

# Product Selector Guide — Motion



Product	ICM-20600	ICM-20602	ICM-20608-D	ICM-20608-G	ICM-20648	ICM-20689	ICG-20660L	ICM-30630	ICM-30631	MPU-6000/6050	MPU-6500	MPU-9250	IAM-20680
<b>Market</b>													
Mobile													
Wearable													
Internet of Things													
Drone													
Imaging													
Head Mount Display													
Automotive													
<b>Architecture</b>													
# Axes	6	6	6	6	6	6	6	6	6	6	6	9	6
Processor(s)	N	N	DMP	N	DMP	N	N	2DMPs + Cortex M0	2DMPs + Cortex M0	DMP	DMP	DMP	N
Software Features			DMP based pedometer		DMP based 6 & 9-axis Cal/Fusion, Android M			SensorStudio	Complete SW Stack - Wrist-worn design	DMP based 9-axis Cal/Fusion	DMP based 9-axis Cal/Fusion	DMP based 9-axis Cal/Fusion	
<b>Details</b>													
Package-Pin	2.5x3x0.91 mm, LGA, 14-leads	3x3x0.75mm LGA, 16-leads	3x3x0.75mm LGA, 16-leads	3x3x0.75mm LGA, 16-leads	3x3x0.9mm QFN, 24-leads	4x4x0.9mm QFN, 24-leads	3x3x0.75mm LGA, 16-leads	3x3x1mm LGA, 24-leads	3x3x1mm LGA, 24-leads	4x4x0.9mm QFN, 24-leads	3x3x0.9mm QFN, 24-leads	3x3x1mm QFN, 24-leads	3x3x0.75 LGA 16-leads
<b>Gyro</b>													
FSR (dps)	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000	±250/500/1000/2000
ZRO @ 25°C	±1dps	±1dps	±5dps	±5dps	±10dps	±5dps	±5dps	±20dps	±20dps	±20dps	±5dps	±5dps	±3.5dps
ZRO over Temp	±0.02dps/°C (-40° to +85°C)	±0.02dps/°C (-40° to +85°C)	±0.1dps/°C (-40° to +85°C)	±0.1dps/°C (-40° to +85°C)	±0.05dps/°C (-40° to +85°C)	±0.04dps/°C (-40° to +85°C)	±0.06dps/°C (-20° to +75°C)	±0.24dps/°C (-40° to +85°C)	±0.24dps/°C (-40° to +85°C)	±0.16dps/°C (-40° to +85°C)	±0.24dps/°C (-40° to +85°C)	±0.24dps/°C (-40° to +85°C)	±0.28dps/°C (-40° to +85°C)
Sens. Tolerance @ 25°C	±1%	±1%	±2%	±2%	±3%	±2%	±1%	±3%	±3%	±3%	±3%	±3%	±1.5%
Sens Over Temp	±2% (-40° to +85°C)	±2% (-40° to +85°C)	±3% (-40° to +85°C)	±3% (-40° to +85°C)	±3% (-40° to +85°C)	±1.5% (-40° to +85°C)	±3% (-20° to +75°C)	±4% (-40° to +85°C)	±4% (-40° to +85°C)	±2% (-40° to +85°C)	±4% (-40° to +85°C)	±4% (-40° to +85°C)	±3% (-40° to +85°C)
Gyro Noise	0.004dps/√Hz	0.004dps/√Hz	0.008dps/√Hz	0.008dps/√Hz	0.011dps/√Hz TYP	0.006dps/√Hz	0.005dps/√Hz TYP	0.016dps/√Hz	0.016dps/√Hz	0.005dps/√Hz	0.01dps/√Hz	0.01dps/√Hz	0.005dps/√Hz
<b>Accel</b>													
FSR	±2/4/8/16g	±2/4/8/16g	±2/4/8/16g	±2/4/8/16g	2/4/8/16g	±2/4/8/16g	2/4/8/16g	±2/4/8/16g	±2/4/8/16g	±2/4/8/16g	±2/4/8/16g	±2/4/8/16g	±2/4/8/16g
Component Offset @ 25°C	±25mg	±25mg	±60mg	±60mg	±25mg	±20mg	X,Y: ±40mg; Z: ±65mg	±80mg	±80mg	X,Y: ±50mg; Z: ±80mg	±60mg	X,Y: ±60mg; Z: ±80mg	±60mg (post solder)
Offset Over Temp	X, Y: ±0.5mg/°C Z: ±1mg/°C (-40° to +85°C)	X, Y: ±0.5mg/°C Z: ±1mg/°C (-40° to +85°C)	X, Y: ±0.5mg/°C Z: ±1mg/°C (-40° to +85°C)	X, Y: ±0.5mg/°C Z: ±1mg/°C (-40° to +85°C)	X, Y: ±0.64mg/°C Z: ±1mg/°C (-40° to +85°C)	X, Y: ±0.5mg/°C Z: ±0.75mg/°C (-40° to +85°C)	±0.5mg/°C (-20° to +75°C)	X, Y: ±0.64mg/°C Z: ±2mg/°C (-40° to +85°C)	X, Y: ±0.64mg/°C Z: ±2mg/°C (-40° to +85°C)	X, Y: ±0.5mg/°C Z: ±85mg/°C (0° to +70°C)	X, Y: ±0.64mg/°C Z: ±1mg/°C (-40° to +85°C)	±1.5mg/°C (-40° to +85°C)	±0.56mg/°C (-40° to +85°C)
Sens. Tolerance	±1%	±1%	±2%	±2%	±3%	±2%	±1%	±3%	±3%	±3%	±3%	±3%	±3%
Sens. Over Temp	±1.5% (-40° to +85°C)	±1.5% (-40° to +85°C)	±2% (-40° to +85°C)	±2% (-40° to +85°C)	±3.25% (-40° to +85°C)	±1% (-40° to +85°C)	±2.5% (-20° to +75°C)	±3.25% (-40° to +85°C)	±3.25% (-40° to +85°C)	±2.5% (-40° to +85°C)	±3.25% (-40° to +85°C)	±3.25% (-40° to +85°C)	±3.25% (-40° to +85°C)
Accel Noise	100µg/√Hz	100µg/√Hz	250µg/√Hz	250µg/√Hz	190µg/√Hz	150µg/√Hz	220µg/√Hz	250µg/√Hz	250µg/√Hz	400µg/√Hz	300µg/√Hz	300µg/√Hz	170µg/√Hz
Bus Interface	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C	SPI; I2C (6500 only)	SPI; I2C	SPI; I2C	SPI; I2C
FSYNC Support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Memory	1Kbytes FIFO	1Kbytes FIFO	512bytes FIFO	512bytes FIFO	512bytes FIFO	4Kbytes FIFO	512bytes FIFO	64Kbytes SRAM; 64Kbytes Flash	64Kbytes SRAM; 64Kbytes Flash	1024bytes FIFO	512bytes FIFO	512bytes FIFO	512bytes FIFO
Power	6-Axis Low-Power Mode: 1.33mA * 1.8V = 2.39mW Gyro: 100Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.33mA * 1.8V = 2.39mW Gyro: 100Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.9mA * 1.8V = 3.42mW Gyro: 100Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.9mA * 1.8V = 3.42mW Gyro: 100Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.9mA * 1.8V = 3.42mW Gyro: 100Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.9mA * 1.8V = 3.42mW Gyro: 100Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.9mA * 1.8V = 3.42mW Gyro: 100Hz ODR, 1x avg filter	6-Axis: 3mA * 1.8V = 5.4mW Gyro/Accel: 102Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.49mA * 1.8V = 2.68mW Gyro/Accel: 102Hz ODR, 1x avg filter	6-Axis Low-Power Mode: 1.49mA * 1.8V = 2.68mW Gyro/Accel: 102Hz ODR, 1x avg filter	6-Axis: 3.9mA * 2.5V = 9.75mW 1.8V = 6.12mW	6-Axis: 3.4mA * 1.8V = 9.25mW 2.5V = 9.25mW	6-Axis Low-Power Mode: 1.9mA * 1.8V = 3.42mW Gyro: 102Hz ODR, 1x avg filter
Compass FSR												±4800µT	
Compass Initial Offset												±300µT	