News

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GW Instek introduces C-1200 Multi-Channel LoRa Tester

The First Multi-Channel LoRa-Specific One Box Tester for Transmitter and Receiver Tests

C-1200 is an OBT (One Box Tester) that incorporates LoRa TX and RX tests. In terms of LoRa Transmitter, C-1200 provides tests including spectrum analysis, time domain, FEI (Frequency Error Indicator), and TOA (Time-On-Air). With respect to LoRa Receiver, tests include sensitivity, BER (Bit Error Rate), and PER (Packet Error Rate). In addition to Sub-GHz, C-1200 also supports the 2.4 GHz bandwidth and the FSK signal test. Users can also edit the transmitted payload by themselves. When receiving data, the formats include binary/HEX, and ASCII code, which allow data transmission results to be easily confirmed. In addition to the signaling test of the finished product, C-1201 is a transfer box connecting C-1200 to LoRa module that directly controls the DUT to perform non-signaling tests on GW semi-finished products through UART/SPI/I2C interfaces.

Spectrum display, time domain display, FEI and TOA functions can identify the problems occurred in the design or production process while analyzing LoRa signals. When measuring LoRa transmit signals, C-1200 can simultaneously display the spectrum of CSS (chirp spread spectrum) signals and the time domain waveform of the modulation signal to analyze whether the CSS modulation is correct. FEI (Frequency Error Indicator) measurement can be utilized to calibrate the frequency of the LoRa device to avoid greater frequency error, which leads to a reduced sensitivity or even the loss of packet due to the temperature change in the actual application environment. The actual TOA (Time-On-Air) measurement can be applied to ensure that the LoRa device meets the design goals after completing the settings of the various parameters including SF, CR, and BW.

4 sets of RF T/Rx channels are ideal for pipeline production process. First, select one of the 4 channels, then set the channel to TX or RX mode and start testing. That is, select a channel in one time to conduct TX or RX test, which allows users to switch to another channel for testing while the DUT is being picked and placed. For the pipeline production line using robotic arm and automation control (ATE), this method can greatly reduce the waiting time of the test equipment and test equipment investment costs so as to substantially improve production efficiency.

The dedicated test application software with full functionalities. C-1200 provides a full-featured test software and the user interface style, which is similar to Semtech's SDK (software development kit) to allow users to quickly become familiar with the operation. In addition to the complete RX and TX test functions, the MP (Mass Production) test is also available. Users can perform a large number of repetitive tests by selecting the parameter settings to be tested such as production line test. In the Spectrum Mode, users can perform US FCC 15.209/15.247 communications test regulations to ensure that the product complies with the communications regulations of Europe and the United States. For power consumption test, the application software can conduct testing by connecting C-1200 with a high-precision power supply PPH-1503 or a high-precision multi-meter GDM-9061.

For more information on the operation of C-1200 and the measurements, please refer to the product information webpage: www.gwinstek.com/en-US/LoRa_Solution/index (/en-US/LoRa_Solution/index)

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Hipot Test Equipment (/en-US/products/layer/Safety_Testers)