

Abstract Submitted  
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**Compact devices for atomic spectroscopy and quantum technologies: applications in electromagnetic field sensing, measurement, and imaging.**<sup>1</sup> LUIS FELIPE GONCALVES, GEORG RAITHEL, DAVID ANDERSON, Rydberg Technologies Inc. — Quantum phenomena in atomic, molecular, and optical systems continue to enable fundamentally new technological advances with broad impact across different industries, from science research and metrology to communications and defense. The realization of devices and instruments based on quantum technology requires both the development of new hardware to perform specialized tasks as well as advanced engineering for hardware miniaturization and operation in real-world harsh environments. Here we present the development of compact, plug-and-play devices for high-resolution optical frequency tracking and absolute frequency referencing for narrow-line lasers made for use as either stand-alone components in AMO laboratory experiments or as integrated OEM components in higher-level instrument assemblies. Features and capabilities of these devices are highlighted in their application to atomic electromagnetic field sensing, receiving, and imaging technology. Recent developments in high magnetic field measurement technology and SI-traceable, self-calibrated broadband RF field imaging and antenna characterization with a portable Rydberg field probe (RFP) and measurement system (RFMS) will be presented.

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