

SmartMotion®

PRIMARY APPLICATIONS



Wearables & Hearables (TWS)
Captures wrist gestures, fitness activities, exercise motion, and sleep signatures. Detects head orientation for spatial 360° audio, all with low power consumption



Mobile Devices
APEX, raise to wake/sleep, significant motion detection, and the smallest & thinnest LGA package



AR & VR
Low noise, 19-bits of gyroscope data & 18-bits of accelerometer data, external clock input, tilt detection, tap detection, and significant motion detection



Drones
Most trusted IMUs with long market history. Low noise and high temperature stability, 32kHz ODR for fast response, ±32g Accel FSR for wide measurement range

FEATURED PRODUCTS

ICM-45605/ ICM-45686



Lowest power ultra-high performance 6-axis MEMS IMU with the world's first BalancedGyro™ technology for superb vibration rejection.

ICM-42688-P



Lowest noise 6-axis IMU supporting an industry first 20-bit data formation FIFO for high date resolution and up to 32 kHz ODR for reducing system latency.

ICM-42670-P



High-performance 6-Axis MotionTracking® IMU targeted at consumer & IoT applications that require ultra-low power for longer battery lives. Also features user-programmable digital filters for gyro, accel, and temp sensors

PRODUCT CATEGORIES

ICM-45605/ICM-45686

Mobile, Wearables, TWS, AR/VR

- Industry's lowest power consumption
- Wide FSR up to ±32g and ±4000 dps (ICM-45686)
- 6-axis LNM: 420 µA; 3-axis UPLM: 15 µA
- BalancedGyro™ technology enables supreme vibration rejection and temperature stability

ICM-42688-P

AR / VR / MR, Robotics

- Lowest Noise: Gyro LNM 2.8 mpds/√Hz
- High Precision: 19-bits gyro data & 18-bits accel data
- Embedded features: tilt detection, tap detection, significant motor detection, and pedometer

ICM-40609-D

Flight Control and Image Stabilization in Drones

- Lowest sensitivity and offset stability error over temp
- Up to 32 Hz ODR for low system latency
- High accel FSR up to ±32g

ICM-42670-P

Wearables, TWS, Gaming, IoT

- Best performance / cost balance
- Lower Power: 9.8 µA (ALP mode @25 Hz)
- Thinnest package: 0.76 mm
- Embedded features: APEX pedometer, built-in gestures

PRODUCT DETAILS

Product Number	Package (mm)	Gyro FSR (dps)	Gyro Sensitivity (mdps/√Hz)	Accel FSR (g)	Accel Sensitivity (µg/√Hz)	Digital Output	Output Data Rate (Hz)	Operating Voltage (V)
ICM-45686	2.5 × 3 × 0.81	±15.625 – ±4000	3.8	±2 – ±32	70	Single Interface- I3C SM , I ² C, or SPI	1.5625 - 6400	1.71 – 3.6 (VDD) 1.08 – 3.6 (VDDIO)
ICM-45605	2.5 × 3 × 0.81	±15.625 – ±2000	3.8	±2 – ±16	70	Single Interface I3C SM , I ² C, or SPI	1.5625 - 6400	1.71 – 3.6 (VDD) 1.08 – 3.6 (VDDIO)
ICM-40609-D	3 × 3 × 0.91	±15.625 – ±2000	4.5	±4 – ±32	100	Single Interface I ² C, or SPI	12.5 - 32000	1.71 – 3.6
ICM-42670-P	3 × 3 × 0.76	±250 – ±2000	7	±2 – ±16	100	Single Interface I3C SM , I ² C, or SPI	1.5625 - 1600	1.71 – 3.6
ICM-42688-P	2.5 × 3 × 0.91	±15.625 – ±2000	2.8	±2 – ±16	65	Single Interface I3C SM , I ² C, or SPI	12.5 - 32000	1.71 – 3.6



Scan here for additional materials & information.