Title	Demonstrate knowledge of the development of an electronic product
Level	3	Credits	3

Purpose	This unit standard is intended for use in a senior secondary school environment, pre-employment electronics courses, or for electronics technicians. People credited with this unit standard are able to: – demonstrate knowledge of the key stages undertaken by a manufacturing company in the development of an electronic product; and – describe how teams work together to develop an electronic product.

Classification	Electronic Engineering > Electronics Technology

Available grade	Achieved, Merit, and Excellence

Criteria for Merit	For merit to be awarded, the candidate must meet the merit criteria specified in evidence requirement 1.1.

Criteria for Excellence	For excellence to be awarded, the candidate must meet the excellence criteria specified in evidence requirement 1.1.

Explanatory notes

1   Assessment definitions
   Describe – for the purpose of this unit standard means to relate, recount, or characterise in sequence or story form.
   Explain – for the purpose of this unit standard means to interpret and clarify points, and investigate causes where possible.
   Discuss – for the purpose of this unit standard means to evaluate and analyse processes, draw comparisons and suggest options or alternatives.

2   Definitions
   Electronic product – a functional device produced for sale that incorporates both hardware and embedded software.
   Development of an electronic product – all stages of the development cycle.
   EMC – Electromagnetic compatibility.
   FCC – Federal Communications Commission.
   RoHS – Restriction of Hazardous Substances.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of the key stages undertaken by a manufacturing company in the development of an electronic product.

Evidence requirements

1.1 The key stages in the development of an electronic product are described.

Range   key stages – development of a business case – concept development, market research, technical research, design, feasibility study;
development of a prototype – development of technical solution, building, testing;
manufacture – plant requirements, parts procurement and storage, assembly stages, product testing;
marketing – advertising, sales, distribution, technical support, customer support.

For merit – the candidate must describe and explain the key stages in the development of an electronic product. The explanation must include reasons for each key stage, and consequences of not undertaking key stages.

For excellence – the candidate must describe and explain as for merit, and discuss the key stages in the development of an electronic product. This will be in the form of a written report. The discussion must include evaluation and analysis of prototyping, manufacturing, and testing techniques with reference to international standards relating to EMC, FCC, and RoHS.

Outcome 2

Describe how teams work together to develop an electronic product.

Evidence requirements

2.1 The functions of teams are described in terms of their place in the process.

Range   functions – software development, hardware development, mechanical engineering, electronic manufacturing, quality control.

Planned review date	31 December 2018

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 December 1996	31 December 2012
Revision	2	3 April 2001	31 December 2012

Process	Version	Date	Last Date for Assessment
Review	3	26 July 2004	31 December 2012
Review	4	25 May 2007	31 December 2012
Review	5	16 April 2010	31 December 2012
Review	6	15 April 2011	N/A
Rollover and Revision	7	15 March 2012	N/A
Revision	8	15 January 2014	N/A
Rollover	9	27 January 2015	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Please note
Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.