

## ABSTRACT

*Internet of Thing (IoT) technology is needed in the industrial sector, this is the reason the simulation of technology design Narrowband Internet of Thing (NB-IoT) in the building of PT. Sutanto ArifChandra Elektronik which is a manufactures company the largest produces audio-video cable in Indonesia, because it has not acquired the technology to monitor the cable production process. The use of NB-IoT technology is because it can monitor the system in real time in an indoor environment and has a high coverage level. The design simulation of NB-IoT technology uses 900 MHz frequency and 180 kHz bandwidth with propagation Cost 231 Multiwall on application Radiowave Propagation Simulator 5.4. Simulated results use parameter Received Signal Strength Indicator (RSSI) and Signal to Interference Ratio (SIR). The result of the simulation design is done by installing the NB-IoT sensor nodes as many as 14 pieces on each of machines in the PT Sutanto ArifChandra Elektronik, where the NB-IoT sensor nodes are placed on the annealing machine by 5 pieces, the engine extruding 7 pieces, cable roll machine as much as 1 piece and cabling machine 1 piece, it takes 1 piece of access point NB-IoT located in the middle of the building with a height of 8 meters, according to the first scenario, to produce the best simulation result is With the average value of the RSSI parameter (coverage) of -11.54 dBm and the average value of the SIR parameter of 7.56 dB.*

***Keyword: NB-IoT, Indoor Planning, Cost 231 Multiwall Propagation, RPS 5.4.***