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## **MAXIOTKIT Evaluation Kit      Evaluates: MAX32630, MAX11301, MAX30003, MAX30101, MAX30205, MAX30205EVSYS, MAX32630FTHR, MAX11301WING, MAX30003WING, MAX30101WING**

### **General Description**

Maxim Integrated brings the convenience of remote health monitoring to your fingertips. The modular architecture allows for a variety of systems to be assembled quickly and easily within a couple of minutes. The system flexibility stems from the FeatherWing® form factor that provides a plug-and-play interface by adding or removing desired sensors, enabling or disabling a particular sensor, and the frequency data transmission to an online dashboard. The system is built on a Maxim Integrated low-power microcontroller to ensure minimum power consumption for designs on the go.

### **Features**

- MAX32630FTHR Feather Board
  - MAX32630 Low-Power Microcontroller
  - MicroSD Card Connector
  - Mbed™ HDK Debug Interface
  - Bluetooth Compatible
- MAX11301WING Feather Wing
  - 20 Configurable Mixed-Signal Ports
  - Analog Switch Between Adjacent PIXI® Ports
- MAX30003WING Feather Wing
  - Clinical-Grade ECG AFE with High-Resolution Data Converter
  - Built-In Heart Rate Detection
- MAX30101WING Feather Wing
  - High-Sensitivity Pulse Oximeter and Heart-Rate Sensor
- MAX30205EVSYS
  - Human Body Temperature Sensor

[Ordering Information](#) appears at end of data sheet.

*FeatherWing is a registered trademark of Fried, Limor.*

*Mbed is a trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*

*PIXI is a trademark of Maxim Integrated Products, Inc.*



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### Detailed Description of Hardware (or Software)

Maxim Integrated's MAXIOTKIT is a rapid prototyping platform that enables quick and easy integration of the MAX11301WING, MAX30003WING, MAX30101WING, MAX30205EVSYS, and MAX32630FTHR boards. All the boards, except the MAX30205EVSYS, included in this kit are small 0.9in x 2.0in dual-row header form factor that is compatible with breadboards and most feather boards from Maxim and Adafruit® and expansion boards, also called wing boards. The FeatherWing form factor simplifies integration to enable a plug-and-play functionality of the individual boards.

The MAX32630FTHR board is a rapid development platform designed to help engineers quickly implement battery optimized solutions with the MAX32630 Arm® Cortex®-M4 processor with FPU. The board includes the MAX14690 wearable PMIC to provide optimal power conversion and battery management. It also allows external storage using its microSD card slot. Wireless connectivity provided by the on-board bluetooth chip eases IoT related applications.

The MAX11301WING is an expansion board designed to prototype mixed signal applications with its 20 configurable port using the MAX11301. All the 20 ports are simultaneously accessible on the board. It adds to the existing ADC connections on the MAX32630FTHR board.

The MAX30003WING is an expansion board designed to help rapid prototyping of ECG applications for wearables using the MAX30003 biopotential analog front end using its 3.5mm ECG leads. Two grove connectors and a 6-pin Pmod™ connector are included for additional connectivity to popular development boards offered by Seeed Studio® and Digilent®.

The MAX30101WING board is designed to quickly develop and test application firmware for the MAX30101 pulse oximetry and heart-rate sensor. The MAX30101WING contains the MAX14750A power management IC (PMIC) that supplies a +1.8V power rail to the MAX30101 along with a programmable +2.5V to +5V rail to drive the MAX30101 internal LEDs. The board is compatible with +1.8V and +3.3V IO logic. The ZIF flat flexible cable connector allows integration of the MAX30205EVSYS.

The MAX30205EVSYS provides a convenient way to evaluate the MAX30205 silicon-based human body temperature sensor. The sensor uses a high-resolution sigma-delta analog-to-digital converter to accurately measure temperature and convert it to digital form.

Additionally, the kit includes a MAX32625PICO board that acts as a programmer for the MAX32630FTHR board using the 10-pin ribbon cable and the MAXDAP connector.

Refer to the individual board's page for the data sheet and other information (e.g., BOM, schematics, etc.) by using the following links.

- [MAX32630FTHR](#)
- [MAX11301WING](#)
- [MAX30003WING](#)
- [MAX30101WING](#)
- [MAX30205EVSYS](#)

### Quick Start

A quick start guide for this kit can be found [here](#).

*Adafruit is a registered trademark of Limor Fried DBA Adafruit Industries.*

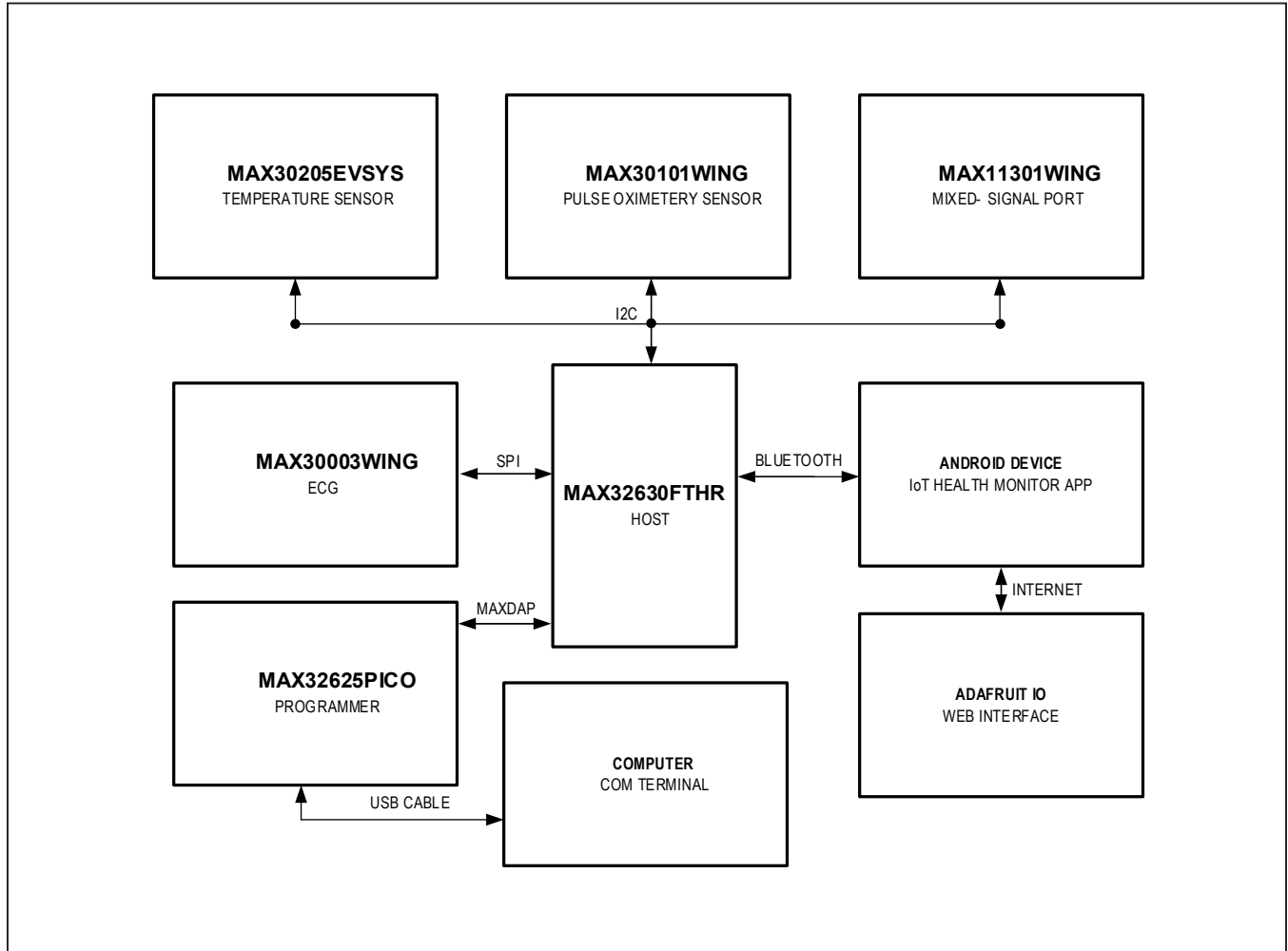
*Arm and Cortex are registered trademarks of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*

*Pmod is a trademark of Digilent Inc.*

*Seeed Studio is a registered trademark of Seeed Technology Co., Ltd.*

*Digilent is a registered trademark and Pmod is a trademark of Digilent Inc.*

Block Diagram



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MAX30101, MAX30205, MAX30205EVSYS,  
MAX32630FTHR, MAX11301WING,  
MAX30003WING, MAX30101WING

### MAXIOTKIT EV Kit Bill of Materials

| PART   | QTY | DESCRIPTION   | MANUFACTURER            | PART NUMBER       |
|--|-----|---|-------------------------|-------------------|
| MAX32630FTHR#                                    | 1   | Assembled and Tested<br>MAX32630FTHR (PCB Only)                   | Maxim Integrated        | MAX32630FTHR#     |
| MAX32625PICO#                                    | 1   | Assembled and Tested<br>MAX32625PICO (PCB Only)                   | Maxim Integrated        | MAX32625PICO#     |
| MAX30101WING#                                    | 1   | Assembled and Tested<br>MAX30101WING (PCB Only)                   | Maxim Integrated        | MAX30101WING#     |
| MAX11301WING#                                    | 1   | Assembled and Tested<br>MAX11301WING (PCB Only)                   | Maxim Integrated        | MAX11301WING#     |
| MAX30003WING#                                    | 1   | Assembled and Tested<br>MAX30003WING (PCB Only)                   | Maxim Integrated        | MAX30003WING#     |
| MAX30205EVKIT#                                   | 1   | Assembled and Tested MAX30205<br>(PCB Only)                       | Maxim Integrated        | MAX30205EVKIT#    |
| FeatherWing Tripler                              | 1   | Break out board for the feather to<br>make it easier to interface | Adafruit Industries LLC | 3417              |
| 16 Position Receptacle<br>Connector Through Hole | 4   | CONN+,RCPT,.100",16POS,SNGL,<br>GOLD,TH                           | Samtec Inc.             | SSQ-116-23-G-S-ND |
| 12 Position Receptacle<br>Connector Through Hole | 4   | CONN+,RCPT,.100",12POS,SNGL,<br>GOLD,TH                           | Samtec Inc.             | SSQ-112-23-G-S    |
| MIKROE-2457                                      | 1   | ECG Click - Cable Assembly  | MikroElektronika        | MIKROE-2457       |
| Mikroe-2456                                      | 0.2 | ECG pads bag of 30 (each kit uses<br>only 6 pads)                 | MikroElektronika        | MIKROE-2456       |
| Micro USB Cable B                                | 2   | USB 2.0,A MALE-MICRO B<br>MALE,1m                                 | QUALTEK                 | 3025010-03        |
| Female/Male Jumper<br>wires x20                  | 1   | Jumper wires for connecting things<br>to the Pixi                 | Adafruit Industries LLC | 1954              |
| 10-Pin Flex cable                                | 1   | CABLE+,FFC,.5MM,TYPE<br>1,10P,200MM                               | Würth Electronics       | 687610200002      |
| SWD cable  | 1   | CABLE+,IDC,2X5<br>SOCKET,1.27X150MM                               | Adafruit Industries LLC | 1675              |

### Ordering Information

| PART       | TYPE           |
|------------|----------------|
| MAXIOTKIT# | Evaluation Kit |

#Denotes RoHS compliance.

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## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION     | PAGES CHANGED |
|-----------------|---------------|-----------------|---------------|
| 0               | 12/20         | Initial release | —             |

For pricing, delivery, and ordering information, please visit Maxim Integrated's online storefront at <https://www.maximintegrated.com/en/storefront/storefront.html>.

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