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(54) Title: PORTABLE RADIO FREQUENCY IDENTIFICATION (RFID) READER

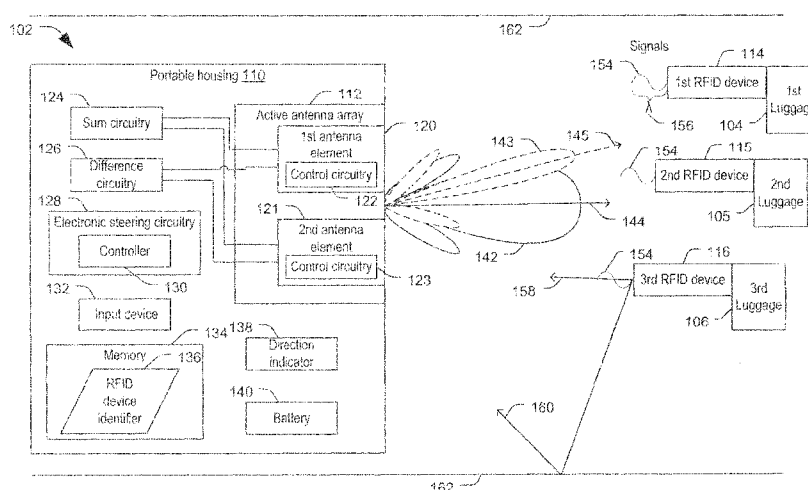


FIG. 1

(57) Abstract: A particular portable radio frequency identification (RFID) reader includes an active antenna array including a plurality of antenna elements to receive RFID signals from RFID devices. The antenna elements include control circuitry to control a beam pattern generated by the active antenna array. The portable RFID reader further includes sum circuitry and difference circuitry. The sum circuitry is operable to determine a sum signal by summing the RFID signals received by at least two of the plurality of antenna elements. The difference circuitry is operable to determine a difference signal between the RFID signals received by at least two of the plurality of antenna elements. The portable RFID reader also includes a controller to electronically steer the beam pattern and to determine a direction from the RFID reader to a particular RFID device.