



**FOR IMMEDIATE RELEASE**

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**ISI INTRODUCES WORLD CLASS HIGH FIELD STRENGTH 3-AXIS MAGNET TEST SOLUTION FOR MRAM AND MAG-SENSOR PRODUCTS**

SANTA CLARA, CA – March 1, 2022: Integral Solutions International (ISI), the world's leading manufacturer of wafer-level Magnetic Device testers, announces the release of its groundbreaking 3-Axis Magnet Option for wafer-level testing. Combined with the WLA5000 Tester, the 3D magnetic fields produced by this system can be used for characterization of 2D/3D Magnetic Sensors, and for characterization and qualification of magnetic-based memories such as MRAM.

For MRAM applications, the 3D Magnetic fields produced by ISI's 3-Axis Magnet Option delivers solutions for both STT and SOT applications. For SOT-MRAM this system provides the flexibility of generating in-plane magnetic fields to assist the SOT write operation, while also providing high-strength perpendicular fields for traditional MRAM transfer curve measurements, all without having to swap magnets. Further, for magnetic-based memories including STT/SOT-MRAM this system provides a means for the characterization and qualification of stray field immunity in a 3D environment.

Following ISI's tradition of developing turnkey electromagnets that require little to no end-user maintenance or recalibration, the 3-Axis Magnet Option is shipped factory calibrated and can be user-installed on any ISI WLA5000 Wafer Level Tester in roughly an hour. As with the majority of our proprietary electromagnet designs, the 3-Axis Magnet is made from our low-coercivity core material, resulting in extremely low hysteresis and near-zero remanence. In support of high duty cycles forced air cooling ports are available, passing air through sealed chambers before exiting through external exhaust ports, isolating the wafer from the exhaust airflow.

With the 3-Axis Magnet Option the device under test can be subjected to any 3D magnetic field angle the user chooses. Full programmability with the WLA5000 Tester allows for sweeping the magnitude of field along any single, dual, or 3-axis vectors, while the other axes can be disabled or set to DC offset fields. Maximum field in the X or Y in-plane axes is 0.1T, while perpendicular Z field can produce up to 0.5T. Higher in-plane fields are available when the removable pole centerpiece is withdrawn, a conversion that literally takes seconds.

As with ISI's standard methodology, the 3-Axis Magnet produces a large volume of uniform field centered upon a defined target test area. Without the burden of any user adjustments or calibrations, customers may simply slide in an ISI Probecard and be confident that the device under test is properly positioned within this target field area. The 3-Axis Magnet is also compatible with the downfacing optics of the WLA5000, for optical monitoring of the probe to pad contact and alignment. A host of verification tools, including Gaussmeter field verification and Hall Effect, are available for the end user to confirm both the magnet and tester are operating properly.

As ISI's CEO Henry Patland summarizes, "While our new 3-Axis Magnet is ideal for testing Magnetic Sensors, when combined with our PULSAR8000 MRAM Module this system is also

ideally suited for our SOT-MRAM customers who require in-plane assist fields during pulsing, along with an in-situ means of testing MRAM devices for magnetic immunity.”

**About ISI**

Integral Solutions International (ISI) is a privately held California based US Corporation, established in September 1995. ISI is the world’s leading manufacturer of MRAM and Magnetic Sensor testers. With over 25 years of experience in magnetic measurement technology and an installed base of over 1,000 units across the world, ISI is perfectly positioned to satisfy the testing needs of the emerging MRAM and Magnetic Sensor industries. ISI provides worldwide customer support from the United States, Japan, Korea, Singapore, Malaysia, Thailand, China, and Hong-Kong.