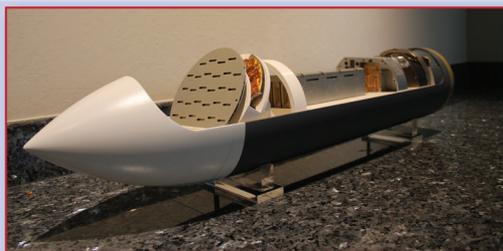


# FAB S and LAB S

## Nothing Escapes Cobham Guided Munitions Microelectronic Solutions



In 2014, the Guided Munitions Microelectronic Solutions (GMMS) division of Cobham, driven by a major customer, initiated RMS ZERO Policy and Product Escapes focusing on their operations and quality standards. ZERO stands for Zero Escapes to the customer's Operations but represents more of an overall strategy to strive toward zero defects using continuous improvement and team work. We saw clear evidence of this with their extensive factory automation and formal failure reporting and corrective action system (FRACAS). Each day production teams meet to discuss quality issues and assign teams to find the root cause of any defects or out of control processes. They are surrounded by charts and graphs in a large common area with white boards where they review their assembly operations and share ideas for improvement.

The facility has developed and implemented an extensive equipment monitoring system that associates can access via tablets to see that status of all equipment and log any issues including corrective actions taken to fix the problems. This allows employees to diagnose any long term issues early and take corrective action before processes go out of control. The employees use data driven information to drive continuous improvement in the facility and are accountable for their processes and actions. You can see their passion and pride in their operations as they present their data and review their processes.

GMMS employs close to 500 people in the San Jose area and has about 160,000 square feet of operations. They produce custom microwave assemblies for missile, EW and telemetry applications. They excel at designing and producing high quality mmWave assemblies in custom form factors. While most of their business is defense related their mmWave test expertise has involved them in some 5G test setups for commercial customers too.

Their market differentiators include expertise in MMIC design (including GaN), industry leading phase noise performance, highly dense microwave packaging, DSP and embedded software, high power transmitter and receiver protection, design margin and simulation, and factory automation/SPC for high quality manufacturing. Some of their key products include wideband/narrowband multichannel frequency conversion, RF and digital receivers and exciters, transmit and receive modules and transceivers, AESA arrays, high performance direct frequency synthesizers and LO sources, multi-octave solid-state high-power amplifiers and transmitters and telemetry/data link modules.

Their facility is impressive with about 200 custom test stations in operation including classified stations with protected networks. About 150 of the 200 test stations are automated to test over temperature without an operator and all connected to a classified local area network. They manufacture most of their packaging making their own glass seals, substrates and housings for many applications. They have a wide range of manufacturing equipment in their assembly operations including die/substrate attach, wire bonding, encapsulation/sealing, automated visual inspection, environmental screening/testing and high frequency/high-power testing. They focus on automation with pick and place machines, auto wire bonding and auto visual inspection. Greater than 95 percent of their wire bonding is automated reducing labor and improving consistency and yield.

GMMS has grown over the last eight years and achieved a high level of quality. The leadership has driven a team-based zero defect approach and automated complicated processes that have streamlined their operations. Nothing escapes their quality system and missiles that they equip.

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