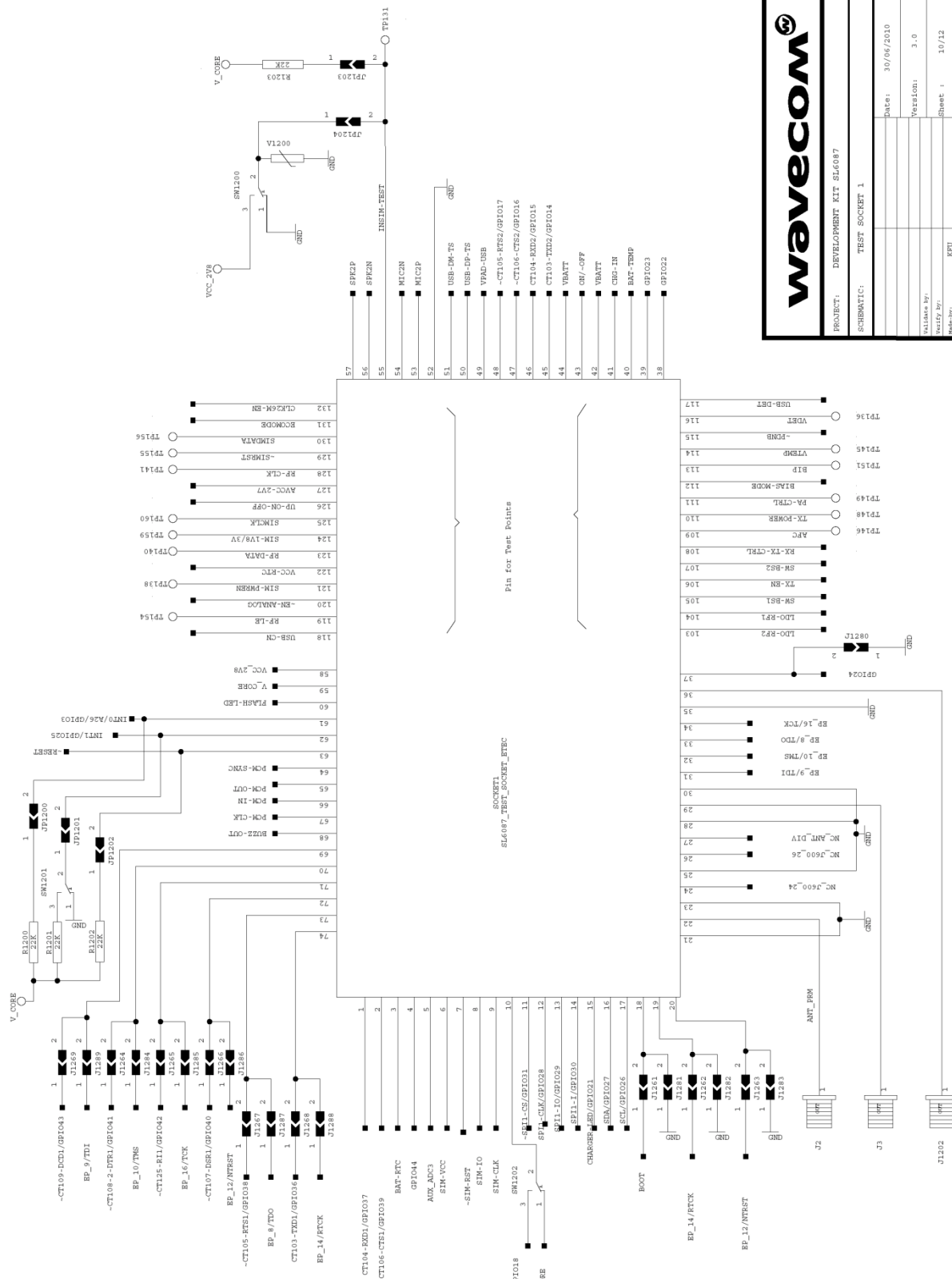
**wavecom**

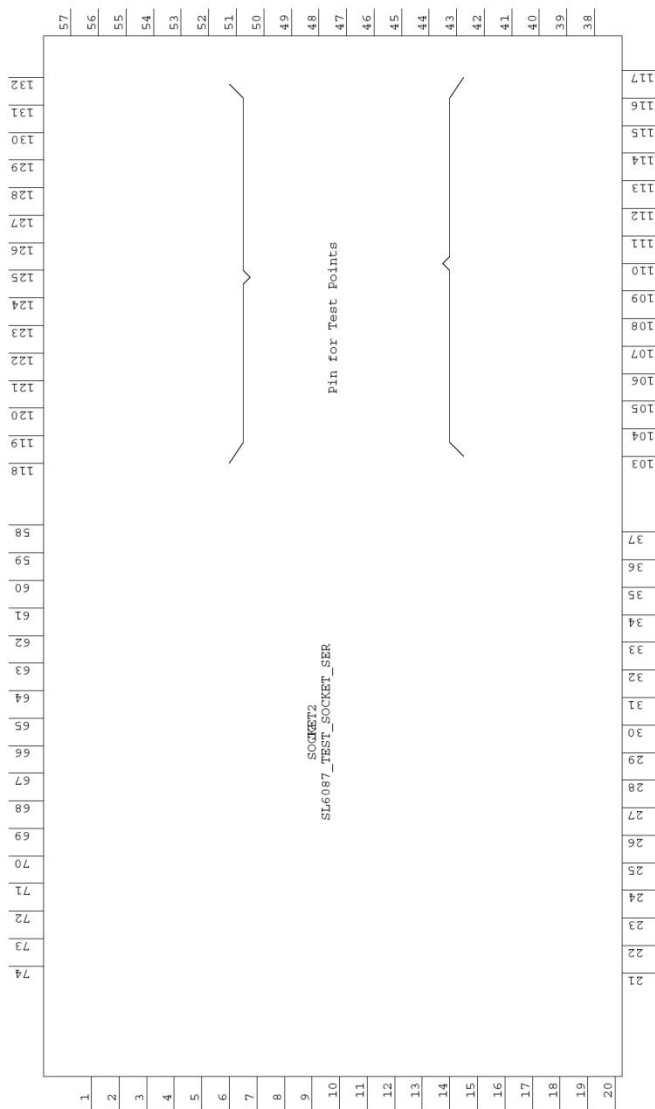
PROJECT: DEVELOPMENT KIT SL6087  
 SCHEMATIC: CONNECTOR FOR SOCKET UP  
 Date: 30/06/2010  
 Version: 1.0  
 Validated by:  
 Verified by:  
 Made-by: KFT  
 Sheet: 1 / 8/12




PROJECT: DEVELOPMENT KIT SL6087  
 SCHEMATIC: CONNECTOR FOR TEST POINT  
 Date: 30/06/2010  
 Version: 3.0  
 Verify by:  
 Made by: KFU  
 Sheet : 9/12

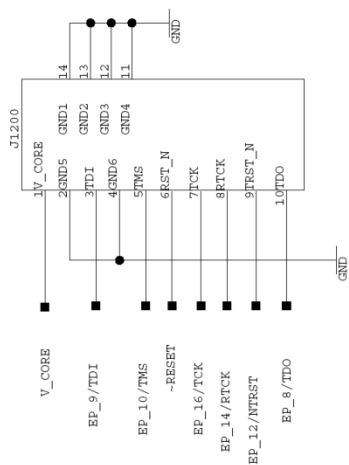
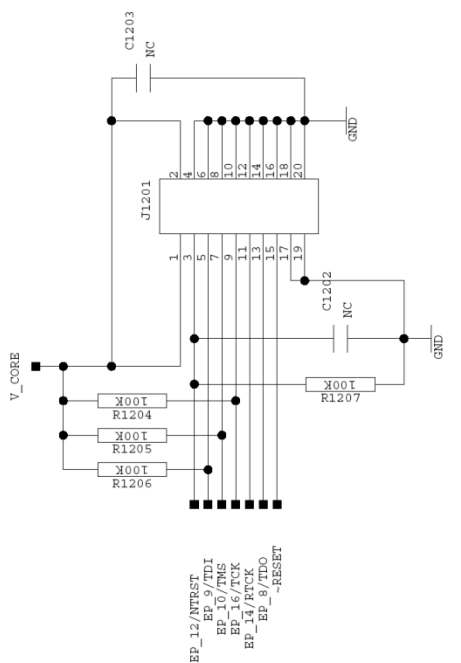






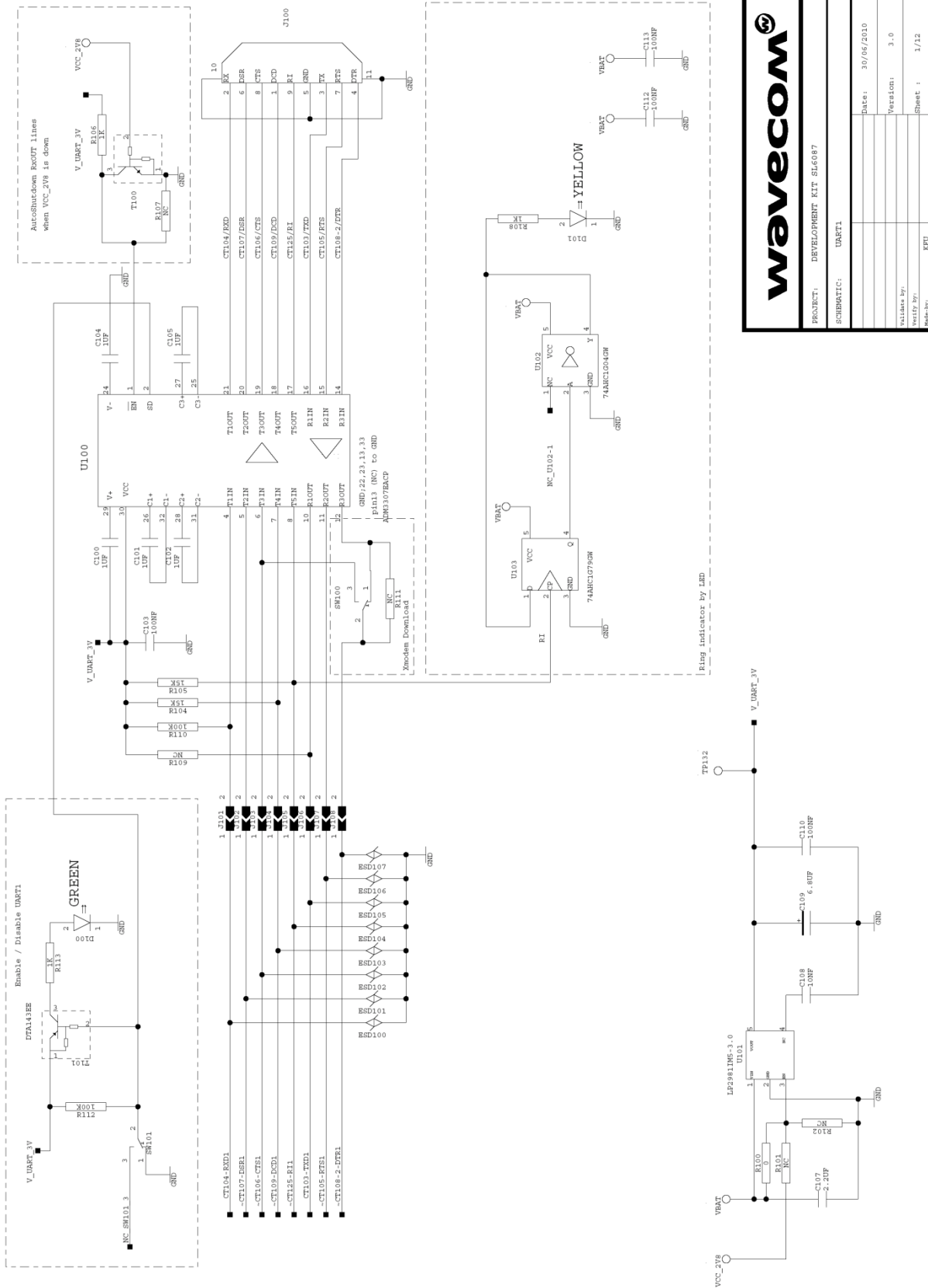


PROJECT: DEVELOPMENT KIT SL6087	
SCHEMATIC: TEST SOCKET 2	
Date:	30/06/2010
Validate by:	Version: 3..0
Verify by:	Sheet : 11/12
Make by:	KFU



<b>wavecom</b> <sup>®</sup>	
PROJECT:	DEVELOPMENT KIT SL6087
SCHEMATIC: CONNECTOR FOR JTAG	
Date:	30/06/2010
Version:	3.0
Validate by:	
Verify by:	
Make-by:	RFU
Sheet :	12/12





**waveCOM**

PROJECT: DEVELOPMENT KIT SL6087

SCHEMATIC: UART1

Date: 30/06/2010

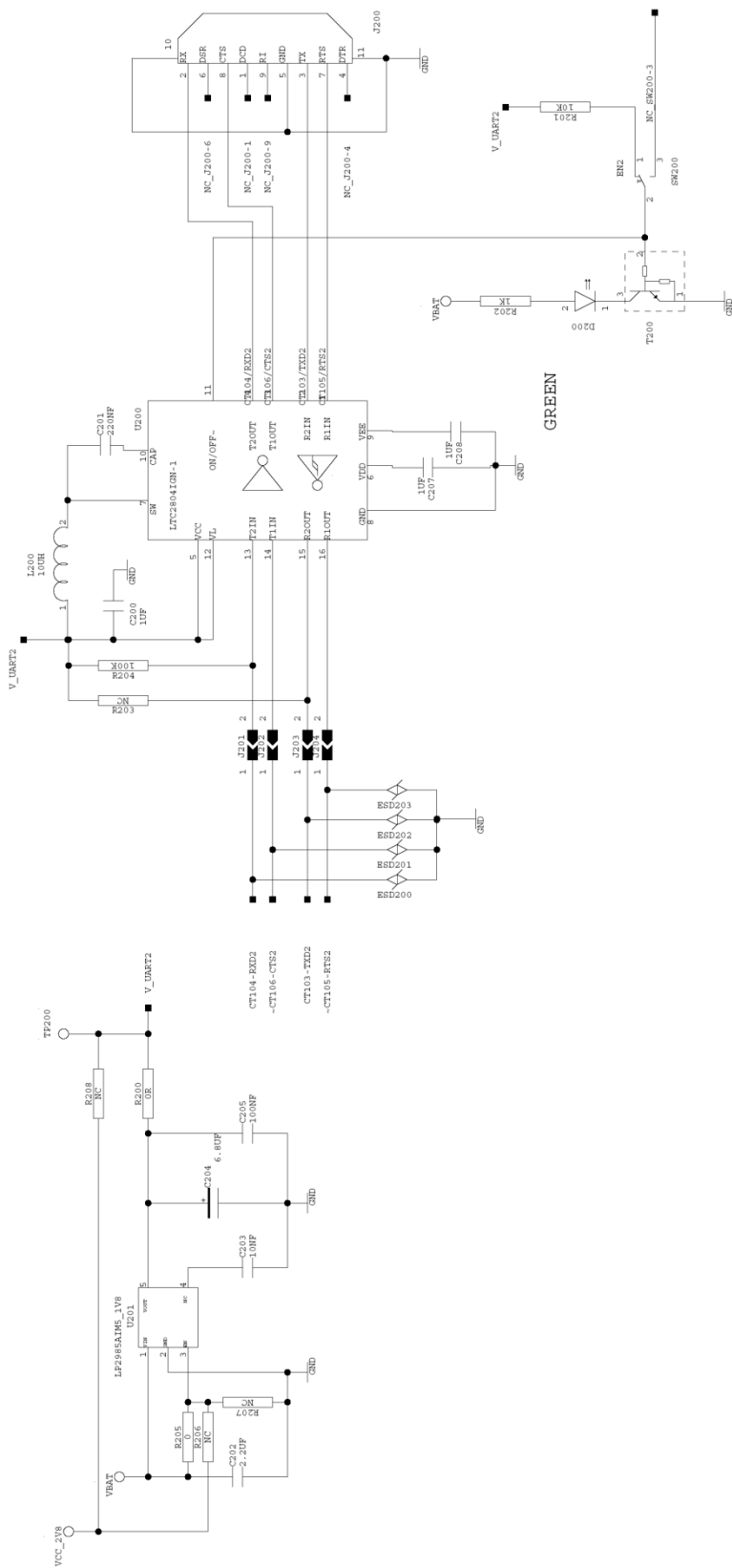
Version: 3.0

Validated by:

Verify by:

Sheet: 1/12

Rev: 1/12



**wavecom**

PROJECT: DEVELOPMENT KIT SL6087

SCHEMATIC: UART2

Date: 30/06/2010

Version: 1.0

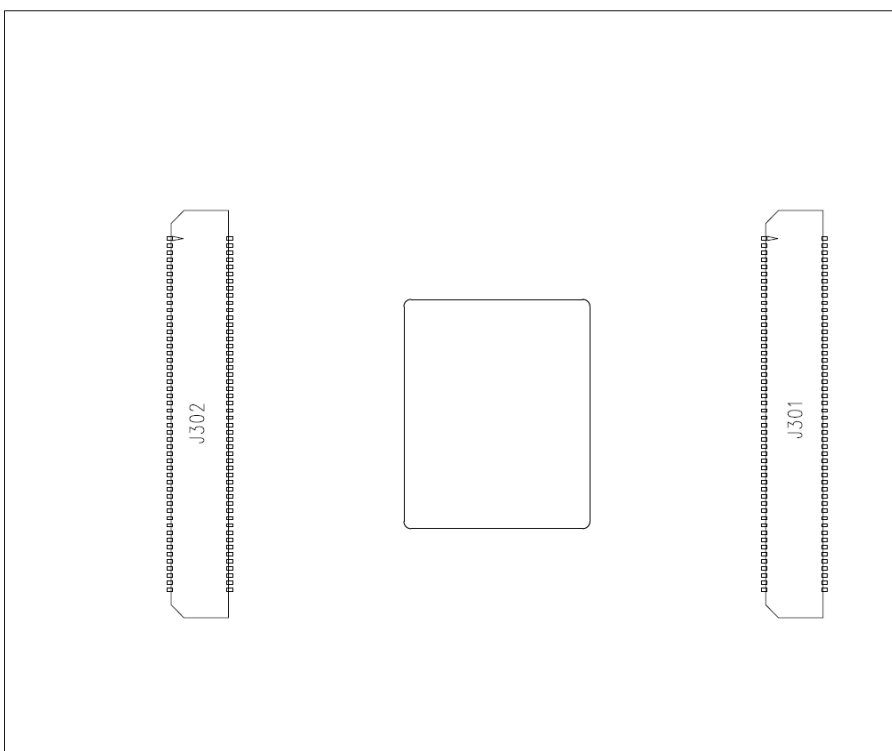
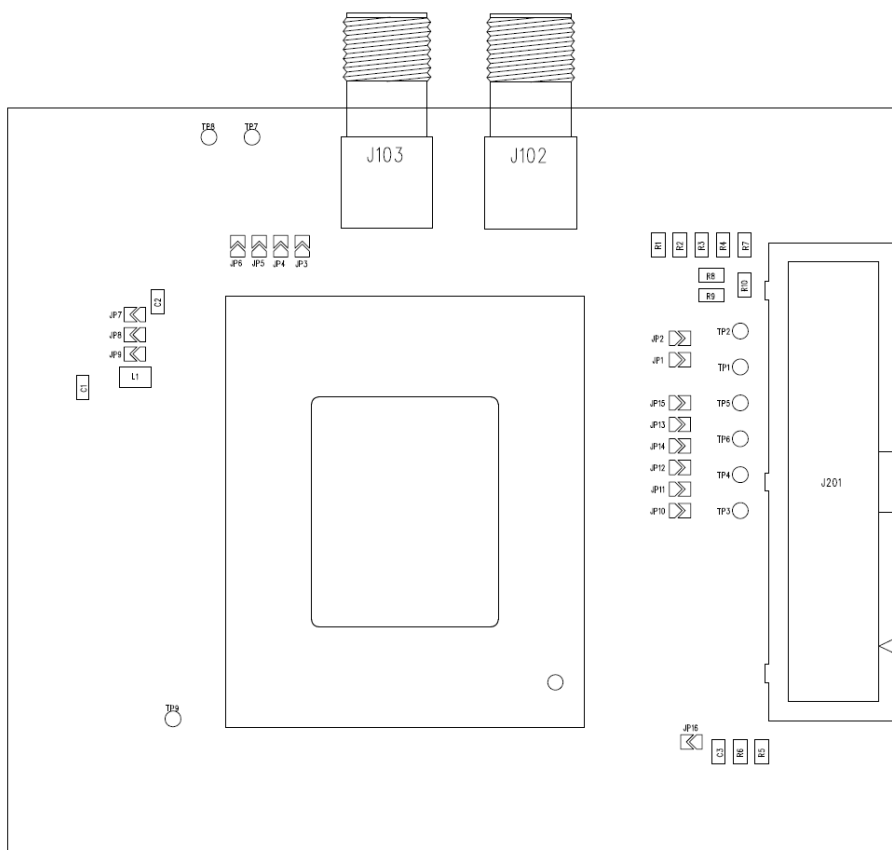
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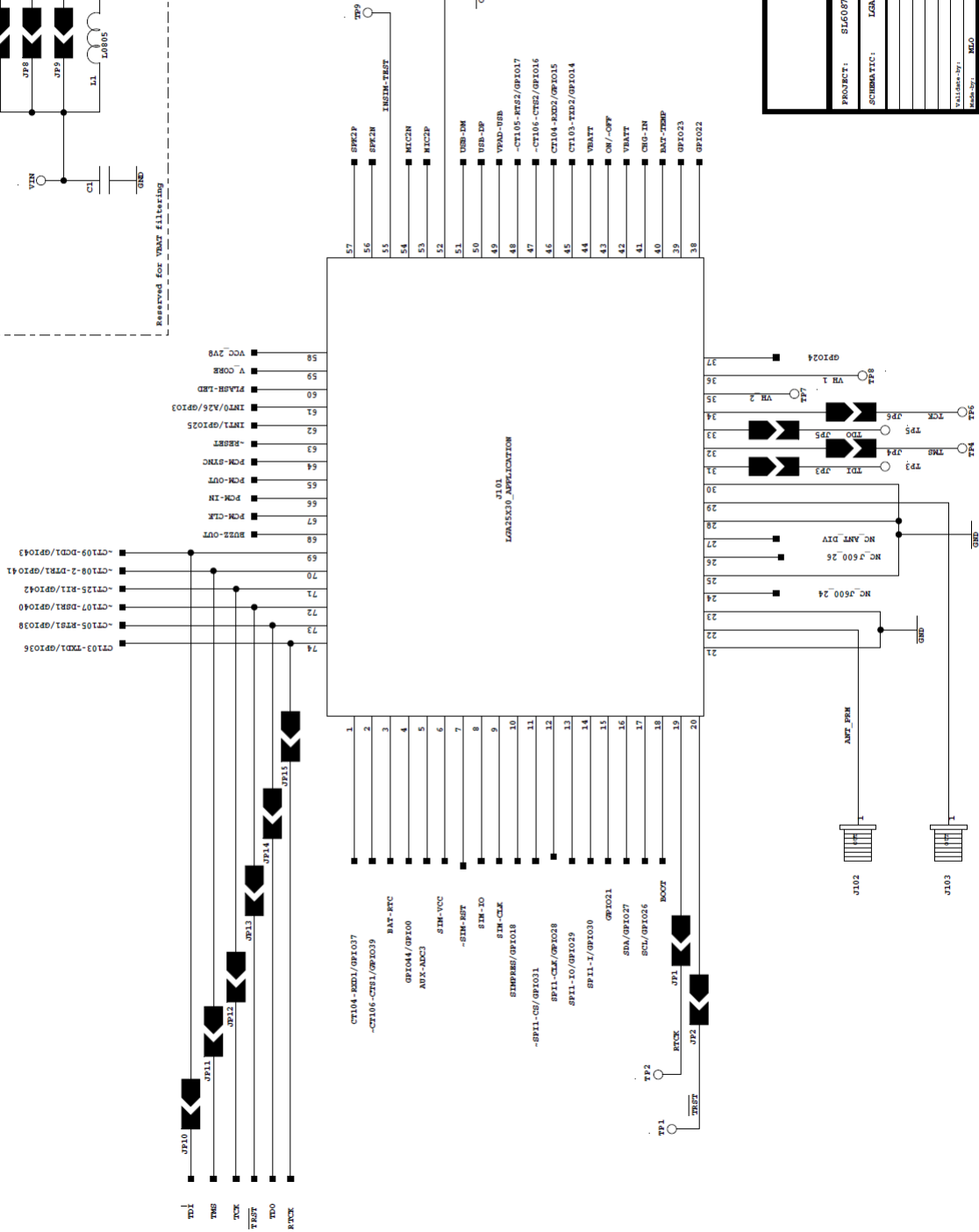
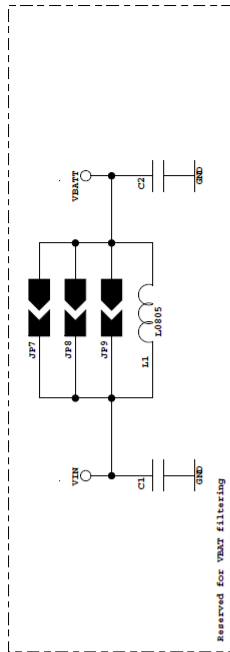
Verified by:

Drawn by: KFU

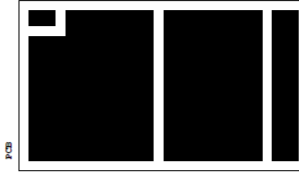
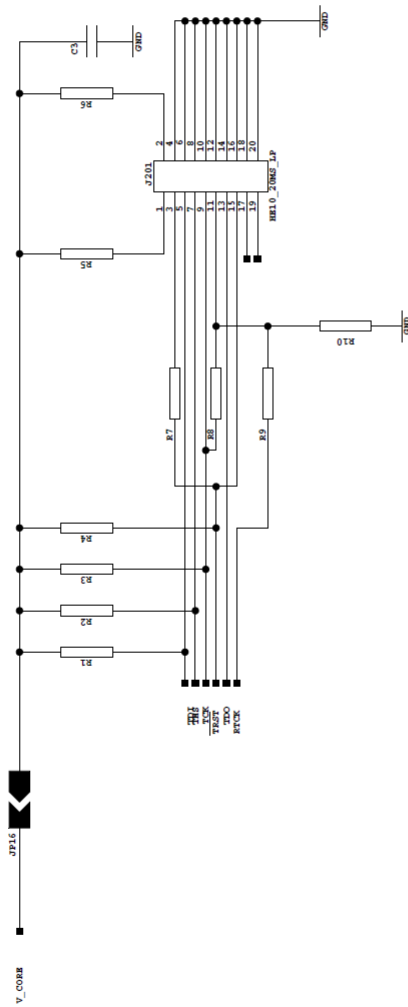
Sheet: 4/12

## 10.2. AirPrime SL6087 Socket Board

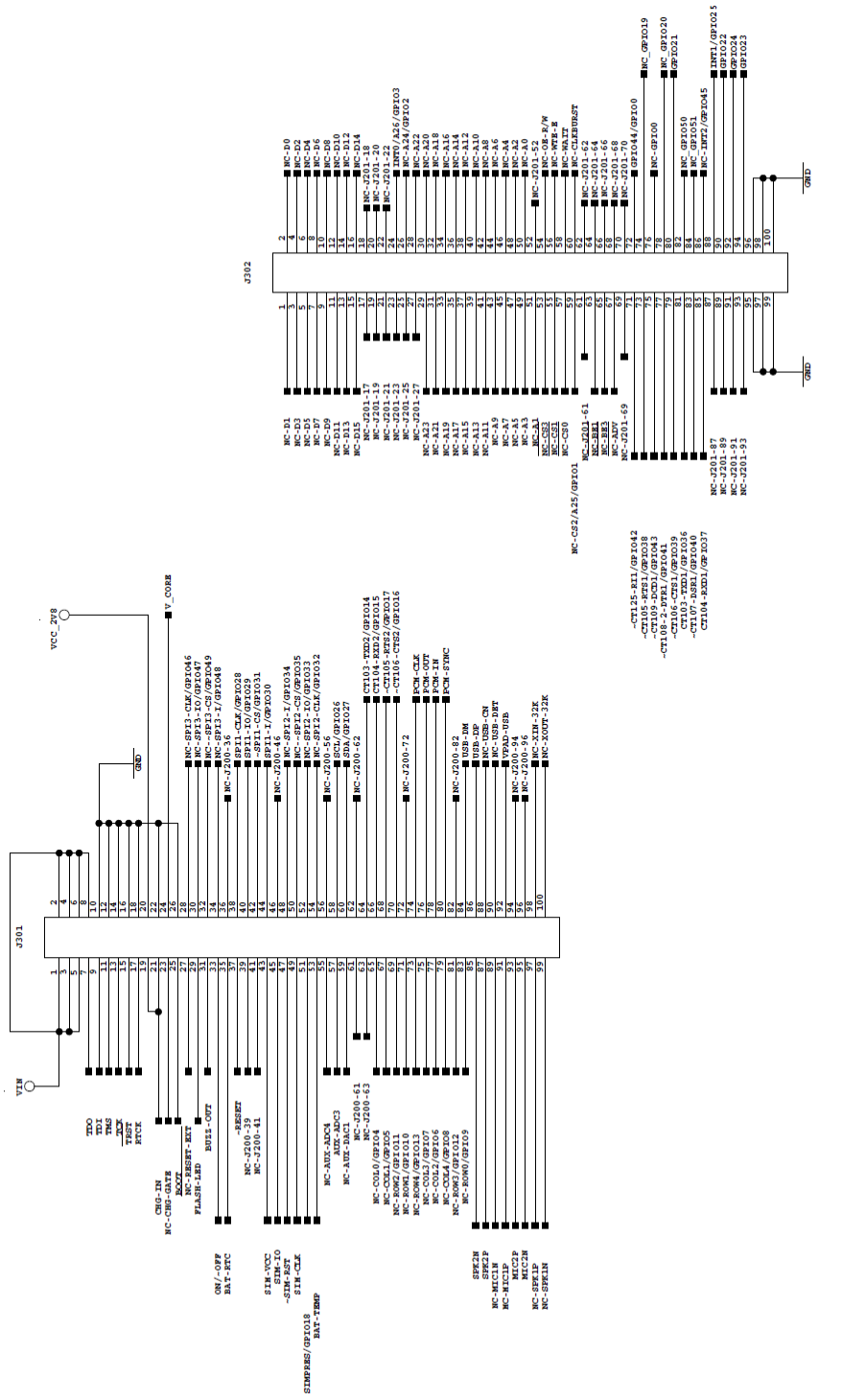




PROJECT: SL6087 SOCKET UP	
SCHEMATIC: LGA CONNECTOR	
Date:	07/01/2010
Version:	1.0
Package No:	
Page No:	1/3



PROJECT: SL6087_SOCKET_IP	
SCHEMATIC: PCB and JTAG	
Date:	07/01/2010
Version:	1.0
Number of Pages:	2/3
Sheet:	2/3



PRODUCT:	SL6887 SOCKET UP
SCHEMATIC:	WHEXIX DEV KIT CONNECTOR
Date:	07/01/2010
Version:	1.0
Author:	
Sheet:	3/3

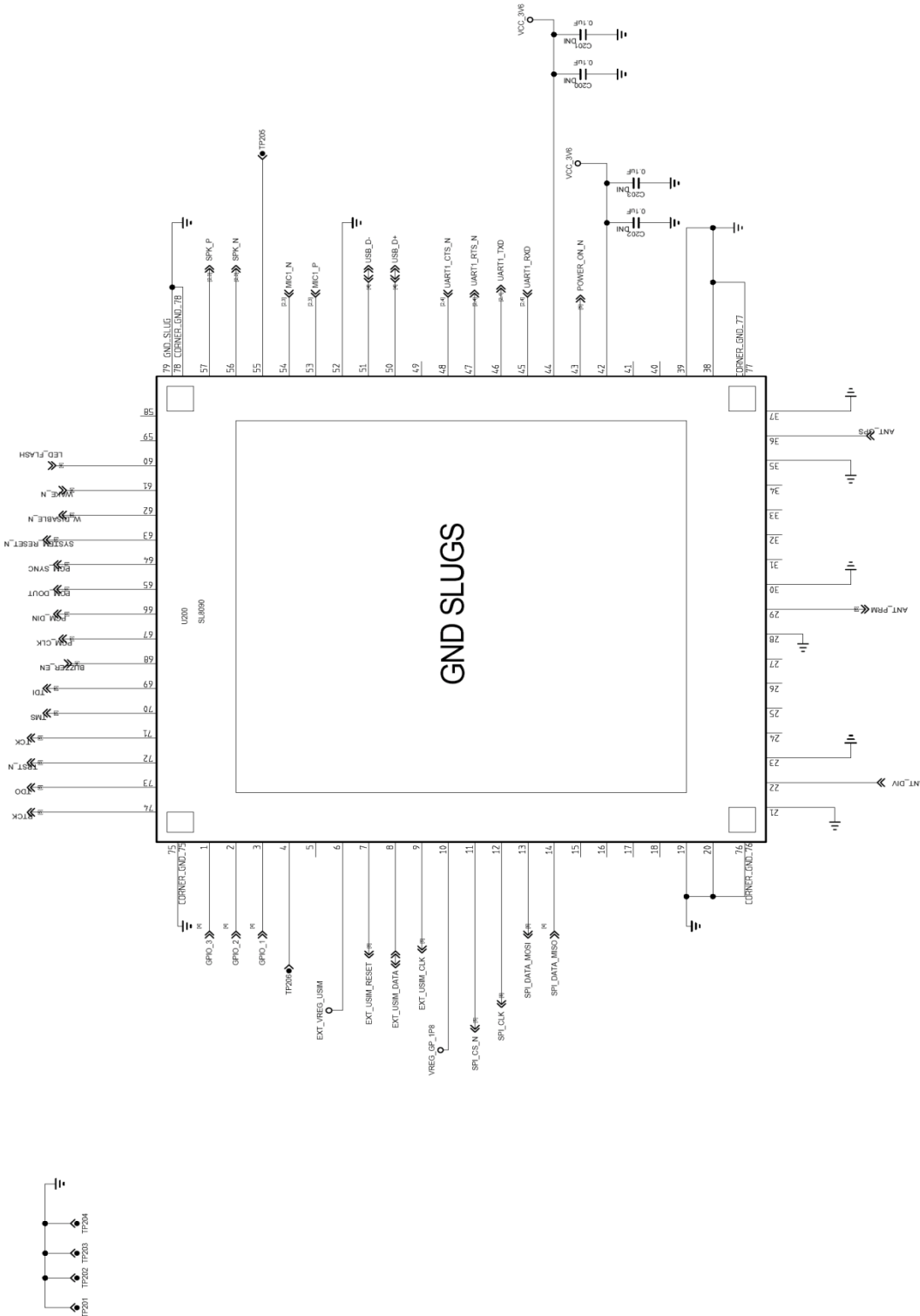
P4 SOCKET UP LOCATION: 604R

P3 SOCKET UP LOCATION: 604R

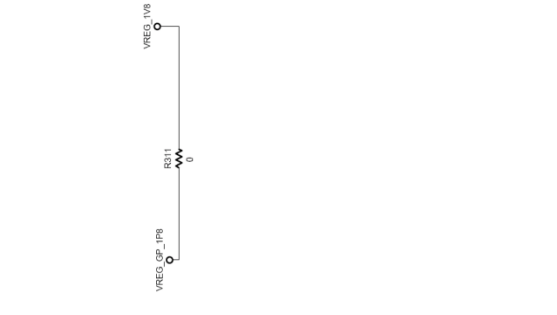
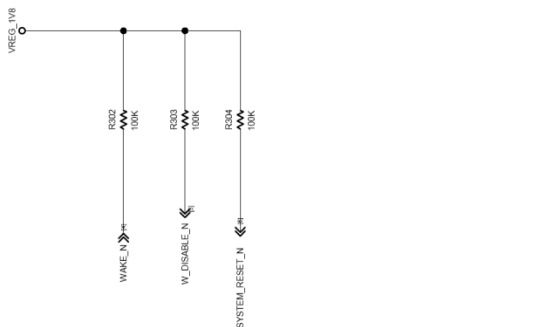
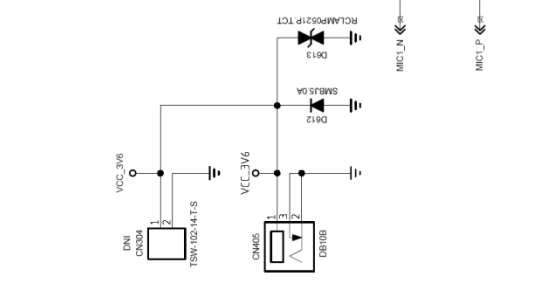
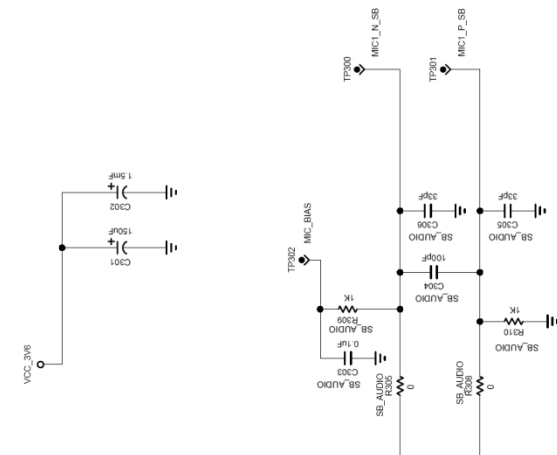
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P1 SOCKET UP LOCATION: 604R

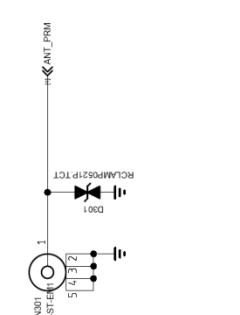
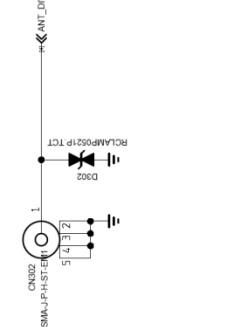
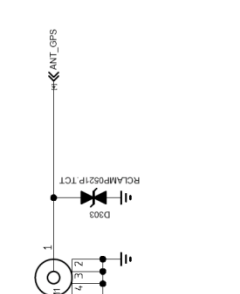
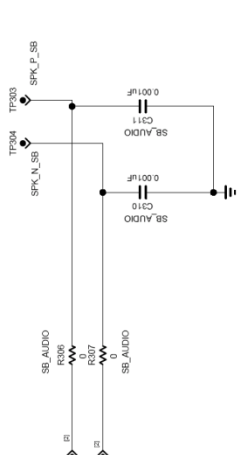
# 10.3. AirPrime SL80xx Socket Board



PROJECT: SL800X_SL800X		Sierra Wireless	
APPROVALS:		SCHEMATIC DIAGRAM	
DATE:	23 Sep 2010	FILE:	
DRAWN:	NLO	CHECKED:	
ENGINEER:		SIZE:	D
		FORM NO.:	2500252_E
		SCALE:	NONE
		SHEET:	2 OF 04
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WA\_DEV\_SL6087\_UGD\_003 Rev 004

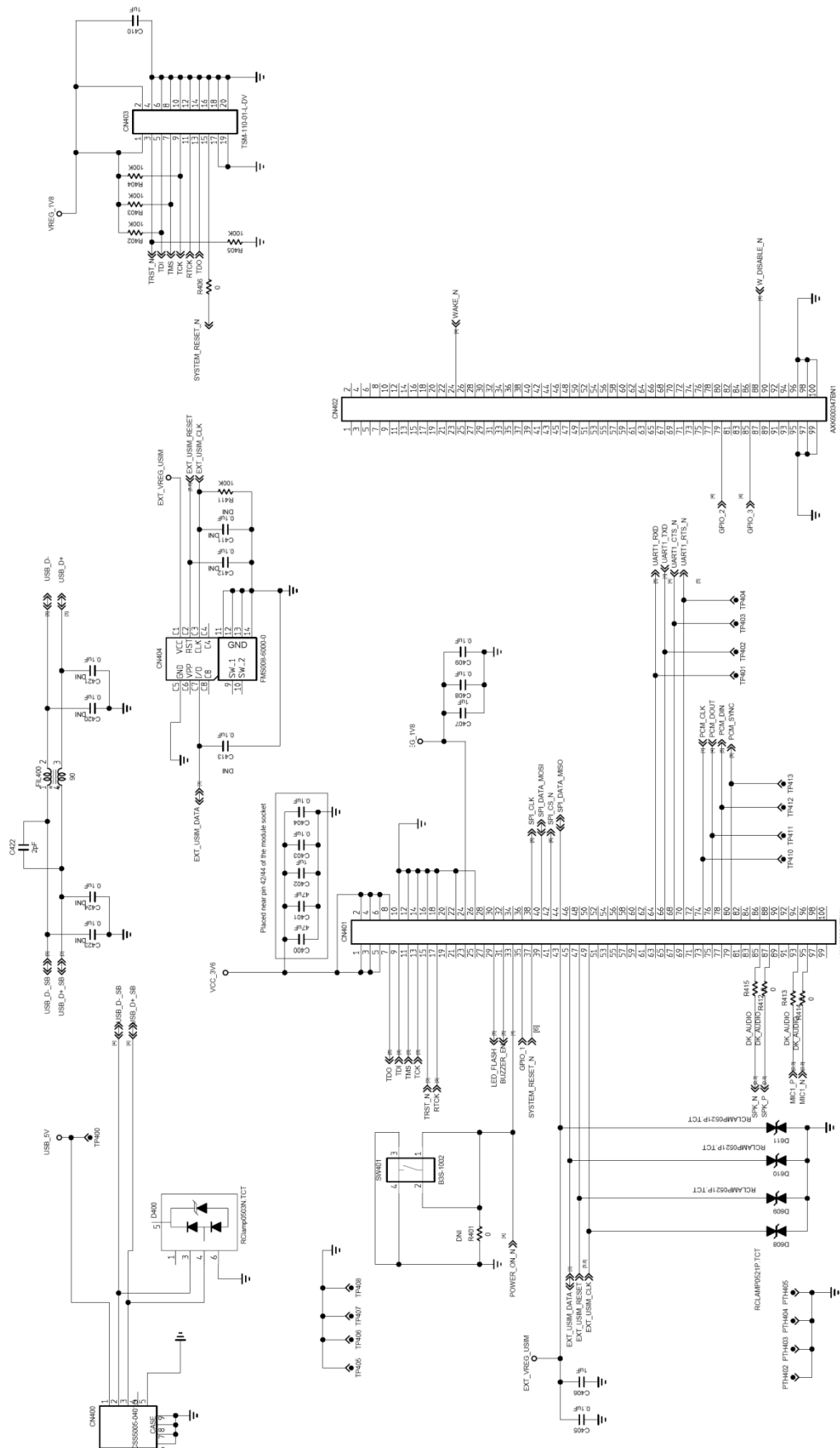


March 24, 2011

PROJECT: SL608X, SL800X		EQUIV: V303P1	
APPROVALS: MLO		DATE: 23 Sep, 2011	
DRAWN: MLO		TITLE: SCHEMATIC DIAGRAM	
CHECKED:		SL800X Socket Up Board Schematics	
DESIGNED:		SIZE: D	
DATE:		FORM NO.:	
REVISED:		DWG. NO.:	
DRAWN:		2500252_E	
CHECKED:		PAGE: 3	
DESIGNED:		OF 04	

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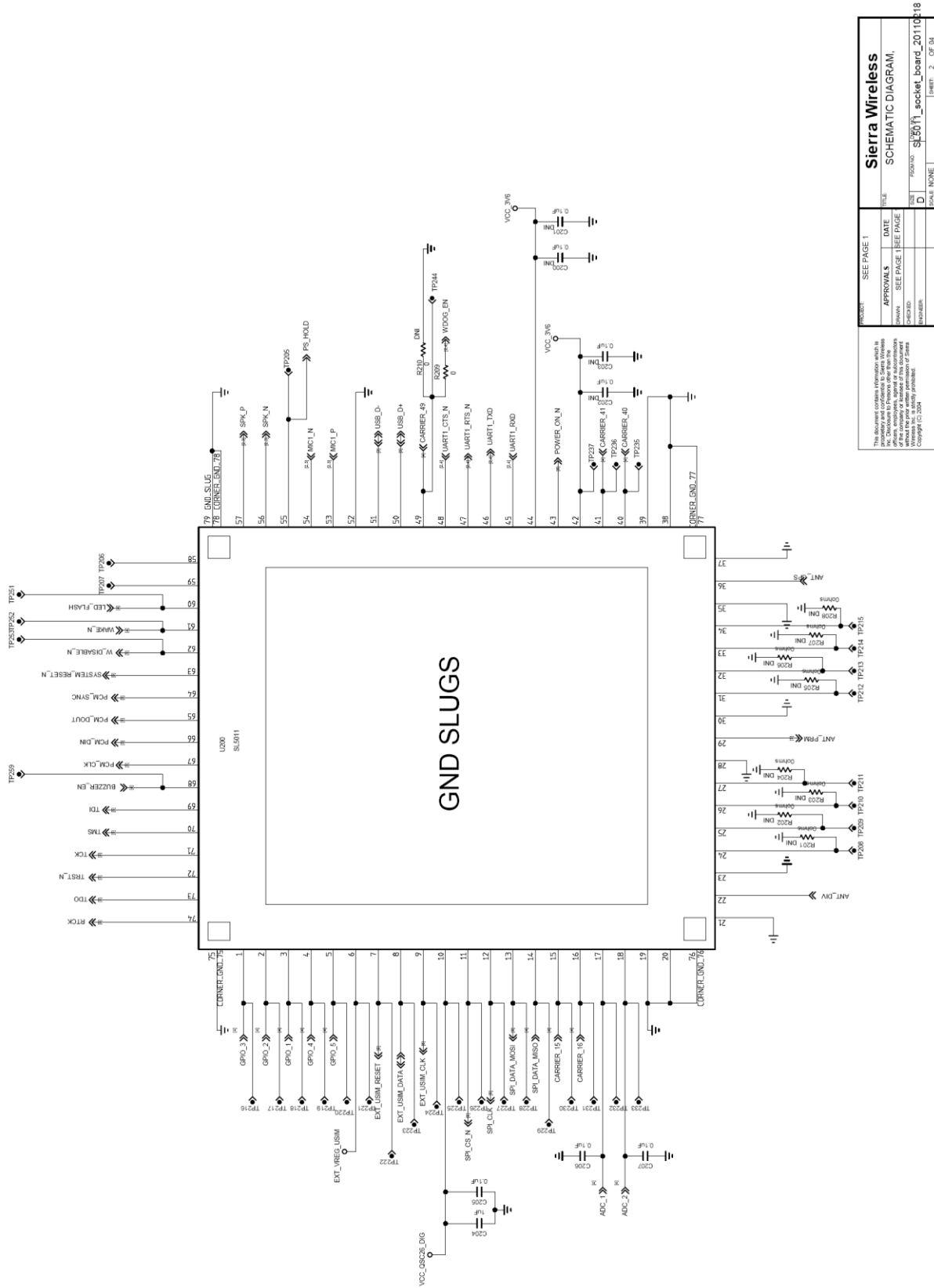


PROJECT		SI80XX_SL80XX
APPROVALS	DATE	23 Sep, 2011
DESIGNER	REV	1
CHECKED	DESIGN NO.	2500252_E
DATE	SCALE	NONE
SHEET		4 OF 04

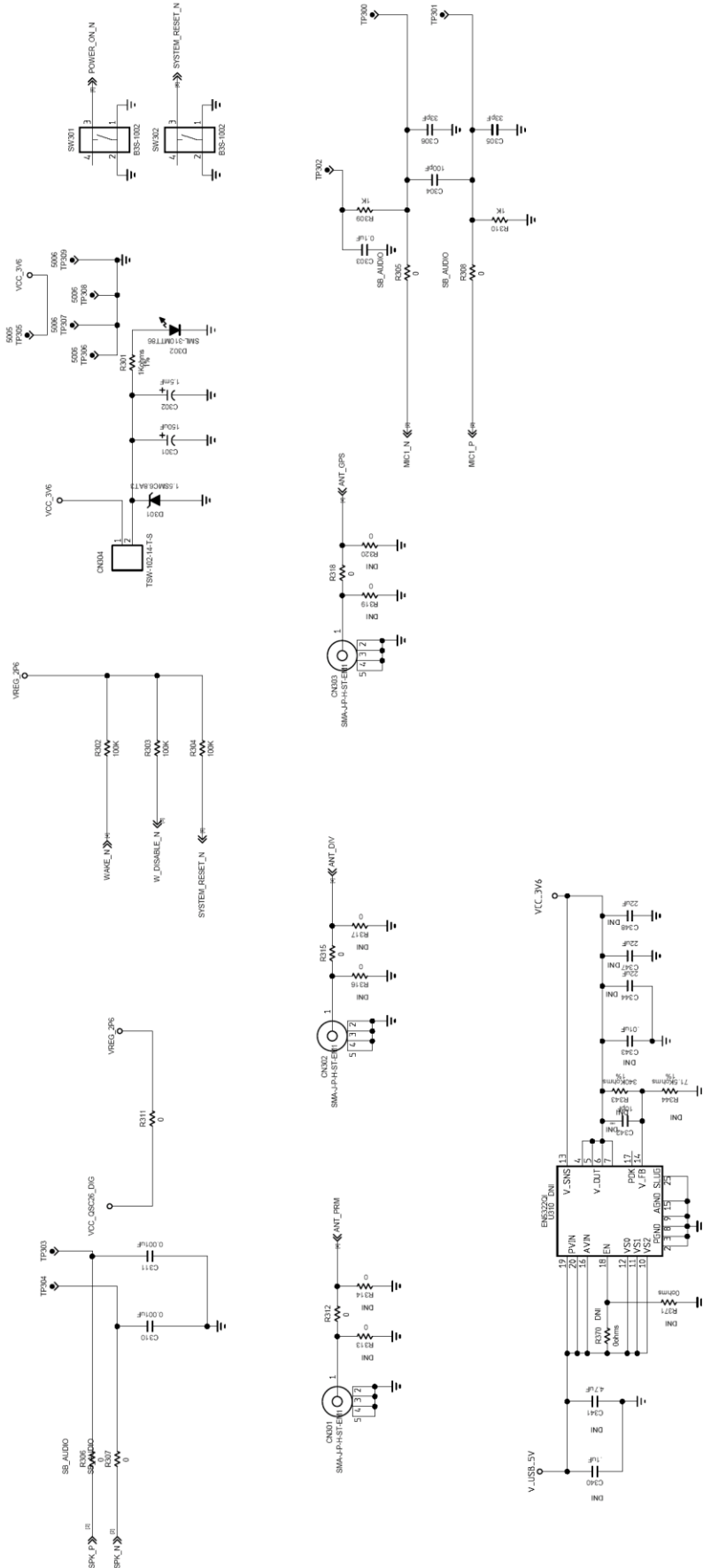
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**Sierra Wireless**  
 SCHEMATIC DIAGRAM,  
 SL80XX Socket Up Board Schematics

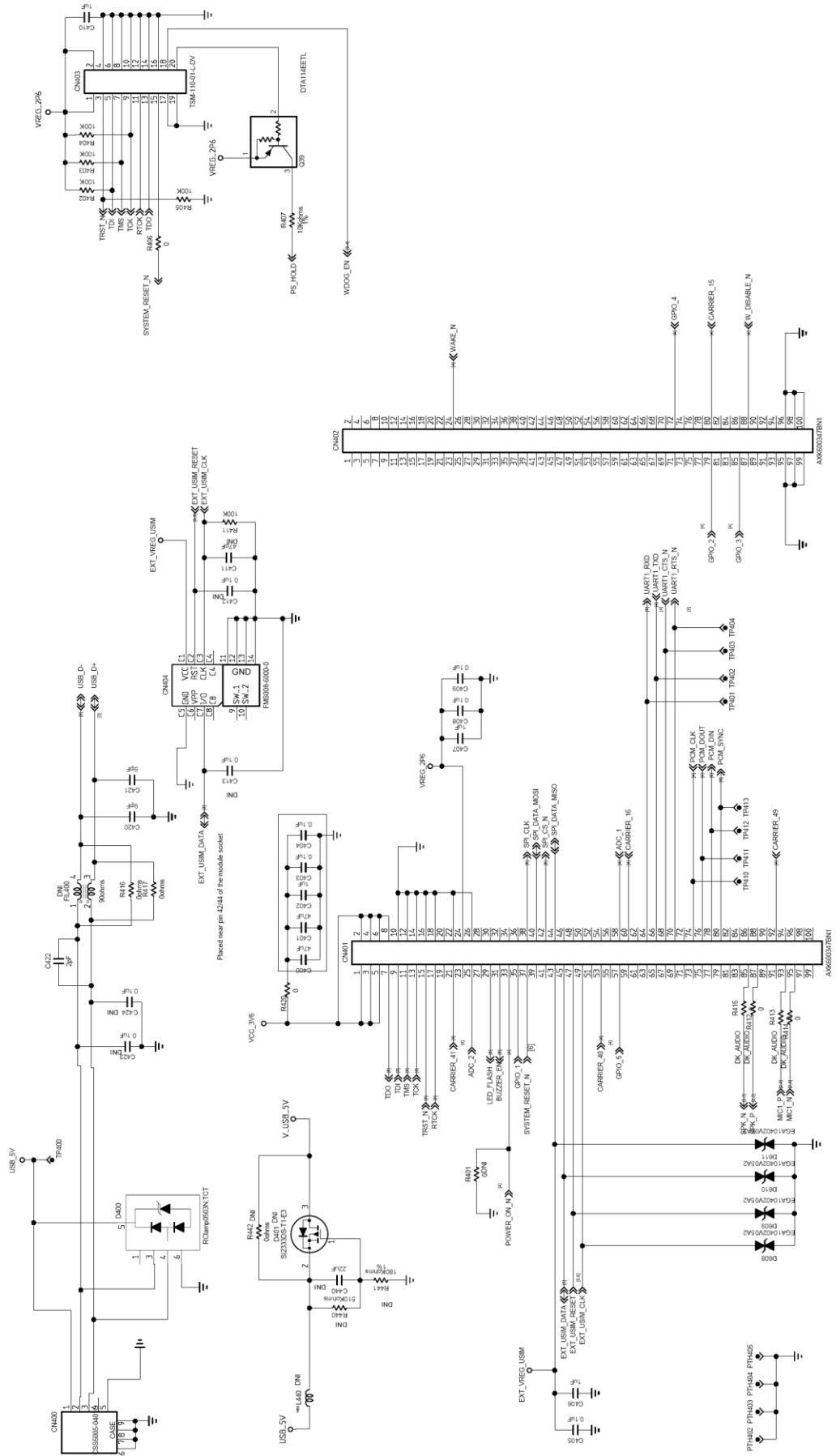
# 10.4. AirPrime SL501x Socket Board



<p>SEE PAGE 1</p> <p>APPROVALS</p> <p>DATE</p> <p>APPROVED</p> <p>DATE</p> <p>APPROVED</p> <p>DATE</p> <p>APPROVED</p> <p>DATE</p> <p>APPROVED</p> <p>DATE</p> <p>APPROVED</p> <p>DATE</p>	<p>Sierra Wireless</p> <p>SCHEMATIC DIAGRAM</p> <p>PROJECT NO: SL501x_socket_board_20110118</p> <p>SCALE: NONE</p> <p>SHEET: 2 OF 04</p>
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PROJECT: SEE PAGE 1		Sierra Wireless	
APPROVALS:		SCHEMATIC DIAGRAM	
DATE:	DATE:	REV:	REV:
DRAWN: SEE PAGE 1 (SEE PAGE 1)	DATE:	DESIGNED:	FILE NAME: S3071_socket_board_20110118
DESIGNED:	DATE:	APPROVED:	FILE NAME: S3071_socket_board_20110118
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PROJECT	SEE PAGE 1	Sierra Wireless
APPROVALS	DATE	TITLE
DESIGNED	SEE PAGE THREE PAGE	SCHEMATIC DIAGRAM,
CHECKED		
ENCOUNTER		
DRAWN		
DATE		
FILE NO.	SL6071_socket_board_20110118	
SCALE	NONE	
SHEET #	4	OF 04

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