



## SG923-0004 Kraken Eval Board

### Overview

SG923-0004 Kraken Eval Board provides an easy way for customers to evaluate and develop applications with Kraken Wi-Fi modules. The eval board provides power to the module and brings communications interfaces to standard connectors.

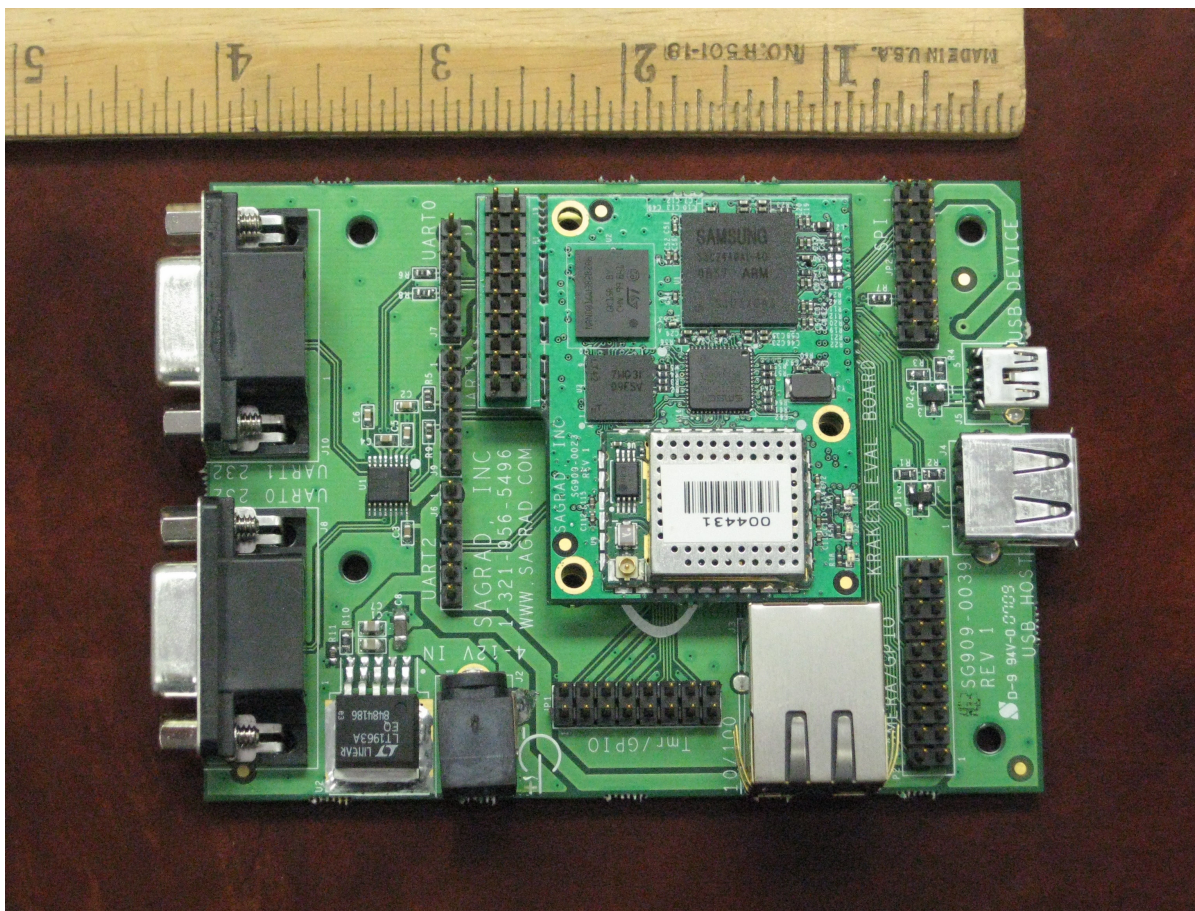
Most signals can also be used as general-purpose IO, and are available at standard 0.1" pitch headers.

### Features

- Variety of Standard Communications Interfaces
  - 10/100Base-T (RJ45)
  - 3 UART ports (2 DB9)
  - 2 USB ports – Type A host, Mini-B Device
  - 1 SPI port (Header)
- GPIO and Peripherals
  - I2S Digital Audio interface (Header)
  - 8-bit camera interface (Header)
  - Timer I/O (Header)
- On board regulator accepts 4-12V (5V optimal)

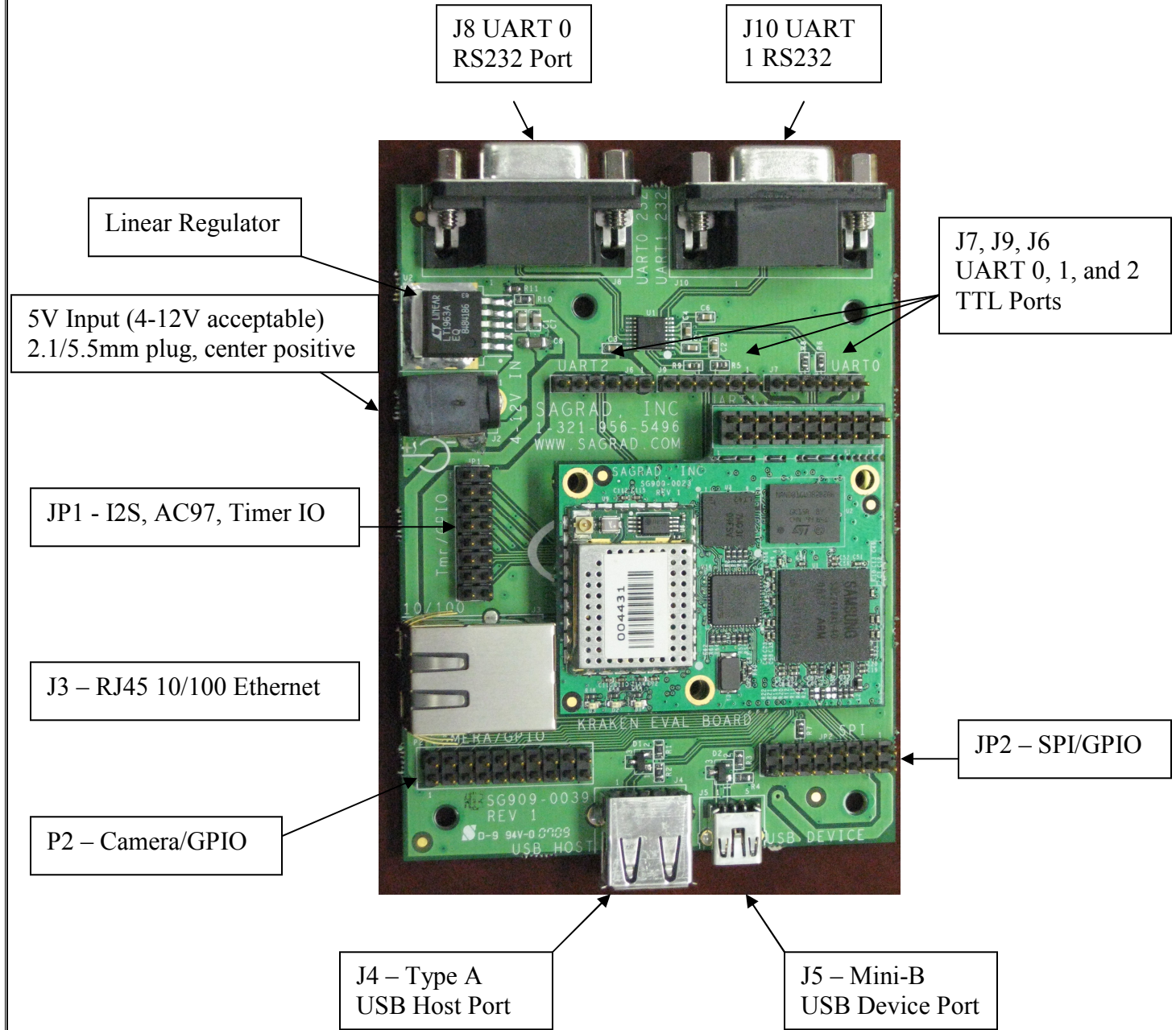
### Ordering Information

| Packaging | Order Number |
|-----------|--------------|
| Eval Kit  | SG923-0004   |





## Eval Board Components





## Connector Pinouts and Descriptions

### UART Connectors

| SIGNAL NAME  | PIN NUMBER | DESCRIPTION                  | NOTES                       |
|--|------------|------------------------------|-----------------------------|
| <b>UART 0 DB9 (J8)</b>                                   |            |                              |                             |
| RXD0_232   | 2          | UART0 Receive Data (input)   | RS232 Level                 |
| TXD0_232   | 3          | UART0 Transmit Data (output) | RS232 Level                 |
| GND  | 5          | Signal Ground                |                             |
| <b>UART 0 Header (J7) (Remove resistor R8 to use J7)</b> |            |                              |                             |
| 3.3V   | 1          | Power to RS232 driver        |                             |
| GND  | 2          | Signal/Power Ground          |                             |
| RXD0   | 3          | UART0 Receive Data (input)   | 3.3V CMOS level – Also GPIO |
| TXD0   | 4          | UART0 Transmit Data (output) | 3.3V CMOS level – Also GPIO |
| -  | 5          | Handshaking loopback to 6    |                             |
| -  | 6          | Handshaking loopback to 5    |                             |
| <b>UART 1 DB9 (J10)</b>                                  |            |                              |                             |
| RXD1_232   | 2          | UART1 Receive Data (input)   | RS232 Level                 |
| TXD1_232   | 3          | UART1 Transmit Data (output) | RS232 Level                 |
| GND  | 5          | Signal Ground                |                             |
| <b>UART 1 Header (J9) (Remove resistor R9 to use J9)</b> |            |                              |                             |
| 3.3V   | 1          | Power to RS232 driver        |                             |
| GND  | 2          | Signal/Power Ground          |                             |
| RXD1   | 3          | UART1 Receive Data (input)   | 3.3V CMOS level – Also GPIO |
| TXD1   | 4          | UART1 Transmit Data (output) | 3.3V CMOS level – Also GPIO |
| -  | 5          | Handshaking loopback to 6    |                             |
| -  | 6          | Handshaking loopback to 5    |                             |
| <b>UART 2 Header (J6)</b>                                |            |                              |                             |
| 3.3V   | 1          | Power to RS232 driver        |                             |
| GND  | 2          | Signal/Power Ground          |                             |
| RXD2   | 3          | UART2 Receive Data (input)   | 3.3V CMOS level – Also GPIO |
| TXD2   | 4          | UART2 Transmit Data (output) | 3.3V CMOS level – Also GPIO |
| -  | 5          | Handshaking loopback to 6    |                             |
| -  | 6          | Handshaking loopback to 5    |                             |



## Connector Pinouts and Descriptions

### P2 Camera/GPIO Connector

| SIGNAL NAME | PIN NUMBER | DESCRIPTION                  | NOTES      |
|-------------|------------|------------------------------|------------|
| 3.3V        | 1          | 3.3V Power                   |            |
| CAMCLKOUT   | 2          | Camera master clock output   | GPIO GPJ11 |
| GND         | 3          | Ground                       |            |
| CAMRESET    | 4          | Camera reset output          | GPIO GPJ12 |
| CAMPCLK     | 5          | Camera pixel clock input     | GPIO GPJ8  |
| CAMD0       | 6          | Camera data bit 0            | GPIO GPJ0  |
| GND         | 7          | Ground                       |            |
| CAMD1       | 8          | Camera data bit 1            | GPIO GPJ1  |
| CAMVSYNC    | 9          | Camera vertical sync input   | GPIO GPJ9  |
| CAMD2       | 10         | Camera data bit 2            | GPIO GPJ2  |
| GND         | 11         | Ground                       |            |
| CAMD3       | 12         | Camera data bit 3            | GPIO GPJ3  |
| CAMHREF     | 13         | Camera horizontal sync input | GPIO GPJ10 |
| CAMD4       | 14         | Camera data bit 4            | GPIO GPJ4  |
| GND         | 15         | Ground                       |            |
| CAMD5       | 16         | Camera data bit 5            | GPIO GPJ5  |
| GND         | 17         | Ground                       |            |
| CAMD6       | 18         | Camera data bit 6            | GPIO GPJ6  |
| GND         | 19         | Ground                       |            |
| CAMD7       | 20         | Camera data bit 7            | GPIO GPJ7  |

### JP2 SPI/GPIO Connector

| SIGNAL NAME | PIN NUMBER | DESCRIPTION                   | NOTES                       |
|-------------|------------|-------------------------------|-----------------------------|
| -           | 1          | -                             |                             |
| 3.3V        | 2          | 3.3V Power                    |                             |
| SPICLK1     | 3          | SPI Clock                     | GPIO GPG7                   |
| SPIMOSI1    | 4          | SPI Master Output Slave Input | GPIO GPG6                   |
| SPIMISO1    | 5          | SPI Master Input Slave Output | GPIO GPG5                   |
| SS1         | 6          | SPI Slave Select              | GPIO GPG3                   |
| GND         | 7          | Ground                        |                             |
| -           | 8          | -                             |                             |
| GND         | 9          | Ground                        |                             |
| -           | 10         | -                             |                             |
| TCLK0       | 11         | SPI Interrupt                 | TCLK0 timer clk – GPIO GPB4 |
| -           | 12         | -                             |                             |
| GND         | 13         | Ground                        |                             |
| -           | 14         | -                             |                             |
| GND         | 15         | Ground                        |                             |
| GND         | 16         | Ground                        |                             |



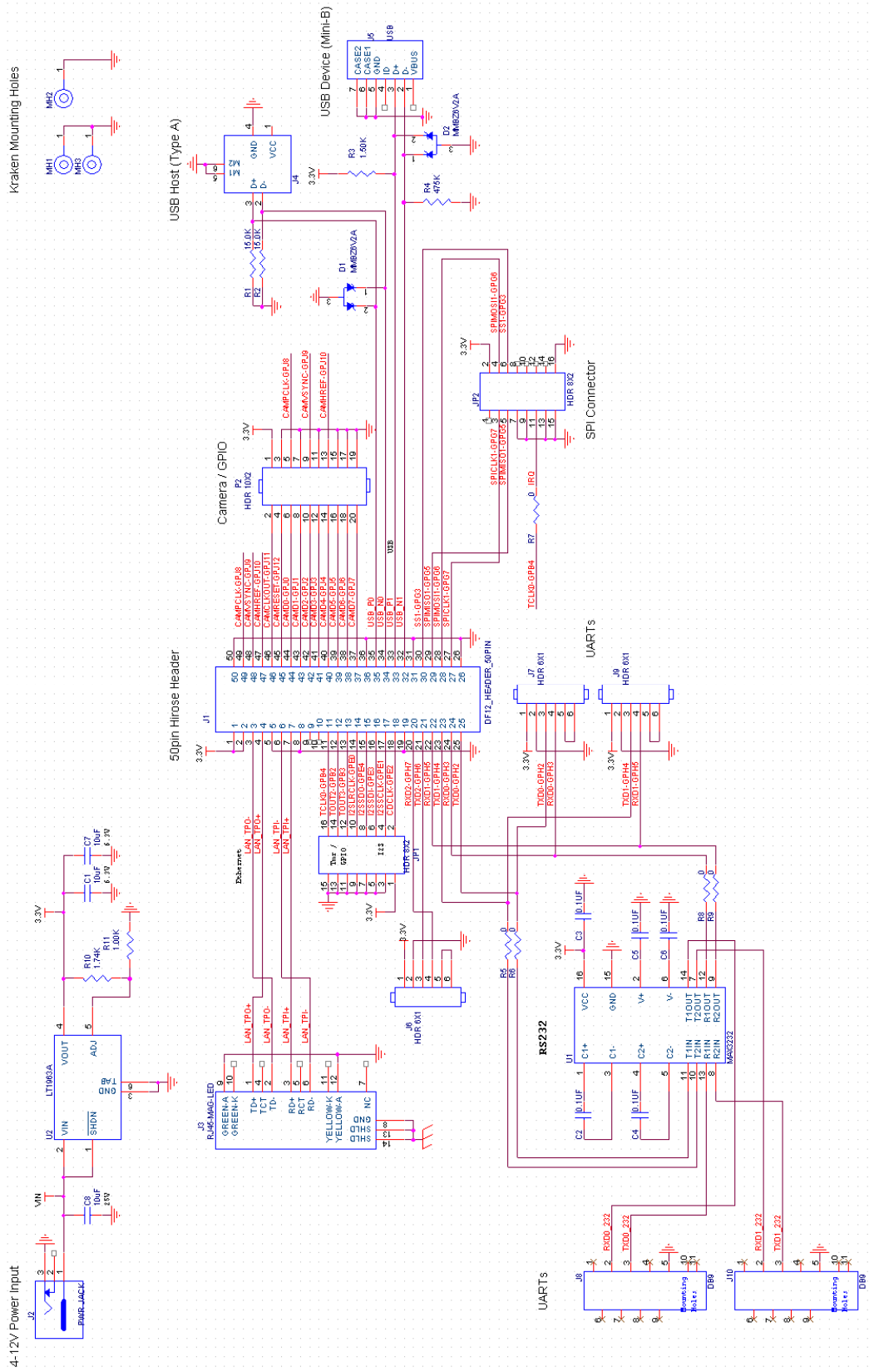
## Connector Pinouts and Descriptions

### JP1 I2S, AC97, Timer, GPIO

| SIGNAL NAME | PIN NUMBER | DESCRIPTION                        | NOTES     |
|-------------|------------|------------------------------------|-----------|
| 3.3V        | 1          | 3.3V Power                         |           |
| CDCLK       | 2          | I2S master clock output, AC97 RST  | GPIO GPE2 |
| GND         | 3          | Ground                             |           |
| I2S_SCLK    | 4          | I2S/AC97 serial clock input/output | GPIO GPE1 |
| GND         | 5          | Ground                             |           |
| I2S_SDI     | 6          | I2S/AC97 serial data input         | GPIO GPE3 |
| GND         | 7          | Ground                             |           |
| I2S_SDO     | 8          | I2S/AC97 serial data output        | GPIO GPE4 |
| GND         | 9          | Ground                             |           |
| I2S_LRCK    | 10         | I2S frame output, AC97 SYNC,       | GPIO GPE0 |
| GND         | 11         | Ground                             |           |
| TOUT3       | 12         | Timer 3 output                     | GPIO GPB3 |
| GND         | 13         | Ground                             |           |
| TOUT2       | 14         | Timer 2 output                     | GPIO GPB2 |
| GND         | 15         | Ground                             |           |
| TCLK0       | 16         | Timer 0 clock input                | GPIO GPB4 |



# Schematic



Kraken Mounting Holes