

Page 1 of 6	Effective from 21 01 2021	Document Title: Pre-installation Checklist for HBL STCAS –RIU (Remote Interface Unit)	SIF-0551	Version 1.0
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SIGNAL DIRECTORATE RESEARCH DESIGNS AND STANDARDS
ORGANISATION

MANAK NAGAR, LUCKNOW- 226011

Title: Pre-installation Checklist for HBL STCAS –RIU (Remote Interface Unit)

Line #	Issue	Version	Reason of Amendment
1	First	1.0	First issue

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RIU No:

RIU Equip. Sl. No:

Document/ Activity	Documents / Activity details	Status of Document (Railway document / Approved by TCAS)	Remarks (OK/Not OK)
Signaling and Interlocking Plan	Approved SIP.of the host station to which RIU is interfaced shall be available		
Selection Table. (TOC)	There shall not be any change in Selection Table Number		
RFID Tag Layout	RFID Tag layout shall be based on the approved SIP layout number and shall be approved by Railway		
RFID Tag Data	RFID Tag Data shall be approved by Railways.		
Station TCAS Table of Control	The modified stationary TCAS control table as per field inputs from RIUs shall be based on Selection Table as mentioned above. The date of the modified TCAS control table shall not be earlier than the date as indicated in the Selection Table of the Station		
RIU Relay wiring Circuit diagram	The updated Relay wiring circuit of RIU shall be approved. The RIU wiring diagrams shall be an integral part of station wiring sheets		
RIU Relays Contacts	RIU Relays spare contacts (front contact) available for relays wiring If spare contacts not available, proving relays shall be made available.		
RIU Power Supply Scheme drawing	RIU Power Supply Scheme drawing shall be approved.		
RIU Placement location	RIU Installation / Placement location drawing approved RIU placement location shall be very near to the existing Signaling location box in which the auto section field inputs are available (<5mtrs)		
RIU Connectivity	RIU Connectivity drawing with filed inputs and OFC links shall be approved		
RIU System Placement	RIU System location box drawings shall be approved.		
RIU system Inspected	RIU system shall be Inspected by DI/QA as per approved ATF		

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	document.		
RIU - OFC Connectivity	RIU - OFC Connectivity, OFC cable is arranged by Railtel / Telecom For OFC Connectivity fibre distribution module shall be made available		
RIU - Earth	It shall be ensured that adequate space is available near RIU for provision of Maintenance Free Earth for RIU		
RIU - Location Box	<p>RIU location box of Remote Interface unit shall have double walled with proper canopy & shall be approved by zonal Railway.</p> <p>The following shall be ensured</p> <ul style="list-style-type: none"> i. The foundation of Location boxes / Apparatus cases (single full size) shall be cast as per approved drawings. ii. The foundation work should not be done on loose earth. It should be installed on concrete foundation. iii. As far as possible, location box/apparatus case should be installed perpendicular to the track. Marking of the foundation shall be done at a place where minimum prescribed clearance from track is available when the location box has been installed and doors are open. iv. It should be preferably outside the track and close ahead of the signal post to facilitate maintenance, so that the aspect of the signal can be visible to the maintainer. v. The wiring and earthing required for use in the location box shall be drawn through the foundation using DWC pipes. vi. Proper curing of the foundation shall be done and adequate setting time shall be permitted before installing the location box / apparatus case on the foundation. vii. The depth of the foundation below the ground level shall be 50 (fifty) mm minimum and foundation bolt shall invariably be used. viii. Location boxes shall be erected vertically and plumb. 		

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	<p>ix. Location Boxes should be installed after applying bitumen at the bottom surface to avoid corrosion. The bitumen compound should be poured over bolts to achieve this purpose.</p> <p>x. Wooden plank used in Location box shall be of Teak Wood of suitable thick.</p>		
Tools required for installation of RIU	<p>Ensure that the following tools are available for installation of RIU</p> <ul style="list-style-type: none"> • 3½ Digit Digital Multimeter • 3½ Digit Clamp meter • Screw-driver set • Ring spanner set • D-spanner set • Allen key set • Soldering station • Hot-air gun • Cutting Plier • Pipe wrench • Microchip make PIC Kit-III • Laptop with required software for loading configuration data files into the VC modules of the stationary TCAS unit to which RIUs are connected. 		

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RIU System: Pre-Installation Checks (for RIU equipment)

Item No	Location	Task Description	Action taken/Range of Voltage levels	Equipment condition		Remarks (OK/Not OK)		
1.	RIU Equipment (Location Box)	Check the communication status of the RIU COM1 & RIU COM2 Modules	LEDs should be Glow/Blink	COM1	COM2	COM1	COM2	
			PWR LED					
			MHLT LED					
			WHLT LED					
			DATA1 LED					
			DATA2 LED					
			CH1/LINK1 LED					
			CH2/LINK2 LED					
			BMS LED					
			CNS LED					
2.		RIU – FSC Module	LEDs should be Glow/Blink	FSC1	FSC2	FSC1	FSC2	
			PWR LED					
			SCS LED					
			WHLT LED					
			ADC LED					
			MHLT LED					
3.		RIU – PS Module	LEDs should be Glow/Blink	PS1	PS2	PS1	PS2	
			PWR LED					
			CAN LED					
			ISO LED					
4.		Visually examine all PS, communication cables are tighten all the connections /Terminations / Wago terminals.	Ensure the tightness of the cables connectors.					
5.		Clean the TCAS equipment	Equipment shall be dust free					

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Item No	Location	Pre - Installation Checks	Action taken / Range of parameter levels	Equipment condition	Remarks (OK/Not OK)
6.	Earthing,	Measure the Resistance of the Earth.	Resistance Should be <2Ω(Ohm)		
7.	RIU Equipment and Relays LB	Check the Voltage levels at 230V AC Mains Input voltage to 24V DCDC modules	220V to 250V		
8.		Ensure Charger / DC-DC Modules indication should Glow.	LED Indications should glow. BATTERY CHARGER I/P ON BATTERY CHARGER O/P ON	BC 1 BC2 BC1 BC2	
9.		Check the Power voltages at Equipment End of Ch-A & Ch-B	The voltage shall be in the range of 22V to 26.5V		
10.		Relay coil voltage to checked in Tapping Relay	Shall be greater than >22 Volt (observations are detailed in Annexure-I)		
11.		Relay output voltage to checked in Tapping Relay	Shall be greater than >22 Volt (observations are detailed in Annexure-I)		
12.		The fitment of the RFID Tags in the RIU location.	RFID tags shall be firmly installed and as per location shown in the drawing.		
13.	RFID Tags	RFID Tags installed are programmed	RFID Tags program is verified		
14.		SPDs provided in RIU / LB	SPD provided at input of 230V AC supply		

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