

REFLECTIVE ELECTRICAL ENGINEERING LEARNING (REEL2026)

Building Skills and Professionalism through
Industrial Training

SKILLS



REEL2026
Reflective
Electrical Engineering Learning

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BUILDING SKILLS AND PROFESSIONALISM THROUGH INDUSTRIAL TRAINING



REEL 2026

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*"Building Skills and Professionalism
through Industrial Training"*

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*Reflection transforms
experience into meaningful learning*

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Developing Technical Skills Through Industrial Training at AMC Cincaria Sdn. Bhd.

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Exposure to the actual production process in electronics manufacturing was a new experience that I gained during my four months of industrial training at AMC Cincaria Sdn. Bhd. Among the scope of tasks given to me were PCB assembly, testing and product integration for various electronic products, including door entry telephone system. This experience allowed me to develop my technical skills through hands-on activities.

In the PCB assembly task, I learned to manually insert electronic components into the printed circuit board (PCB). In addition, I also had the opportunity to place components such as capacitors, resistors, transistors, connectors and jumpers according to the work instructions. The orientation and polarity also need to be ensured correctly to avoid circuit damage. This task can improve my understanding of PCB layout and component identification.

The next process is the trimming process on the PCBA which needs to be done by cutting off the excess component leads using an air cutter. Then post wave touch up is done to improve the solder joints using a soldering iron to ensure the connections and electrical quality are in good condition.

After that, the de-paneling process needs to be carried out using a de-panel jig. This process requires great care to separate the individual PCBs from the panel to avoid component damage. Before the de-paneling process, connectors and jumpers need to be inserted into the PCB according to the instructions.

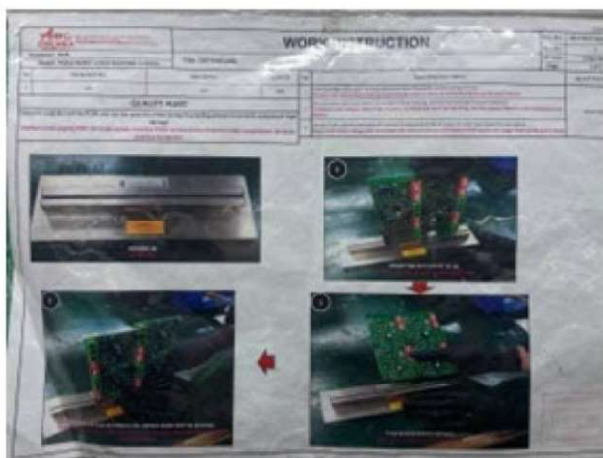


Figure 1: De-paneling Instructions

Apart from PCB assembly tasks, I was also given a task in ICT (In-circuit Testing). The PCBA needs to be placed on a test jig, and this machine will automatically check the circuit.

The result will show Pass or Fail. This can help identify faulty boards. In addition, functional testing is also carried out by placing the PCB on the test, supplying power and observing the indicator lights. The switch needs to be toggled to ensure the correct output response.

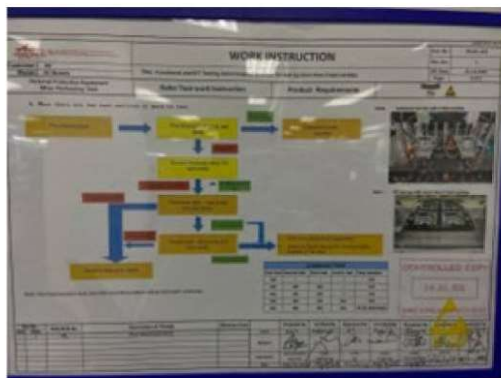


Figure 2: ICT Testing Process

I also had the opportunity to program the IC using MPLAB PM3 for the PIC10F200 microcontroller and then tested the IC to make sure it worked properly.



Figure 3: IC Programming

In addition, I also learned to install PCBA into the base housing using an electric torque screwdriver and do the MIC gluing to secure the microphone and speaker. I also made sure the placement was correct and the wires were neatly arranged.

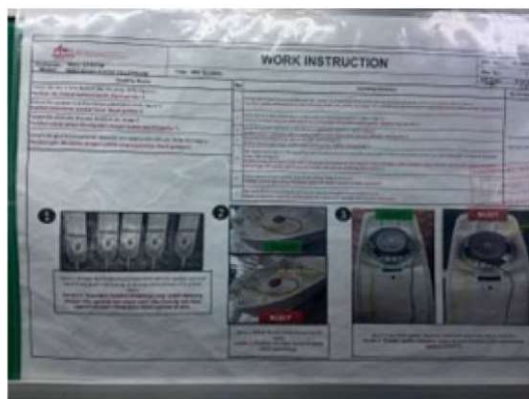


Figure 4: MIC gluing

Through this industrial training, I learned a lot of knowledge and was able to improve my technical skills, attention to detail and understanding of the production process. I also learned the importance of safety, quality control, and following work instructions.

In conclusion, this industrial training provided valuable hands-on experience and prepared me for future challenges in electrical and electronic engineering.

Authors' Biography



Nurul Azie binti Mohd Ali is a student pursuing a Diploma in Electrical and Electronic Engineering at Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang. She completed a four-month industrial training at AMC Cincaria Sdn. Bhd., where she gained hands-on experience in PCB assembly, testing, and electronic production processes.



Shahilah binti Nordin has 23 years of experience in electrical engineering field since she joined Universiti Teknologi MARA, Pulau Pinang in 2003. She received Bachelor of Engineering (Hons) (Electrical, Electronics and Systems) from Universiti Kebangsaan Malaysia, UKM in 1998 and was appointed as lecturer in Uniti College for 5 years. In 2000, she received Master of Engineering (Communication and System) from Universiti Kebangsaan Malaysia, UKM.

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