

Ref. No.: ABB/4118/CLW/PE/0072

Date: 11 .01.2024

To,
Dy Chief Electrical Engineer,
Centre for Design & Development
Chittaranjan Locomotive Works
Chittaranjan - 713 331

Kind Attn: Shri Pankaj Kumar (Dy CEE/D&D/CLW)

Subject: Request for regular approval of ABB CDAC VCU SW V P7 – 1307 & G9 1602 & MVB coupler card firmware version -1.5 in all abb propulsion fleet.

Ref – CLW- Minutes of Reliability Meeting Held On 12.07.2023 at GM CLW Office

Dear Sir,

With respect to above reference continuous discussion during reliability Improvement meetings with improvements of CDAC VCU in Propulsion locos, we have address the issues of CAB redundancy in Software version P7 – 1307 & G9 1602.

Updated software version P7 – 1307 & G9 1602 is provided in P7 loco no – 37252 on dated 27.12.23 & G9 loco -32365 on dated – 30.12.23 and working satisfactory in line operation .

Attached Joint reported of SW v 1307 in P7 loco no – 37252 & SW V -1602 in G9 loco no – 32365 at ELS BNDM shed.

Based on the satisfactory performance of trial locomotive, we now request you to provide regular approval for use of Software package CDAC VCU software version 1307 & 1602 & MVB coupler card firmware version -1.5 in WAP7, WAG9 locomotives.

Thanking you and assuring you our best services always.

Yours Sincerely,
For ABB India Ltd.,



Mohit Sharma
Service Manager – Traction (India)
ABB India Limited.
Mob - + 91- 9686841604

Cc: Director Electrical, RDSO – For your kind information

Attachments: (1) Software release note Version P7-1307
(2) Software release note Version G9-1602
(3) MVB coupler card firmware version -1.5

ABB India Ltd

Postal Address
Survey No. 88/3, 88/4
Basavanahalli, Kasaba Hobli,
Nelamangala Taluk,
Bangalore-562123

Phone
+91 80 2294 6532

Fax
+91 80 2294 6560

Web address
www.abb.com/railway

Rolling Stock Software for WAP7 locomotives with CDAC VCU

Loco type	WAP7
Version No	FLG1& STB1-1307, FLG2& STB2-1307, HBB1-1306, HBB2- 1306
Date of release	02.09.2023
Description	Software for WAP7 for FLG redundancy
Version	Release Version

Major modifications in present release:

1. Hotel load Redundancy,
2. ZBAN switch was by passed in software,
3. ACP modification,
4. MBrakElecOK signal redundancy with life sign of HBB1 and STB1 taken,
5. Regenerative Braking effort made to 182kN from 176 kN

(Testing done at ELS RPM, Joint Note attached)

सं/No.M/RS/RPM/221/III/05/E8

दिनांक/Date 02.09.2023

CEE/Design/CLW/CRJ

(Kind Attn: Dy.CEE/D&D-I/CLW/CRJ)

Sub: Performance of Software Version 1307 of CDAC VCU - reg.

On 15.07.2023, the test version 1307 software of CDAC TCN VCU has been loaded in WAP-7 Loco no. 39067 at ELS/RPM. Functionality of the software was jointly checked with Mr.Arun Kumar, Scientist-E of CDAC and found all the features as mentioned in the attached joint note are working normal. Further 1307 version has been loaded in 4 more locomotives of ELS/RPM. All the five locomotives are working normal with 1307 version software for more than a month and the performance of 1307 version software is found satisfactory.

This is for your kind information


Naga Sreenivasu Rongala
Sr.DEE/RS/RPM

Copy To:

CELE/SR - for kind information

Rolling Stock Software for ABB based full propulsion/VCU for WAG9 locomotives with CDAC VCU

Loco type	WAG9
Propulsion/ VCU Manufacturer	ABB
Version No WAG9	FLG1 & STB1 -1602, FLG2 & STB2-1601 HBB1 –1600, HBB2-1600
Date of release	13.12.2023
Description	Software for WAG9 for full cab redundancy
Version	Release Version

Major modifications in present release:

1. Application software modification (ISaGRAF) for the processor FLG1 & STB1, FLG2 & STB2, HBB1 and HBB2 for achieving full redundancy operation
2. Firmware for Digital IO DSP is updated for CAB redundancy operation
3. Multi loco WTB software updation for WAG9 locomotives
4. Updation of ADMIN 1 and ADMIN 2 software for P1 and P2 message Pixy display update in case of isolation of HBB1 card.



MVB Coupler firmware Version 1.5 Release Note

File name: coupler_1.5.jic

References:

1. Test report from ELS Royapuram; (No.M/RS/RPM/221/III/10/21/E8, Dtd:18/11/2021)
2. Test report from ELS Erode; (No. SA/A/RS/ED Tech-43, Dtd:22.11.2021)
3. Field trial report from ELS Royapuram; (No.M/RS/RPM/221/III/10/21/E8,Dtd:7/12/2021)
4. Field trial report from ELS Erode; (No. SA/A/RS/ED Tech-43, Dtd:09.12.2021)

Release Note

Momentary change in some process data were observed during OFC redundancy testing on Coupler firmware version 1.4. Further, feedback on VCU disturbances reported from loco sheds were analyzed and concluded the possibility of MVB disturbances if any external subsystems send erroneous data beyond certain time limit. Hence the coupler software is modified as below;

1. Modified on MVB line switchover algorithm for enhanced TCN compatibility
2. Implemented erroneous data reception monitoring from external subsystems through OFC, which lasts for more than 1.4 ms

The test version "coupler_0.5.jic" was provided to ELS-RPM and ELS-ERODE. All the conditions were tested and field trial conducted at both sheds. Since the testing and field trial of "coupler_0.5.jic" was completed successfully, the firmware is released as "coupler_1.5.jic". All concerned are requested to use the firmware in CDAC-VCUs.

Date :20/12/2021



Ajeesh A
Joint Director
Power Electronics Group
CDAC – Thiruvananthapuram

Joint Note of software version 1307 for WAP7 VCU (M/s ABB, CDAC) locomotive

Ref. No- ABB/4118/BNDM/SER/PE2/064 dated- 13.12.23

Vide the letter under reference, loco number 37252 was offered to representative of M/s ABB for updating software version 1307 in application processor cards and firmware version 1.5 in MVB coupler card on 24.12.23. For cab redundancy the loco cable modification was carried out following the RDSO modification sheet no.- RDSO/2014/EL/MS/429, Rev.'0' Dated 26.02.14. Software version showing on the DDU before and after uploading of software is tabulated below.

Card name	Old Software version	New software version
FLG1	113	1307
FLG2	113	1307
STB1	113	1307
STB2	113	1307
HBB1	113	1306
HBB2	113	1306

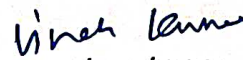
Redundancy function of various Application processor cards like FLG1/STB1 (VCU1 'G' Slot), HBB1/DDA1 (VCU1 'S' Slot), FLG2/STB2 (VCU2 'G' Slot) & HBB2/DDA2 (VCU2 'S' Slot) were checked and found to be normal i.e. in case of failure of any card loco operation from respective cab is still possible. Normal testing of loco was carried out and no any abnormality was noticed. VCU was given fit on 27.12.23 by the representative of M/s ABB with 1st trip accompany for passenger service. Loco was accompanied from ROU to BXF and back to ROU on 29.12.23 and no any abnormality was experienced during this period.



Rajesh Pradhan
Representative of M/s- ABB



P.K.Dash
SSE/TRS/ELBM


ADEE/TRS/ELBM

South Eastern Railway
Electric Loco Shed: Bondamunda

Date-09.01.2024

Joint Note of software version 1600 for WAG9 VCU (M/s ABB, CDAC) locomotive

Ref. No- ABB/4118/BNDM/SER/PE2/064 dated- 13.12.23

Vide the letter under reference, loco number 32365 was offered to representative of M/s ABB for updating software version 1600 in application processor cards and firmware version 1.5 in MVB coupler card on 19.12.23. For cab redundancy the loco cable modification was carried out following the CLW schematic for partial cab redundancy dated 14.12.17. Software version showing on the DDU before and after uploading of software is tabulated below.

Card name	Old Software version	New software version
FLG1	2008	1602
FLG2	2008	1601
STB1	2008	1602
STB2	2008	1601
HBB1	2008	1600
HBB2	2008	1600

Redundancy function of various Application processor cards like FLG1/STB1 (VCU1 'G' Slot), HBB1/DDA1 (VCU1 'S' Slot), FLG2/STB2 (VCU2 'G' Slot) & HBB2/DDA2 (VCU2 'S' Slot) were checked and found to be normal i.e. in case of failure of any card loco operation from respective cab is still possible. Normal testing and MU testing with loco no 31846 was carried out and no any abnormality was noticed. VCU was given fit on 30.12.23 by the representative of M/s ABB.



Rajesh Pradhan
Representative of M/s- ABB



P.K.Dash
SSE/TRS/ELBM


ADEE/TRS/ELBM