

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

Module

Chapter D: Appendices 2 to 5

Endorsement and Authorisation

For endorsement, authorisation and issue record of this document, please refer to the SSI Applications Manual Contents, NR/L2/SIG/17002

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of Network Rail.

© Copyright 2015 Network Rail.

Uncontrolled copy once printed from its electronic source.

Published and Issued by Network Rail, 2nd Floor, One Eversholt Street, London. NW1 2DN.



Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

User information

This Network Rail standard contains colour-coding according to the following Red–Amber–Green classification.

Red requirements – No variations, could stop the railway

- **Red requirements shall** always be complied with and achieved.
- Red requirements shall be presented in a red box **with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of red requirements lies with the Professional Head/Standard Owner.
- Red requirements are monitored for compliance.
- Corrective actions shall be enforced if deviations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Amber requirements – Controlled variations, approved risk analysis and mitigation

- **Amber requirements shall** be complied with unless variation has been approved in advance.
- Amber requirements shall be presented with an amber sidebar **and with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of these requirements lies with the Professional Head/Standard Owner, or their nominated Delegated Authority.
- Amber requirements are monitored for compliance.
- Variations **may** be permitted. Variations are approved by the Standard Owner or through existing Delegated Authority arrangements.
- Corrective actions shall be enforced if **non-approved** variations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Green – Guidance

- Guidance is based on good practice. Guidance represents supporting information to help achieve **Red** and **Amber** requirements.
- Guidance shall be presented with a dotted green sidebar **and with the word “should” (usually in notes) or as a direct instruction**.
- Guidance is **not mandatory** and is not monitored for compliance.
- Alternative solutions may be used. Alternative solutions do not need to be formally approved.
- Decisions made by a competent person to use alternative solutions should be backed up by appropriate evidence or documentation.

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

Issue record

Issue	Date	Comments
6	Feb 2002	6 th Issue
7	05/09/2015	Appendix 3 amended to include missing # ref. AMD 04/01 (7) incorporated .

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 06/12/2015.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the issue of any relevant Network Rail standards current when GRIP Stage 3 was completed and not to comply with requirements contained herein, unless stipulated otherwise in the scope of this standard.

Disclaimer

In issuing this document for its stated purpose, Network Rail makes no warranties, express or implied, that compliance with all or any documents it issues is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.

Supply

Copies of documents are available electronically, within Network Rail's organisation. Hard copies of this document may be available to Network Rail people on request to the relevant controlled publication distributor. Other organisations may obtain copies of this from an approved distributor.

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

Contents

1 Appendix 2: Program EPROM Lists	5
1.1 SSI4301	5
1.2 SSI4302	7
1.3 SSI4303	8
1.4 SSI4304	9
1.5 SSI4305	9
1.6 SSI4306	10
1.7 SSI4307	11
1.8 SSI4311	11
1.9 SSI4312	12
1.10 SSI4330	12
1.11 SSI4341 to SSI4346	13
1.12 SSI4351, SSI4352 & SSI4353	14
1.13 SSI436x & SSI437x	14
1.14 Miscellaneous Programs	15
2 Appendix 3: Data EPROM List	16
3 Appendix 4 : Recommended EPROMs	18
3.1 NMOS EPROMs for all Modules except MkALIII & MkWSIII	18
3.2 CMOS EPROMs for all Modules except MkALIII & MkWSIII	18
3.3 CMOS EPROMs for MkALIII & MkWSIII Modules	19
4 Appendix 5 : List Of Program Changes	20
4.1 SSI4301 Technician's Terminal	20
4.2 SSI4302 Panel Processor Module	22
4.3 SSI4303 Interlocking MPM Main Processor	23
4.4 SSI4304 Trackside Comms. Processor	25
4.5 SSI4305 Internal Comms. Processor	26
4.6 SSI4306 Diagnostics MPM Main Processor	26
4.7 SSI4307 Simulator MPM Main Processor	27
4.8 SSI4311 Signal Module	27
4.9 SSI4312 Points Module	27
4.10 SSI4330 Long Distance Terminal	27
4.11 SSI4351 DWS Interface Processor Bootstrap	27
4.12 SSI4352 DWS Panel Processor Bootstrap	28
4.13 SSI4353 DWS MPM Bootstrap	28

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

1 Appendix 2: Program EPROM Lists

For explanatory text see Chapter B Section 6. Where EPROM positions on printed circuit boards are indicated as ICxx in these tables, Bxx is an acceptable alternative.

1.1 SSI4301

PROGRAM	VITAL	EQUIPMENT	EPROM	POSITION	EPROM BASE ADDRESS	EPROM CHKSM.
REF.NO.& ISSUE	Y/N	& MARK	TYPE	ON PCB		
SSI4301-A (Issue E)	N	TT Mkl	2516 OR 2716	<u>MEM. BD.</u> U21 U19 U18 U16 U14 U13 U12 U11 U10 U9 <u>CPU BD.</u> XU36 XU48	2000 3000 3800 4000 5000 5800 6000 6800 7000 7800 F000 F800	FAFA 6CAE C851 D6CE F2BF 6312 655D 8EF1 3D72 A020 F6D7 8E5F
SSI4301-B4	N	TT Mkl	2516 OR 2716	<u>MEM. BD.</u> U21 U19 U18 U16 U14 U13 U12 U11 U10 U9 <u>CPU BD.</u> XU36 XU48	2000 3000 3800 4000 5000 5800 6000 6800 7000 7800 F000 F800	FAFA 3BF8 9492 A31E F000 619C 6FA5 4553 2419 8763 D999 5591
SSI4301-C5	N	TT MkII	* 27256 2732A	SC09 BD IC20 IC12	8000 F000	4014 9CD6
SSI4301-D4	N	TT MkII	* 27256 2732A	SC09 BD IC20 IC12	8000 F000	6F45 E10A
SSI4301-D5	N	TT MkII	#T 27256 2732A 27256	SC09 BD IC20 IC12 1021-1 BD IC14	8000 F000 8000	E490 48F4 3F88
SSI4301-D6	N	TT MkII	#T 27256 2732A	<u>SC09 BD</u> IC20 IC12 <u>1021-1 BD</u>	8000 F000	EA2B 674F
			27256	IC14	8000	72C7

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

SSI4301-D7	N	TT MkII	#T	<u>SC09 BD</u>		
			27256	IC20	8000	B49B
			2732A	IC12	F000	63A2
				<u>1021-1 BD</u>		
			27256	IC14	8000	FCA6

Notes:

- * Two EPROMs required on SC09 board, the 27256 containing program code at 8000-FFFF, and the 2732A containing program code at F000-FFFF. EPROM access time of 250ns or less required.

#T SSI4301-D5 and later use a paged memory configuration that utilises EPROMs on two circuit boards. Two EPROMs are required on SC09 board, the 27256 containing page 0 memory at 8000 to FFFF, and the 2732A containing common page memory at F000 to FFFF. One EPROM is required on GMT 1021-1 board, containing page 1 memory at 8000 to FFFF. EPROM access times of 250 ns or less are required.

... ..

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

1.2 SSI4302

PROGRAM REF.NO.& ISSUE	VITAL Y/N	EQUIP., MARK & APPLICN.	EPROM TYPE	POSITION ON PCB	EPROM BASE ADDRESS	EPROM CHKSM.
SSI4302-C	N	PPM MkI PANEL	2732A	IC8 IC7 IC6	D000 E000 F000	D1D5 AA4F 2027
SSI4302-D4	N	PPM MkI PANEL	2732A	IC8 IC7 IC6	D000 E000 F000	88BD 0876 44B2
SSI4302-D5	N	PPM MkI PANEL	2732A	IC8 IC7 IC6	D000 E000 F000	88BD 0899 4064
SSI4302-E1	N	PPM MkII PANEL	27256	MM-IC5 #	8000	01ED
SSI4302-E4	N	PPM MkII PANEL	27256	MM-IC5 #	8000	35B3
SSI4302-E5	N	PPM MkII PANEL	27256	MM-IC5 #	8000	338F
SSI4302-E7	N	PPM MkII PANEL	27256	MM-IC5 #	8000	1100
SSI4302-F4	N	PPM MkII IECC	27256	MM-IC5 #	8000	53B5

Notes:

GEC MMs only. WSL MMs use M3 instead of IC5.

www.networkrail.co.uk

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

1.3 SSI4303

PROGRAM REF.NO.& ISSUE	VITAL Y/N	EQUIP., MARK, APPL.& PROC.	EPROM TYPE	POSITION ON PCB	EPROM BASE ADDRESS	EPROM CHKSM.
SSI4303-A	Y	MPM Mk I I/L MnP	2732A	IC305 IC315 IC311 IC307 IC304	B000 C000 D000 E000 F000	16F7 6671 FC4F 4728 5511
SSI4303-B3	Y	MPM Mk I I/L MnP	2732A	IC305 IC315 IC311 IC307 IC304	B000 C000 D000 E000 F000	31AE 901C 331B 2CCC 1112
SSI4303-B4	Y	MPM Mk I I/L MnP	2732A	IC305 IC315 IC311 IC307 IC304	B000 C000 D000 E000 F000	31AE 8FBA 331D 2CCC 1112
SSI4303-C1	Y	MPM Mk II I/L MnP-S	27256	MM-IC5 #	8000	A673
SSI4303-C3	Y	MPM Mk II & IIA I/L MnP-S	27256	MM-IC5 #	8000	3126
SSI4303-C5	Y	MPM Mk II & IIA I/L MnP-S	27256	MM-IC5 #	8000	84BA
SSI4303-D2	Y	MPM Mk II & IIA I/L MnP-E	27256	MM-IC5 #	8000	C676
SSI4303-D3 %	Y	MPM Mk II & IIA I/L MnP-E	27256	MM-IC5 #	8000	CB00
SSI4303-D4	Y	MPM Mk II & IIA I/L MnP-E	27256	MM-IC5 #	8000	B300
AL4303-G2 #G	Y	MPM MkALIII I/L MnP2-E	27256 +	MM-IC5 #	8000	F400
WS4303-K1 #W	Y	MPM MkWSIII I/L MnP2-E	27256 @	MM-IC5	8000	2E00

Notes:

- # GEC MMs only. WSL MMs use M3 instead of IC5.
- % Use of this issue of program on Railtrack is on a restricted basis only, requiring specific approval
- #G Use of this program is restricted to ALSTOM MkALIII MM/MPMs and only when they are used in triplicate as I/L MPMs.
- #W Use of this program is restricted to WSL MkWSIII MM/MPMs and only when they are used in triplicate as I/L MPMs.
- + Use of this issue of program requires an EPROM with an access time of 120 ns or less and for it to be provided with a yellow label.
- @ Use of this issue of program requires an EPROM with an access time of 120 ns or less.

Ref:	SSI 8150D
Issue:	7
Date:	05/09/2015
Compliance date:	06/12/2015

1.4 SSI4304

PROGRAM REF.NO.& ISSUE	VITAL Y/N	EQUIP., MARK, APPL.& PROC.	EPROM TYPE	POSITION ON PCB	EPROM BASE ADDRESS	EPROM CHKSM.
SSI4304-A	Y	MPM MkI I/L TCP	2732A	IC102 IC106	F000	ADAD
SSI4304-A2	Y	MPM MkI I/L TCP	2732A	IC102 IC106	F000	A0B7
SSI4304-B2	Y	MPM MkI I/L TCP	2732A	IC102 IC106	F000	1505
SSI4304-C1	Y	MPM MkII ALL TCP	27256	IC102 # IC106 #	8000	7659
SSI4304-C3	Y	MPM MkII, IIA, MkALIII & MkWSIII ALL TCP	27256	IC102 # IC106 #	8000	0300
SSI4304-C4	Y	MPM MkII, IIA, MkALIII & MkWSIII ALL TCP	27256	IC102 # IC106 #	8000	1100

Notes:

- # GEC Modules only. WSL Modules use B45 and B33 instead of IC102 and IC106 respectively.

1.5 SSI4305

PROGRAM REF.NO.& ISSUE	VITAL Y/N	EQUIP., MARK, APPL.& PROC.	EPROM TYPE	POSITION ON PCB	EPROM BASE ADDRESS	EPROM CHKSM.
SSI4305-A2	Y	MPM MkI I/L ICP	2732A	IC110	8000	6800
SSI4305-B3	Y	MPM MkII I/L ICP	27256	IC110 #	8000	0C00
SSI4305-B5	Y	MPM MkII, IIA, MkALIII & MkWSIII I/L ICP	27256	IC110 #	8000	6300

Notes:

- # GEC Modules only. WSL Modules use B58 instead of IC110.