MAXREFDES104 System Operational Mode Matrix

Version	Date	Operational Mode Matrix		
2.0.001 2.0.0	06/12/2023 01/14/2022	**Mode**	**BLE/File Log (1)**	**Flash Log**
		Raw	N	N
		Algo Hub	N	N
		Sensor Hub	Y (2)	N
1.2.001 1.2.0	06/08/2023 09/01/2021	**Mode**	**BLE/File Log (1)**	**Flash Log**
		Raw	Y	Y (2)
		Algo Hub	Y	Y (2)
		Sensor Hub	Y (2)	N
1.1.0	05/26/2021	**Mode**	**BLE/File Log (1)**	**Flash Log**
		Raw	Y	Y (2)
		Algo Hub	Y	Y (2)
		Sensor Hub	Y (2)	N
1.0.0	02/26/2021	N/A	N/A	N/A

Notes: 1 = Limited by BLE data rate; 2 = Limited by flash memory writes. Only use 3 channel PPG with accelerometer or ECG only.

MAX32674C and .msbl Compatibility Matrix

MAX32674C variant	.msbl versions	Design
MAX32674CGWG+	MAX32670_WHRM_AEC_SCD_WSPO2_C_50.y.z.msbl	Customer Board
MAX32674CGWGZ+	MAX32670_WHRM_AEC_SCD_WSPO2_devel_50.y.z.msbl	MAXREFDES104#

MAXREFDES104 System Release Notes

Version	Date	History	Known Issues
2.0.001	06/12/2023	▪ Same as 2.0.0 release except that it includes the C-keyed .msbl and I2C logs.	Same known issues as 2.0.0
2.0.0	01/14/2022	▪ BPT algorithm integrated to ME15 Sensor Hub where it can concurrently run with WHRM suite.	▪ No low power mode for ME15 Sensor Hub ▪ No support for PC GUI ▪ AlgoHub mode only supports WHRM algorithm for this release. BPT algo is supported only in SensorHub mode ▪ Not recommended to use flash logging with AEC or AGC. ▪ USB flash log mass storage device only will mount once. Power cycle the device to see the USB flash log drive again. ▪ Do not turn off the device while plugged into USB C. The device does not fully power cycle. Unplug the USBC cable before power cycling. ▪ Flash log is not supported in Sensor Hub mode ▪ Flash log supports either

			ECG (with accelerometer) or 3 PPG measurements (with accelerometer) due to data rate limitations. ▪ Flash logging in Algo Hub mode with AEC or AGC enable may exhibit incorrect LED current level settings ▪ Sensor Hub does not support ECG. Use Algo Hub mode instead of Sensor Hub mode. ▪ Sensor Hub manual control operation requires minimum LED currents of 1mA or greater. ▪ Sensor Hub mode does not support flash logging. Use Algo Hub mode instead of Sensor Hub mode.
1.2.001	06/08/2023	▪ Same as 1.2.0 release except that it includes the C-keyed .msbl and I2C logs.	Same known issues as 1.2.0
1.2.0	09/01/2021	1.2.0	▪ Not recommended to use flash logging with AEC or AGC. ▪ USB flash log mass storage device only will mount once. Power cycle the device to see the USB flash log drive again. ▪ Do not turn off the device while plugged into USB C. The device does not fully power cycle. Unplug the USBC cable before power cycling. ▪ Flash log is not supported in Sensor Hub mode ▪ Flash log supports either ECG (with accelerometer) or 3 PPG measurements (with accelerometer) due to data rate limitations. ▪ ▪ ▪ Flash logging in Algo Hub mode with AEC or AGC enable may exhibit incorrect LED current level settings ▪ Sensor Hub does not support ECG. Use Algo Hub mode instead of Sensor Hub mode. ▪ Sensor Hub manual control operation requires minimum LED currents of 1mA or greater. ▪ Sensor Hub mode does not support flash logging. Use Algo Hub mode instead of Sensor Hub mode. ▪ Register map access is not available in Sensor Hub mode. ▪ ECG AC lead off and DC lead off status information does not report correctly. A workaround is to enable register map functionality and clear the shutdown bit (SHDN bit = 0) and manually poll the corresponding status register. Afterwards, set the shutdown bit (SHDN bit = 1) before configuring other options.

			▪ Measurement 1 to 9 plots do not scale correctly if the data is negative (when using DAC offset). A workaround is to use the combination plot to view the PPG signal. ▪ Raw mode, ECG with accelerometer enabled (without any PPG measurements enabled), the accelerometer sample rate is ~5sps. ▪ The application may not stop data streaming where the button is stuck at "Stopping…", when this occurs disconnect from the device and reconnect.
1.1.0	05/26/2021		▪ USB flash log mass storage device only will mount once. Power cycle the device to see the USB flash log drive again. ▪ Do not turn off the device while plugged into USB C. The device does not fully power cycle. Unplug the USBC cable before power cycling. ▪ Flash log is not supported in Sensor Hub mode ▪ Flash log supports either ECG (with accelerometer) or 3 PPG measurements (with accelerometer) due to data rate limitations. ▪ Flash logging in Algo Hub mode with AEC or AGC enable may exhibit incorrect LED current level settings ▪ Sensor Hub does not support ECG. Use Algo Hub mode instead of Sensor Hub mode. ▪ Sensor Hub manual control operation requires minimum LED currents of 1mA or greater. ▪ Sensor Hub mode does not support flash logging. Use Algo Hub mode instead of Sensor Hub mode. ▪ Register map access is not available in Sensor Hub mode. ▪ ECG AC lead off and DC lead off status information does not report correctly. A workaround is to enable register map functionality and clear the shutdown bit (SHDN bit = 0) and manually poll the corresponding status register. Afterwards, set the shutdown bit (SHDN bit = 1) before configuring other options. ▪ Measurement 1 to 9 plots do not scale correctly if the data is negative (when using DAC offset). A workaround is to use the combination plot to view the PPG signal. ▪ Raw mode, ECG with accelerometer enabled (without any PPG measurements enabled), the accelerometer sample rate is ~5sps.

			▪ The application may not stop data streaming where the button is stuck at “Stopping…”, when this occurs disconnect from the device and reconnect
1.0.0	02/26/2021	▪ Initial Release	▪ Do not turn off the device while plugged into USB C. The device does not fully power cycle. Unplug the USB-C cable before power cycling. ▪ ECG AC lead off and DC lead off status information does not report correctly. A workaround is to enable register map functionality and clear the shutdown bit (SHDN bit = 0) and manually poll the corresponding status register. Afterwards, set the shutdown bit (SHDN bit = 1) before configuring other options. ▪ In raw mode, accelerometer data may be incorrect. This is a known issue for 1 or 2 PPG measurements (Meas) enabled, and ECG only. ▪ The accelerometer’s full-scale range is fixed to +/- 8g, changing the dropdown option has no effect. ▪ To disable PPG, set all measurement enables to disabled in the PPG Meas Settings tab, do not use the PPG1/2 Power Down check box. ▪ Measurement 1 to 9 plots do not scale correctly if the data is negative (when using DAC offset). A workaround is to use the combination plot to view the PPG signal. ▪ Do not use Algo Hub with low or 0mA LED currents. If the SpO2 PD counts are low or negative, the stream will stop. Power cycle the device if this occurs. ▪ The temperature plot axis may not scale correctly. A work around is to enable file logging and to review the data in the CSV file. ▪ The ECG plot at 128sps is attenuated, where the R peak of the ECG waveform is not visible. A work around is to enable file logging and to review the data in the CSV file. ▪ The application may not stop data streaming where the button is stuck at “Stopping…”, when this occurs disconnect from the device and reconnect.

MAXREFDES104 Host Firmware Release Notes

Version	Date	History	Known Issues
2.0.0	01/14/2022	▪ BPT support is added	▪ See System release notes for V2.0.0

1.2.0	09/01/2021	▪ Maxim Wellness app support is added ▪ SpO2 averaging feature is added ▪ An issue that causes setting wrong averaging value to MAX86176 sensor is fixed ▪ An issue that prevents updating broken Algohub/Sensorhub image is fixed.	▪ See System release notes for V1.2.0
1.1.0	05/26/2021	▪ Flash logging feature is added ▪ Sensor Hub support is added ▪ Accelerometer data issues in raw mode operation is fixed ▪ PPG1 and PPG2 power down issue is fixed ▪ Controlling status LED by using short button press is removed	▪ See System release notes for V1.1.0
1.0.0	02/26/2021	▪ Initial Release	▪ See System Release Notes for V1.0.0

MAXREFDES104 GUI Release Notes

Version	Date	History	Known Issues
2.0.0		▪ No PC GUI support	▪ See System release notes for V2.0.0
1.2.0	09/01/2021	▪ SpO2 averaging is added ▪ Text update of HRM sample rate and averaging to HRM averaging to reflect the actual register change in the device	▪ See System release notes for V1.2.0
1.1.0	05/26/2021	▪ Status LED enable/disable control interface is added ▪ Flash logging enable/disable control interface is added ▪ Raw BLE command interface is added ▪ Sensorhub selection option is added to PPG mode ▪ MAX32670/4 version is shown in the firmware version section ▪ Improvement on ECG plot update rate at 128sps ▪ Temperature plot scaling issue is fixed ▪ Installer force application close problem is fixed	▪ See System release notes for V1.1.0

		▪ Updated ECG filter R peak issue at128sps and 256sps ▪ System register settings is removed	
1.0.0	02/26/2021	▪ Initial release	▪ See System release notes for V1.0.0

MAXREFDES104 Sensor Hub Firmware Release Notes

Version	Date	History	Known Issues
2.0.0	01/14/2022	▪ BPT algo integration ▪ WHRM & BPT concurrent operation	▪ No low power ▪ AlgoHub mode only supports WHRM algorithm; BPT algo is supported only in SensorHub mode
1.2.0	09/01/2021	▪ No changes	▪ No changes
1.1.0	05/26/2021	▪ AEC functionality to the Algo Hub is added ▪ Sensor Hub mode is supported ▪ Algorithm library is updated	▪ No low power
1.0.0	02/26/2021	▪ Initial release	▪ No low power