Register, Data/Command Description					Bit Level Definition								
MAX32660 I2C Register	Data Register Name	Register Type	Return Data Type/Byte Count	Description	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Comments
0x00	SENS_ERR_STAT	R/O	uint8_t/1	Combined sensor error status byte	N/A	Aux_3 Err	Aux_2 Err	Aux_1 Err	Baro Err	Mag Err	Accel Err	Gyro Err	
0x01	CALIBRATION_STATUS	R/O	uint8_t/1	Calibration validity and calibration activity status	0:Invalid HI offsets 1:Valid HI offsets	0:Invalid FineMagCal 1:Valid FineMagCal	0:Invalid AccelCal 1:Valid AccelCal	0:Invalid EllipMagCal 1:Valid EllipMagCal	0:Invalid GyroCal 1:Valid Gyrocal	0:AccelCal Inactive 1:AccelCal Active	0:EllipMagCal Inactive 1:EllipMagCal Active	0:GyroCal Inactive 1:GyroCal Active	"HI" indicates dynamic hard iron offsets
0x02	ACCEL_CAL_POS	R/O	uint8_t/1	Current position of 24-pt accel/fine mag cal	Data	Data	Data	Data	Data	Data	Data	Data	
0x03	FUSION_STATUS	R/O	uint8_t/1	Gives status of fusion loop and Ellip mag cal convergence	0:Mag Cal Gaps High 1:Mag Cal Gaps Pass	0:Mag Cal Variance High 1:Mag Cal Variance Pass	0:Mag Cal Wobble High 1:Mag Cal Wobble Pass	0:Mag Cal Fit Err High 1:Mag Cal Fit Err Pass	N/A	N/A	N/A	0:Fusion stopped 1:Fusion running	
0x04	COMBO_DRDY_STAT	R/O	uint8_t/1	Combined DRDY status byte	Aux_3 Drdy	Aux_2 DRDY	Aux_1 DRDY	Quat DRDY	Baro DRDY	Mag DRDY	Accel DRDY	Gyro DRDY	
0x05	G_X_L	R/O	uint8_t/1	Gyro X-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x06	G_X_H	R/O	uint8_t/1	Gyro X-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x07	G_Y_L	R/O	uint8_t/1	Gyro Y-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x08	G_Y_H	R/O	uint8_t/1	Gyro Y-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x09	G_Z_L	R/O	uint8_t/1	Gyro Z-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x0A	G_Z_H	R/O	uint8_t/1	Gyro Z-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x0B	A_X_L	R/O	uint8_t/1	Accel X-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x0C	A_X_H	R/O	uint8_t/1	Accel X-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x0D	A_Y_L	R/O	uint8_t/1	Accel Y-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x0E	A_Y_H	R/O	uint8_t/1	Accel Y-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x0F	A_Z_L	R/O	uint8_t/1	Accel Z-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x10	A_Z_H	R/O	uint8_t/1	Accel Z-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x11	M_X_L	R/O	uint8_t/1	Mag X-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x12	M_X_H	R/O	uint8_t/1	Mag X-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x13	M_Y_L	R/O	uint8_t/1	Mag Y-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x14	M_Y_H	R/O	uint8_t/1	Mag Y-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x15	M_Z_L	R/O	uint8_t/1	Mag Z-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x16	M_Z_H	R/O	uint8_t/1	Mag Z-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x17	BARO_XL	R/O	uint8_t/1	Baro (int32_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x18	BARO_L	R/O	uint8_t/1	Baro (int32_t) middle byte	Data	Data	Data	Data	Data	Data	Data	Data	
0x19	BARO_H	R/O	uint8_t/1	Baro (int32_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x1A	Q0_BYTE0	R/O	uint8_t/1	Quaternion coeff 0 (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	Updated if "FUSION_START_STOP" bit 1 is set to 0 (Quaternion output)
0x1B	Q0_BYTE1	R/O	uint8_t/1	Quaternion coeff 0 (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x1C	Q0_BYTE2	R/O	uint8_t/1	Quaternion coeff 0 (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	
0x1D	Q0_BYTE3	R/O	uint8_t/1	Quaternion coeff 0 (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x1E	Q1_BYTE0	R/O	uint8_t/1	Quaternion coeff 1 (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	
0x1F	Q1_BYTE1	R/O	uint8_t/1	Quaternion coeff 1 (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x20	Q1_BYTE2	R/O	uint8_t/1	Quaternion coeff 1 (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	
0x21	Q1_BYTE3	R/O	uint8_t/1	Quaternion coeff 1 (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x22	Q2_BYTE0	R/O	uint8_t/1	Quaternion coeff 2 (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	
0x23	Q2_BYTE1	R/O	uint8_t/1	Quaternion coeff 2 (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x24	Q2_BYTE2	R/O	uint8_t/1	Quaternion coeff 2 (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	
0x25	Q2_BYTE3	R/O	uint8_t/1	Quaternion coeff 2 (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x26	Q3_BYTE0	R/O	uint8_t/1	Quaternion coeff 3 (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	
0x27	Q3_BYTE1	R/O	uint8_t/1	Quaternion coeff 3 (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x28	Q3_BYTE2	R/O	uint8_t/1	Quaternion coeff 3 (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	

0x29	Q3_BYTE3	R/O	uint8_t/1	Quaternion coeff 3 (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x2A	LIN_X_L	R/O	uint8_t/1	X-axis lin acc (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	Same calibration as the accelerometer
0x2B	LIN_X_H	R/O	uint8_t/1	X-axis lin acc (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x2C	LIN_Y_L	R/O	uint8_t/1	Y-axis lin acc (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x2D	LIN_Y_H	R/O	uint8_t/1	Y-axis lin acc (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x2E	LIN_Z_L	R/O	uint8_t/1	Z-axis lin acc (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x2F	LIN_Z_H	R/O	uint8_t/1	Z-axis lin acc (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x30	GRAV_X_L	R/O	uint8_t/1	X-axis gravity com (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x31	GRAV_X_H	R/O	uint8_t/1	X-axis gravity com (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x32	GRAV_Y_L	R/O	uint8_t/1	Y-axis gravity com (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x33	GRAV_Y_H	R/O	uint8_t/1	Y-axis gravity com (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x34	GRAV_Z_L	R/O	uint8_t/1	Z-axis gravity com (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x35	GRAV_Z_H	R/O	uint8_t/1	Z-axis gravity com (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x36	YAW_BYTE0	R/O	uint8_t/1	Heading angle (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	Updated if "FUSION_START_STOP" bit 1 is set to 1 (Euler angle output)
0x37	YAW_BYTE1	R/O	uint8_t/1	Heading angle (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x38	YAW_BYTE2	R/O	uint8_t/1	Heading angle (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	
0x39	YAW_BYTE3	R/O	uint8_t/1	Heading angle (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x3A	PITCH_BYTE0	R/O	uint8_t/1	Pitch angle (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	
0x3B	PITCH_BYTE1	R/O	uint8_t/1	Pitch angle (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x3C	PITCH_BYTE2	R/O	uint8_t/1	Pitch angle (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	
0x3D	PITCH_BYTE3	R/O	uint8_t/1	Pitch angle (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x3E	ROLL_BYTE0	R/O	uint8_t/1	Roll angle (SP float) byte 0	Data	Data	Data	Data	Data	Data	Data	Data	
0x3F	ROLL_BYTE1	R/O	uint8_t/1	Roll angle (SP float) byte 1	Data	Data	Data	Data	Data	Data	Data	Data	
0x40	ROLL_BYTE2	R/O	uint8_t/1	Roll angle (SP float) byte 2	Data	Data	Data	Data	Data	Data	Data	Data	
0x41	ROLL_BYTE3	R/O	uint8_t/1	Roll angle (SP float) byte 3	Data	Data	Data	Data	Data	Data	Data	Data	
0x42	AG_TEMP_L	R/O	uint8_t/1	Accel/Gyro Temp (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x43	AG_TEMP_H	R/O	uint8_t/1	Accel/Gyro Temp (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x44	M_TEMP_L	R/O	uint8_t/1	Mag Temp (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x45	M_TEMP_H	R/O	uint8_t/1	Mag Temp (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x46	B_TEMP_L	R/O	uint8_t/1	Baro Temp (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x47	B_TEMP_H	R/O	uint8_t/1	Baro Temp (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x48	AUX_1_X_L	R/O	uint8_t/1	Aux 1 Sensor X-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x49	AUX_1_X_H	R/O	uint8_t/1	Aux 1 Sensor X-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x4A	AUX_1_Y_L	R/O	uint8_t/1	Aux 1 Sensor Y-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x4B	AUX_1_Y_H	R/O	uint8_t/1	Aux 1 Sensor Y-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x4C	AUX_1_Z_L	R/O	uint8_t/1	Aux 1 Sensor Z-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x4D	AUX_1_Z_H	R/O	uint8_t/1	Aux 1 Sensor Z-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x4E	AUX_2_X_L	R/O	uint8_t/1	Aux 2 Sensor X-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x4F	AUX_2_X_H	R/O	uint8_t/1	Aux 2 Sensor X-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x50	AUX_2_Y_L	R/O	uint8_t/1	Aux 2 Sensor Y-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x51	AUX_2_Y_H	R/O	uint8_t/1	Aux 2 Sensor Y-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x52	AUX_2_Z_L	R/O	uint8_t/1	Aux 2 Sensor Z-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x53	AUX_2_Z_H	R/O	uint8_t/1	Aux 2 Sensor Z-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x54	AUX_3_X_L	R/O	uint8_t/1	Aux 3 Sensor X-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x55	AUX_3_X_H	R/O	uint8_t/1	Aux 3 Sensor X-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x56	AUX_3_Y_L	R/O	uint8_t/1	Aux 3 Sensor Y-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x57	AUX_3_Y_H	R/O	uint8_t/1	Aux 3 Sensor Y-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x58	AUX_3_Z_L	R/O	uint8_t/1	Aux 3 Sensor Z-axis (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x59	AUX_3_Z_H	R/O	uint8_t/1	Aux 3 Sensor Z-axis (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x5A	MX_L	R/O	uint8_t/1	In-Plane X-axis field (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x5B	MX_H	R/O	uint8_t/1	In-Plane X-axis field (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	Same scaling as the magnetometer. For LIS2MDL, 1LSB = 0.15uT. Resolved in-plane Mx and My; used for tilt compensation diagnostics
0x5C	MY_L	R/O	uint8_t/1	In-Plane Y-axis field (int16_t) LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x5D	MY_H	R/O	uint8_t/1	In-Plane Y-axis field (int16_t) MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x5E	DHI_RSQ_L	R/O	uint8_t/1	DHI R-square LSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x5F	DHI_RSQ_H	R/O	uint8_t/1	DHI R-square MSB	Data	Data	Data	Data	Data	Data	Data	Data	
0x60	FUSION_START_STOP	W/O	uint8_t/1	Starts/stops the main fusion loop	1:Upload FineMagCal 0:No Action	1:Upload AccelCal 0:No Action	1:Upload EllipMagCal 0:No Action	1:Upload GyroCal 0:No Action	1:Upload Config 0:No Action	1:Unscaled Snsr Data 0:Scaled Snsr Data	1:Euler 0:Quat	1:Start 0:Stop	Bit 1 selects Quat/Euler output. Stopping fusion puts the coprocessor into configuration mode
0x61	CALIBRATION_REQUEST	W/O	uint8_t/1	Manages embedded calibration activity	N/A	0:3D HI Corrector 1:2D HI Corrector	0:No Action 1:Reset Dynamic HI	0:Disable HI Corrections 1:Enable HI Corrections	0:No Action 1:Start Next Accel Cal	0:AccelCal Cancel 1:AccelCal Start	0:EllipMag Cancel 1:EllipMag Start	0:Gyro Cancel 1:Gyro Start	Assering a bit starts the corresponding calibration, de-asserting cancels. Asserting bit 3 triggers data collection for the current orientation in accel/fine mag cal. Asserting bit 5 clears current dynamic HI corrections and enables new in-situ data collection. All calibrations are done with fusion running
0x62	COPRO_CFG_DATA0	R/W	struct/30	First block of config structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x63	COPRO_CFG_DATA1	R/W	struct/27	Second block of config structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x64	GYRO_CAL_DATA0	R/W	struct/30	First block of gyro cal structure	Data	Data	Data	Data	Data	Data	Data	Data	

0x65	**GYRO_CAL_DATA1**	**R/W**	struct/19	Second block of gyro cal structure	Data	Data	Data	Data	Data	Data	Data	Data	Can only be written when fusion is stopped. Configuration and calibrations are broken into two blocks of <= 32bytes to support the 32byte limitation of many MCU I2C buffers
0x66	**ACCEL_CAL_DATA0**	**R/W**	struct/30	First block of accel cal structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x67	**ACCEL_CAL_DATA1**	**R/W**	struct/19	Second block of accel cal structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x68	**ELLIP_MAG_CAL_DATA0**	**R/W**	struct/30	First block of ellip mag cal structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x69	**ELLIP_MAG_CAL_DATA1**	**R/W**	struct/19	Second block of ellip mag cal structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x6A	**FINE_MAG_CAL_DATA0**	**R/W**	struct/30	First block of fine mag cal structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x6B	**FINE_MAG_CAL_DATA1**	**R/W**	struct/19	Second block of fine mag cal structure	Data	Data	Data	Data	Data	Data	Data	Data	
0x6C	**NEW_I2C_SLAVE_ADDR**	**W/O**	uint8_t/1	New I2C slave address	Data	Data	Data	Data	Data	Data	Data	Data	
0x6D	**GO_TO_SLEEP**	**W/O**	uint8_t/1	Put coprocessor to sleep	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0:NOP 1:Go To Sleep	
0x6E				Reserved for future use									
0x6F				Reserved for future use									
0x70				Reserved for future use									
0x71				Reserved for future use									
0x72				Reserved for future use									
0x73				Reserved for future use									
0x74				Reserved for future use									
0x75				Reserved for future use									
0x76				Reserved for future use									
0x77				Reserved for future use									
0x78				Reserved for future use									
0x79				Reserved for future use									
0x7A				Reserved for future use									
0x7B				Reserved for future use									
0x7C				Reserved for future use									
0x7D				Reserved for future use									
0x7E				Reserved for future use									
0x7F	**FIRMWARE_ID**	**R/O**	uint8_t/1	Single byte Firmware ID	Data	Data	Data	Data	Data	Data	Data	Data	