Click here for production status of specific part numbers.

MAX30003WING2# Evaluation Kit

Evaluates: MAX32663A

General Description

The MAX30003WING2 evaluation kit demonstrates the use of the MAX32663A MCU as an ECG sensor hub. The MAX32663A runs advanced ECG algorithms provided by B-Secur, which transforms raw ECG data collected from the MAX30003 analog front end (AFE) into simple, high-level information which is then communicated to the MAX32620FTHR host processor through the I2C interface. The EV kit is accompanied by PC software, which allows easy evaluation of the ECG algorithms.

The kit includes the following items:

- MAX30003WING2# Circuit Board
- MAX326325PICO JTAG Debugger/Programmer
- MAX32620FTHR Feather Board
- Micro USB Cables
- SWD Cable

Benefits and Features

- Integrates B-Secur ECG Firmware
- Evaluates MAX32663A Sensor Hub and the MAX30003 ECG AFE
- Measures Heart Rate, Heart Rate Variability, and Stress
- User Identification through ECG Analysis
- PCB ECG Electrodes
- Connector for External ECG Electrodes
- Adafruit® Feather-Compatible Host Processor Socket with MAX32620FTHR Board Installed

***Ordering Information* appears at end of data sheet.**

Detailed Description

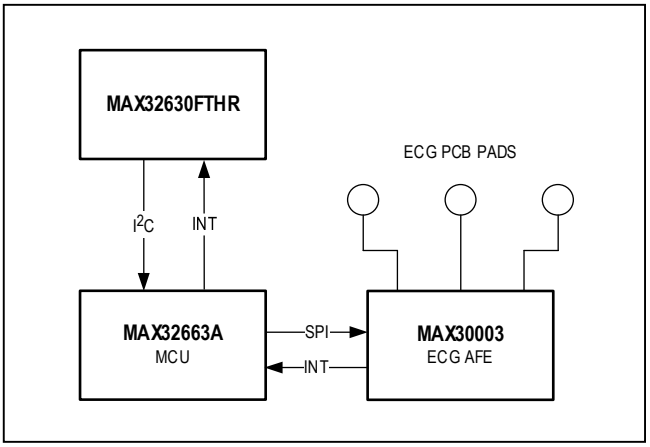
The EV kit demonstrates several B-Secur ECG algorithms that execute on the MAX32663A sensor hub. The MAX30003 provides the AFE to integrated ECG PCB pads and optional external electrodes (not included). The EV kit supports the following B-Secur algorithms:

- Heart Rate
- Heart Rate Variability
- Stress
- Energy Expenditure
- User Identification

The MAX32620FTHR serves as the host MCU, which obtains high-level ECG information from the sensor hub through an I2C interface and relays the information to a Windows® PC application through USB. This host MCU could serve as an embedded platform for user application development.

The kit is accompanied by Windows PC software and host MCU source code, which can be downloaded from the MAX30003WING2 EV kit product page.

Simplified Block Diagram



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Windows is a registered trademark of Microsoft Corp.

319-100486; Rev 2; 11/20

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MAX30003WING2 EV Kit Bill of Materials

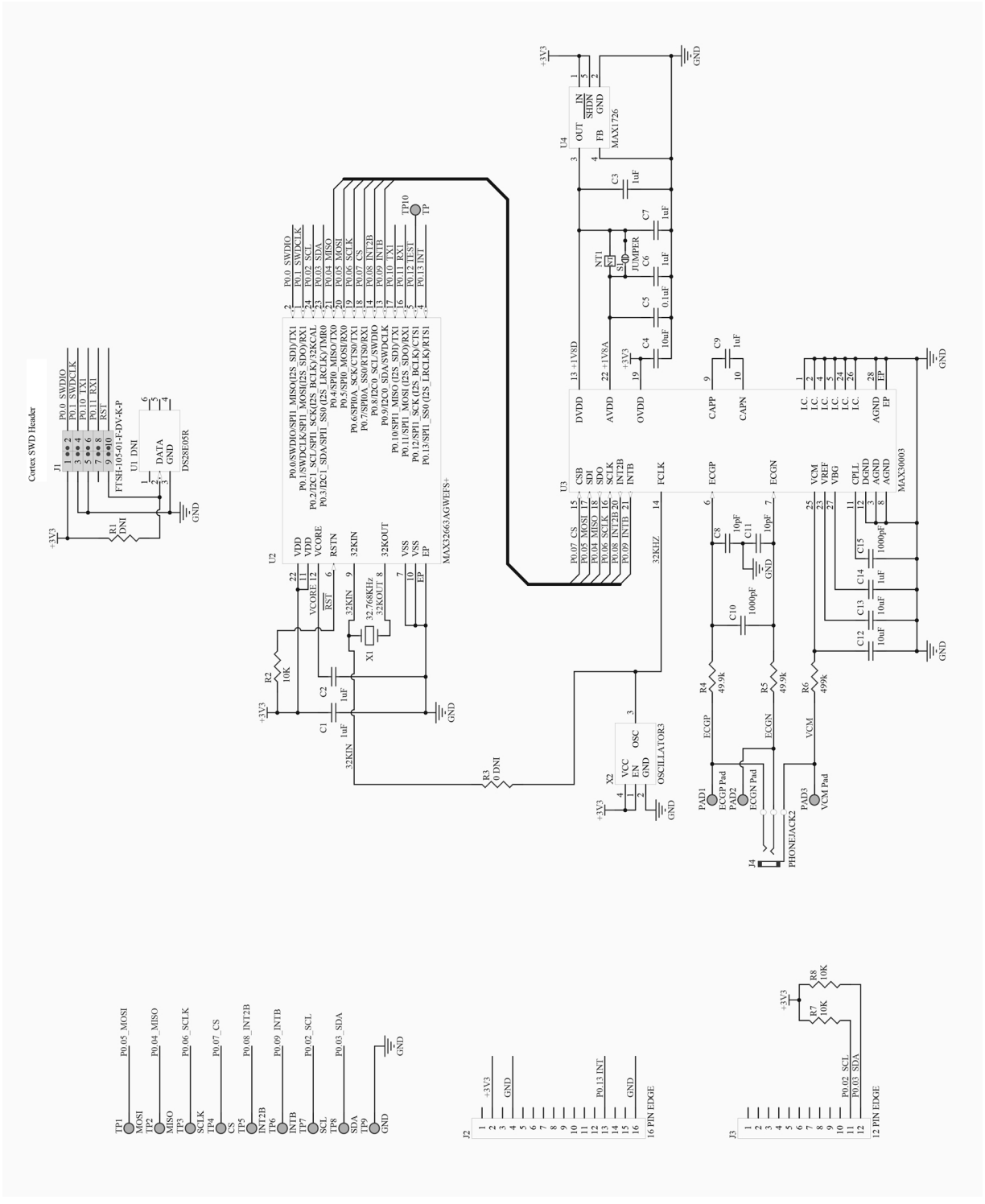
REFDES	MANUFACTURER	PART NUMBER	DESCRIPTION
C1, C2, C3, C6, C7, C9, C14	Samsung Electro-Mechanics	CL10B105KP8NNNC	Cap 1µF ±10% 10V X7R 0603
C4, C12, C13	Samsung Electro-Mechanics	CL10A106MQ8NNNC	CAP CER 10UF 6.3V X5R 0603
C5	Samsung Electro-Mechanics	CL10B104KO8NNNC	CAP CER 0.1UF 16V X7R 0603
C8, C11	KEMET	C0603C100D5GACTU	CAP CER 10PF 50V C0G/NP0 0603, CAP CER 10PF 50V NP0 0201
C10	KEMET	C0402C102K5RACTU	CAP CER 1000PF 50V X7R 0402
C15	Samsung Electro-Mechanics	CL10C102JB8NNNC	CAP CER 1000PF 50V C0G/NP0 0603
J1	Samtec Inc	FTSH-105-01-F-DV-K-P	CONN HEADER 10POS DUAL .05” SMD
J2	Sullins Connector Solutions	PPPC161LFBN-RC	CONN HEADER FEMALE 16POS .1” GOLD
J3	Sullins Connector Solutions	PPPC121LFBN-RC	CONN HEADER FEMALE 12POS .1” GOLD
J4	CUI Inc.	SJ-3523-SMT-TR	CONN JACK STEREO 3.5MM SMD R/A
R2, R7, R8	Stackpole Electronics Inc	RMCF0603FT10K0	RES 10K OHM 1% 1/10W 0603
R4, R5	Panasonic Electronic Components	ERJ-3EKF4992V	RES SMD 49.9K OHM 1% 1/10W 0603
R6	Yageo	RT0603DRD07499KL	RES SMD 499K OHM 0.5% 1/10W 0603
U1	Maxim Integrated	DS28EL15Q+U	1-WIRE SHA-256 SECURE AUTHENTICATOR WITH 512BIT EEPROM
U2	Maxim Integrated	MAX32663AGWEFS+	B-Secur ECG Sensor Hub
U3	Maxim Integrated	MAX30003CTI+	Ultra-Low Power, Single-Channel Integrated Biopotential (ECG, R-to-R Detection) AFE
U4	Maxim Integrated	MAX1726EUK18+	Low-Dropout Linear Regulators 12V
X1	ECS Inc.	ECS-.327-6-12-TR	CRYSTAL 32.7680KHZ 6PF SMD
X2	Diodes Incorporated	KX3211A0032.768000	XTAL OSC XO 32.7680KHZ CMOS SMD

Ordering Information

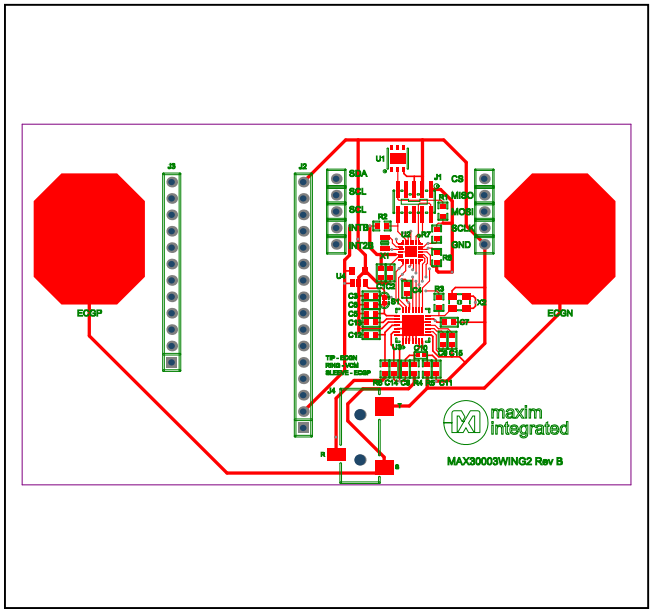
PART	TYPE
MAX30003WING2#	Evaluation Kit

#Denotes RoHS compliance.

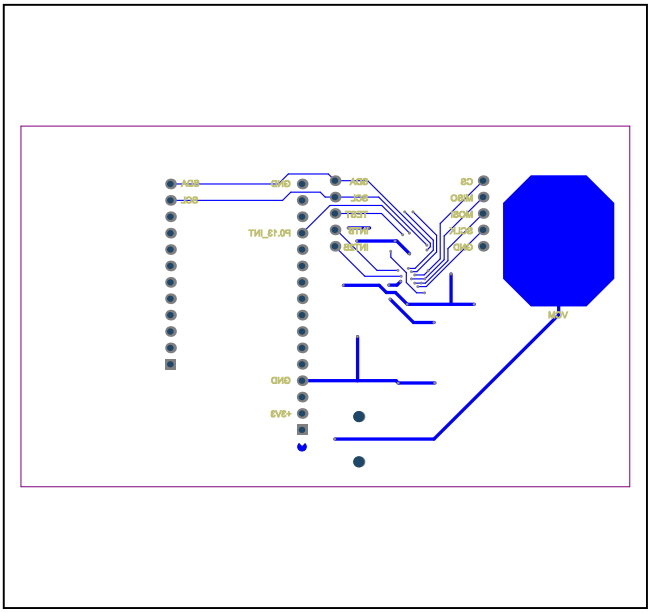
MAX30003WING2 EV Kit Schematic



MAX30003WING2 EV Kit PCB Layout Diagrams



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Bottom

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	12/19	Initial release	—
1	10/20	Updated *General Description*, *Benefits and Features*, *Detailed Description*, *Simplified Block Diagram*, *Bill of Materials*, *Schematic*	1, 2, 3
2	11/20	Updated MAX32663 to MAX32663A	All

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