

Certificate No.	NESA-S093	Version 1.0
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Approval date 13 December 2022

Approved by Head of Engineering Standards

This certificate is issued to

Supplier Siemens Mobility

In respect of

Manufacturer Siemens Mobility
Locked Bag 66
South Melbourne
Victoria 3205
Australia

Product description Signalling track circuit

Item identification Intelligent Processor Island Track Circuit (IPITC)

Application Network Wide

Relevant Standards SPS 05 Electrical & Components (Ratings & Construction Requirements)
SPS 02 Environmental Conditions
ESC-07-01 Installation of Trackside Equipment
ESM-07-02 Track Circuits & Train Detection Devices
ESC-09-02 Lightning and Surge Protection Requirements

Conditions of Approval	
General	<ol style="list-style-type: none"> Only items on the Approved Items List shall be used on the ARTC network. For ATMS applications where short-length track circuits generally over point zone areas are required and other approved train detection systems widely used on the ARTC network are found not to be appropriate for the intended application.
Supplier	<ol style="list-style-type: none"> All documentation from the supplier supporting this system shall be in English. All diagnostic systems, support systems, and tools associated with the Product shall display all information in English. The Supplier shall submit to ARTC any updates to the support documents listed in Table 4. The supplier grants to ARTC permission to publish the documents on the ARTC Engineering Extranet so that those signals staff internal and external involved in supporting the equipment may reference the information. The Supplier will make available training courses for Maintenance of the product for signals technician staff to undertake maintenance, fault finding, installation, set to work and testing. All items shall be fitted with a readily visible label stating the Manufacturer/Supplier, Product group, item name, revision level, serial number, date of manufacturer and manufacturer's identification product number.

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Design Conditions	<ol style="list-style-type: none"> 8. Designer to select the frequency from the frequencies provided in the manufacturer's manual. 9. Pick-up delay timer to be selected based on application in accordance with manufacturer's requirements. Designer to consider tracks with infrequent rail traffic and possible rail head contamination in the design and increase the pick-up delay timer to achieve a SFAIRP design. 10. Wiring from location to track bootleg riser to be #6 AWG (16mm²) twisted pair wires (twist 6 turns per meter) 11. Minimum length of the track circuit section is 15 meters. 12. Maximum track circuit length is 150 meters. 13. Frequencies of 10 kHz and lower are to be used on track circuit lengths of 60 meters and longer where the ballast resistance may be impacted. 14. Frequencies to not be repeated on the same track within 900 meters, unless separated by insulated joints. Frequencies on the same track are recommended to be 2 frequencies apart (on the table of available frequencies in the manufacturer's manual). 15. On adjacent tracks, track circuit frequencies should not be repeated within 450 meters. 16. Primary surge protection is to be used on both track and battery wires. 17. Surge Panels must always be mounted vertically on racks for the functioning of the individual lightning arrestor heavy-duty module.
Signal Designers	<ol style="list-style-type: none"> 18. Circuit drawings to show the designed frequency. 19. All designs for application on the ARTC network shall be in accordance with the relevant manufacturer's manuals and ARTC engineering and signalling standards.
Signal Maintenance, Installation & Testing	<ol style="list-style-type: none"> 20. Any individual working with the product on the ARTC network shall have completed the manufacturer's training course for maintenance. The individual shall also have the product on their statement of competency for maintenance and/or installation and/or test with a level 2 or shall work under appropriate mentorship and supervision. 21. There are no field serviceable components within the units. Any failed units shall be replaced. Units shall only be repaired and overhauled by certified workshops.

A general condition of approval is that the supplier remains accredited to ISO 9001 specifically for these products and ARTC is advised on a 12 monthly basis that accreditation is current. ARTC reserves the right to conduct its own audit of the manufacture and supply of these components to AS 19011.

Any subsequent change to the design, materials or manufacturing process is not covered by this approval. The manufacturer should notify ARTC of any modification or changes in order to obtain a valid certificate.

Note/Comments

Issue date 13/12/2022

Expiry date N/A

Issued by

ARTC Manager Signalling Standards

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APPROVED ITEMS LIST

Table 1 – Track Circuit

Part Number	Product Name	Product Description
106257202	IPITC	Track Circuit, Intelligent Processor Island complete unit, Model IPITC, Programmable Frequencies 2.14KHz – 20.2KHz
106257150	IPITC	Track Circuit, Intelligent Processor Island – Board only

Table 2 – Firmware

Current Release	Install Location	CRC	Software
9V284-A01K	A80211 Processor Serial Port (J1)	14192C3E	Application
9V252-A02C	A80211 Processor Serial Port (J1)		Boot

Table 3 – Surge Arrestor Panels

Part Number	Product Name	Product Description
106257299	Surge Panel	Surge Protection Panel Track Rack Mount 4 way
106257296	Surge Panel	Surge Protection Panel, Battery & Single Track (Tx & Rx) Rack Mount 3 way
106257298	Surge Panel	Surge Protection Panel Track – single unit Single track connection 6 wire
106255553	Surge Protector	Lightning Arrestor, Heavy Duty
106255556	Surge Protector	Equalizer, Heavy Duty

Table 4 Manuals

Identification	Title	Date	Version
SIG-0097-04	Intelligent Processor Island (IPI) and IPI Track Circuit (IPITC)	May 2014	D3