

ABSTRACT

ELECTROMECHANICAL PILL DEVICE WITH LOCALIZATION CAPABILITIES

5

Various embodiments are described herein for a device, system, and method for identifying a location of an ingestible device within a gastrointestinal tract of a body. In some embodiments, the ingestible device includes a sensing unit with an axial optical sensing sub- unit located proximal to at least one end of the device, and a radial optical sensing sub-unit located proximal to a radial wall of the device, and may autonomously identify a location within the gastrointestinal tract. In some embodiments, the ingestible device includes optical illumination sources and detectors that operate at a plurality of different wavelengths, and may discern regions of a gastrointestinal tract by using the reflection properties of organ tissue and occasional particulates. In some embodiments, the ingestible device may sample fluid or release medicament based on a detected device location.

15

(Fig. 1A)