- 1mA current draw when inactive
- Automotive grade AEC-Q100 or AEC-Q200 components used wherever possible
- Heavily tested code monitored by a hardware watchdog
- UART bootloader for firmware updates
- EEPROM encryption to prevent secret extraction
- Fingerprint sensor serial number lock to prevent bypasses involving exchanging for a pre-programmed sensor

The Keyless Start Module (KSM) is the combination of a Microcontroller, Opto-isolated MOSFET relays, Haptic feedback driver, LED driver, Fingerprint sensor, MEMS microphone and amplifier, and supporting components for these IC's. This combination of hardware allows the KSM to test fingerprints applied to the sensor against a list of pre-authenticated ones to determine if a match is detected. If a match is found the KSM will first play a haptic effect to inform the user they are authenticated before starting the car with the integrated relays. During the starting process the KSM will decrypt the required information from it's memory before completing a handshake with the BEM to unlock the car's immobiliser. Other hardware like the LED driver allows the KSM to mimic the factory illumination ring around the key barrel, as well as providing feedback for certain events and during configuration. KSM Configuration is performed via a series of precomputed DTMF sequences played from a smartphone or laptop and recorded by the onboard microphone. The KSM will then decode the requested configuration change and, if successful, set the illumination ring colour to notify the user before applying it to EEPROM. The KSM has no facilities to store or transmit this audio data, which is only captured in configuration mode.