

DCN Next Generation 4.10 Release Notes



en | Release Notes

DCN Next Generation Release 4.10

Table of Contents

1	This release Contains	2
2	Improved and added Functionality	3
3	Release Compatibility Restrictions.....	7
4	Software, Firmware & FPGA versions	8
5	Additional Information to the DCN Manuals and Help Files	10
6	Additional Information to the Integrus Manual	17
7	Trouble Shootings and known issues	19
8	Appendix: Guaranteed Rectangular Footprints.....	25

1 This release Contains

The following versions are part of this release:

Product	version
DCN-SW	4.10
DCN-SWSMV	4.10
DCN-SWSACC	4.10
DCN-SWWA	1.01
DCN-DLT (CCU2)	4.10
DCN-CCU2	4.10
HdCameraControl	4.10
DCN-DLT (CCU, NCO)	3.10
DCN-CCU	3.10

2 Improved and added Functionality

Release	Release Date	Release Comments
4.10	2013-04-17	<p>Improvements Additions</p> <ul style="list-style-type: none"> • Start/Stop Meeting and Session and Microphone Management control via API (DCN-SWAPI) including demonstrator application with source code. • Control of the IDesk outgoing channel using DCN Operator Application (requires DCN-SWSI license). • DCN-SW font colour below icons on layout can be changed. • DCN-SW Meeting can be copied (including all settings) using Configuration Application and API. • Demonstrator application including source code for DCN-SWSMD XML streaming meeting data. • HD Camera Control via DCN-SWSMD streaming meeting data. • DCN-SW added Czech language to the GUI. Czech language has to be copied manually, please refer to the Tools\Language\ directory. • Extended the explanation about the TCP connection in Open Interface description. • DCN-SWWA Webcast application added. Only English Userface. Only audio-channel/language only. <p>Fixes</p> <ul style="list-style-type: none"> • DCN-SWSMD information regarding microphone on off. • DCN-SWSMD information empty when session name and description are identical. • Stopping an Operator-control session does not clear request list. • DCN-MR wave form and audio sometimes not in sync. • DCN-SW not all GUI texts fit. • DCN-SWSMV Reset microphone sensitivity ALL MICROPHONES. • DCN-CCU2 can cause acoustic feedback when powered up in Insertion mode. • DCN-SW added Slovenian language to GUI. Made Japanese helpfile part of the installer. Added Thai, Polish and Finnish language to the installer. • DCN-SWSMD Participant is made absent when Chairman speaks in Operator with response mode. • Quorum shows strange behaviour with ID-cards and Secret voting. • Performance and stability improvements on DCN SW Server and Operator Control • Delegate names are not shown in speakerlist when using access control for voting only.
4.03	2012-07-15	<p>Fixes</p> <ul style="list-style-type: none"> • DCN-SW Operator Application can cause a fault pop up upon user login and start session. • DCN-SW Configurator Application can cause a fault pop up when a document will be inserted with a file name that is too long. • DCN-SW Printing Application will not start up in Spanish, Catalan, Portuguese and Polish.
4.02	2012-04-16	<p>Fixes</p> <ul style="list-style-type: none"> • Inserting or withdrawing of ID-cards could lead to fault pop up.

Release	Release Date	Release Comments
4.01	2012-03-01	Fixes <ul style="list-style-type: none"> Auto-relay is always activated when the B-output channel is selected (Using DCN-SW with DCN-SWSI).
4.00	2011-12-02	<ul style="list-style-type: none"> DCN-CCU2 replaces DCN-CCU, DCN-WCCU and DCN-NCO DCN-CCUB2 replaces DCN-CCUB
3.10	2011-07-26	<p>Additions</p> <ul style="list-style-type: none"> Simultaneous Interpretation DCN-SWSI added Usher call and speak slowly requests support DCN-SWMD DCN-SW GUI languages: de, ca, en, es, fr, hu, it, jp, ko, lt, nl, no, pt, ru, sv, zh-chs DCN-SW help files languages: de, en, es, fr, it, nl, zh-chs <p>Improvements</p> <ul style="list-style-type: none"> Seat assignment and seat definition improved DCN-SWSACC indicates when DCN-SWSACC licenses is missing.
3.03 V2	2011-01-12	Fixes <ul style="list-style-type: none"> DCN-SWSACC upload does not work
3.03	2010-11-12	Fixes <ul style="list-style-type: none"> DCN-SWSMD does not always send individual voting and group results <p>Improvements</p> <ul style="list-style-type: none"> The DCN-SW print application can be used on a client PC. (see chapter 4 how to setup)
3.01	2010-07-01	Fixes <ul style="list-style-type: none"> Vote result view translated to local languages Microphone cannot be controlled from the synoptic layout in operator with request list microphone mode Update of Spanish translation in LBB4190 and DCN-CON
3.00	2010-05-26	<p>Improvements Additions</p> <ul style="list-style-type: none"> DCN-SWSACC Standalone Automatic Camera Control which replaces LBB 4162/00 All DCN applications (LBB4190 excluded) are Windows 7 and Windows Vista compatible (Home Premium and above both 32 and 64 bits). LBB 4190 is compatible with XP Professional 32 bits version only. Japanese and Dutch GUI language added to DCN-MR Norwegian GUI language added to DCN-SW <p>Fixes</p> <ul style="list-style-type: none"> Lithuanian GUI language added to DCN-SW Vote result printout translated to local languages Maximum number of Open microphone in France GUI language cannot be set to 3 and 4 DCN-IDEK startup behavior is improved. DCN-SWSMD The Participant container in Discussion Activity type SpecialEquipmentListUpdated contains Participant data in stead of seat data.
2.82	2010-01-26	<p>Improvements and additions</p> <ul style="list-style-type: none"> Improved updating of Interpreter's Booth Desk settings in the Open Interface DCN calculation V5.04 update <p>Fixes</p> <ul style="list-style-type: none"> Auto-relay may not operate as expected when B output toggle is activated in LBB 4172/00

Release	Release Date	Release Comments
2.81	2009-11-20	<p>Improvements and additions</p> <ul style="list-style-type: none"> New background images are added to the DVD for use in DCN-SW and DCN-SWSMV <p>Fixes</p> <ul style="list-style-type: none"> LBB 4172/00 does not work in all languages except English Location of texts “Speakers” and “Requests” on Concentus display are fixed for Simplified Chinese. DCN-IDEK sometimes shows a loudspeaker symbol before the quality indicators after leaving the installation menu. (solved in DCN-IDEK with SW $\geq 1.41.xxxx$)
2.80	2009-10-19	<p>Improvements and additions</p> <ul style="list-style-type: none"> Support for DCN-IDENC in LBB 4181 B toggle (2nd B output) on interpreter desk (only supported for DCN-IDEK SW $\geq 1.40.xxxx$). Channel overview on DCN-IDEK automatically returns after 1 second when switching on the microphone. Catalan GUI language added to DCN-SW The state (enabled or disabled) of Audio Expanders audio inputs are restored after configuration changes Participantupdate activity is send after start and stop meeting in the DCN-SWSMD xml stream. <p>Fixes</p> <ul style="list-style-type: none"> The audio routing of the system might not work due to optical network disturbances. Hyperlink to driver for DCN-IDENC fixed <p>DCN MR</p> <ul style="list-style-type: none"> Recording uses the default windows recording settings. Recording input level is not automatically set to 100%. Improvement of foot pedal activation. DCN-MR restarts automatically after changing the user interface language.
2.70	2009-07-17	<p>Improvements and additions</p> <ul style="list-style-type: none"> DCN-SWIND Individual Channels. DCN-SW supports Multi-CCU up to 1500 seats. DCN-SW GUI Languages: JP, KO, TH, ZH-s. DCN-SW is extended with: <ul style="list-style-type: none"> DCN-SWAT Conference Software Attendance and Access DCN-SWID Conference Software ID Card Encoding DCN-SWAPI Conference Software API DCN-SWSMD Conference Softw. Streaming Meeting Data Major improvements of the stability of the optical network. <p>Fixes</p> <ul style="list-style-type: none"> Speech timers do not continue after the chairman has stopped speaking. Synoptic view in LBB4171/00 shows several red crosses after restarting the CCU. External contact cannot be defined in non English versions of LBB 4175/00. Unknow hardware errors in LBB 4190/00 software log file. DCN-SW in Russian language reports an error in the Seats view.
2.68	2009-05-06	<p>Fixes</p> <ul style="list-style-type: none"> The system becomes instable after several start stop meeting actions. Integrus transmitter to much noise in channels 4, 5, 6 and 7 in Premium Stereo mode.

Release	Release Date	Release Comments
2.67	2009-04-01	<ul style="list-style-type: none"> Added GUI language in DCN-SW DE, FI, FR, IT, NL, RU, SE. DCN-SW delegate view. Concentus language selection synchronized with CCU. Fix DCN-SMSMV vote application does not work in Russian language. Improvement LBB 4180/00 delegate group selection. Improved of NCO communication and camera control. Improvement Open interface assign Interpreter desks. DCN-MR GUI language added: ES, FR, IT, KO, PT, RU, TH and ZH.
2.64	2008-12-15	<ul style="list-style-type: none"> Improved audio quality on delegate units headphones. DE, ES, FR, IT, JA, KO, PT, RU, TH and ZH version of DCN-MR manuals.
2.63	2008-11-27	<ul style="list-style-type: none"> Improvement of Integrus transmitter startup behavior. Automatic standby of Integrus transmitter removed.
2.62	2008-10-28	<ul style="list-style-type: none"> Added option to disable assignment of a new address when pressing the button of a unit with a double address (dipswitch S600-2 of CCU). The default voting representation in Video Client is changed to Yes, No, Abstain and DNPV. Upgraded performance of Voice Activation algorithm. Solved occasional problems with start up of Integrus transmitter. DCN-MR added.
2.60	2008-08-06	<ul style="list-style-type: none"> Support for DCN-SW. DCN-MR added.
2.56	2008-04-08	<ul style="list-style-type: none"> Improvement of Multi CCU. Improvement of Multi PC (LBB4189). Improvement of behavior of an Integrus transmitter when connected to a DCN Next Generation or DCN wireless system.
2.55	2008-03-31	<ul style="list-style-type: none"> DDE data not correct when seat or card-code are empty in the database
2.54	2008-03-10	<ul style="list-style-type: none"> Notification of speak slow button release fixed
2.53	2008-03-03	<ul style="list-style-type: none"> Improvement of Video Client (LBB4184) - in certain circumstances when video client was used, the voting results disappeared.
2.52	2008-02-22	<ul style="list-style-type: none"> Improvement of CCU. In single CCU mode, the "No NCO" message will not appear anymore.
2.51	2008-01-28	<ul style="list-style-type: none"> The maximum number of devices that you can connect to the optical network of the central control unit is increased to 18. Insertion mode is changed and has now only effect on the delegate loudspeakers and interpreter floor channel. PA output signal is excluded from the insertion mode. A noise gate is added to the insertion and mix minus mode.
2.50	2007-12-17	<ul style="list-style-type: none"> Available via Open Interface: <ul style="list-style-type: none"> - Booth desk configuration - De-init CRC-check default on for ID-Cards Channel quality overview in DCN-IDESK Improved representation and print outs for voting in combination with attendance/quorum Bugs solved, amongst others: <ul style="list-style-type: none"> - reduced chance of the message "No NCO" - switch off of DCN trunks in case audio expander is reset to defaults

Release	Release Date	Release Comments
2.41	2007-08-01	<ul style="list-style-type: none"> • Downloading improved for DCN-CCUB • DCN-DLT bug solved for non English operating systems
2.40	2007-06-20	<ul style="list-style-type: none"> • Support for Multi CCU applications. • Improvements: <ul style="list-style-type: none"> - voting print results improved - muting of the floor
2.12	2006-02-05	<ul style="list-style-type: none"> • System bug solved: At room temperature higher than 25 degree's system reboot may not work properly. • Concentus bug solved: Audio may contain hearable ticks.
2.10	2005-10-10	<ul style="list-style-type: none"> • Support for new Discussion units, Cobranet Interface and Digital Audio expander. • System bug solved: system reset of units after connecting new units to a trunk
2.01	2005-05-30	<ul style="list-style-type: none"> • Multi PC improved • CCU: solved bug. The display shows 'starting' and the navigation doesn't work. • Control PC bug solved. After deleting two or more consecutive records from delegate database, individual voting results may not be correct (This did not affect total results.)
2.00	2005-03-03	<ul style="list-style-type: none"> • Concentus and Flush mounted units added. • Software function added: Microphone Management, Synoptic Control, Intercom, Parliamentary Voting, Multi Voting, Attendance Registration, Delegate Database, ID cared encoder, Message Distribution, Text/Status Display, Video Display, Camera Control and Standalone Camera Control.
1.12	2004-12-10	<ul style="list-style-type: none"> • Interpreter desk: solved bug in audio switching from pre-select to floor
1.11	2004-07-23	<ul style="list-style-type: none"> • Interpreter desk: solved bug in audio switching behavior of pre-selects (incoming channels)
1.10	2004-06-25	<ul style="list-style-type: none"> • Audio Expander: increased output range to 30 dB • Interpreter desk: <ul style="list-style-type: none"> – improved response time of actions related with microphone button – default outgoing B is equal to outgoing A • Open Interface: compatibility restored with previous versions of Open Interface.
1.00	2004-06-15	<ul style="list-style-type: none"> • Initial version

3 Release Compatibility Restrictions

The following versions are incompatible with this release:

Product	Hw	FPGA	SW	FW
DCN-CCU2		na	na	<4.10
DCN-CCU		<1.07	--	<3.10
DCN-CCU in multi CCU mode	<5.0	<2.17		--
DCN-NCO				
LBB 4120/00 Interpreter desk		<1.2	--	--
Toggle in DCN-IDESK			<1.40.xxxx	

The following applications are compatible with this release:

Product	Hw	FPGA	SW	FW
DCN-SW		4.00.3959	4.10	4.10.4806
DCN-SWSMV			4.10	
DCN-SWSACC			4.10	
DCN-MR			2.0	

Product	Hw	FPGA	SW	FW
Download and License Tool			4.10	
DCN-SWWA			1.01	
HdCameraControl			4.10	
Optical devices				5.02

DCN-SWSMV: exporting voting results to PowerPoint is only supported for PowerPoint 2003.
DCN-SWWA requires DCN-CCU(B)2.

Wireless Units:

New firmware is developed for the DCN Wireless units to operate with the DCN-CCU2 (e.g. encryption functionality). This firmware can be uploaded using the Download and License Tool (DLT) and the Upgrade Toolkit (DCN-UPTK). This firmware works with DCN-CCU2 and DCN-WCCU.

Products with the following hardware version have already this firmware installed.

Product	Hw
DCN-WD-D	02/04
DCN-WDD-D	02/04
DCN-WDV-D	02/04
DCN-WDCS-D	02/05
DCN-WDDCS-D	02/05
DCN-WDVCS-D	02/05

4 Software, Firmware & FPGA versions

The table below provides a versions overview of parts which cannot be downloaded using the Download and License Tool or the DCN-UPTK Wireless upgrade Tool kit.
Please contact your local Bosch representative how to update these parts.

The HW column indicates if the Hardware Version of the product is supported for the listed parts.

For product which cannot show the FPGA version, the HW version belonging to the FPGA version is shown between brackets after the FPGA version.

DCN-CCU & DCN-WCCU

FPGA	HW	Fixes
2.23	≥ 4.0	Slow reacting Multi CCU system
2.22	≥ 4.0	Noise or no audio on delegate loudspeaker
2.20	≥ 4.0	Unstable system after start-up due to optical network disturbances
2.19	≥ 4.0	Noise on delegate loudspeaker
2.18	≥ 4.0	Unexpected beeps on delegate loudspeaker fixed

DCN-CCUB

FPGA	HW	Fixes
1.22	≥ 1.0	Noise or no audio on delegate loudspeaker
1.09	≥ 1.0	Noise on delegate loudspeaker
1.08	≥ 1.0	Unexpected beeps on delegate loudspeaker

DCN-CONxx range

FPGA	HW	Fixes / Additions
1.17 (hw1.12)	≥ 1.0	Address might be lost after system restart
1.14 (hw1.10)	≥ 1.0	11Khz noise
SW		
1.10.xxxx (hw1.13)	≥ 1.0	CRC check added for ID-cards

DCN-DDI

FPGA	HW	Fixes / Additions
2.2 (hw02.01)	≥ 1.0	11Khz noise
2.0 (hw02.00)	≥ 1.0	CRC check added for ID-cards

DCN-DIS range

FPGA	HW	Problem fixed
1.20 (hw02.06)	≥ 1.0	11Khz noise
1.18 (hw02.03)	≥ 1.0	Disturbed audio on headphones for channels > 28 Address might be lost after system restart
1.15	≥ 1.0	Channel auto increment equal to DCN-CON
1.13 (hw02.02)	≥ 1.0	Audio distorted on headphones

DCN-FCS

FPGA	HW	Fixes
2.7 (hw02.02)	≥ 2.0	11Khz noise

DCN-IDESK

FPGA	HW	Fixes / Additions
2.1	≥ 2.0	11Khz noise
SW		
1.41.xxxx	≥ 1.0	loudspeaker symbol might be shown in front of the quality indicator after leaving the Idesk's installation menu
1.40.xxxx	≥ 1.0	B Toggle added

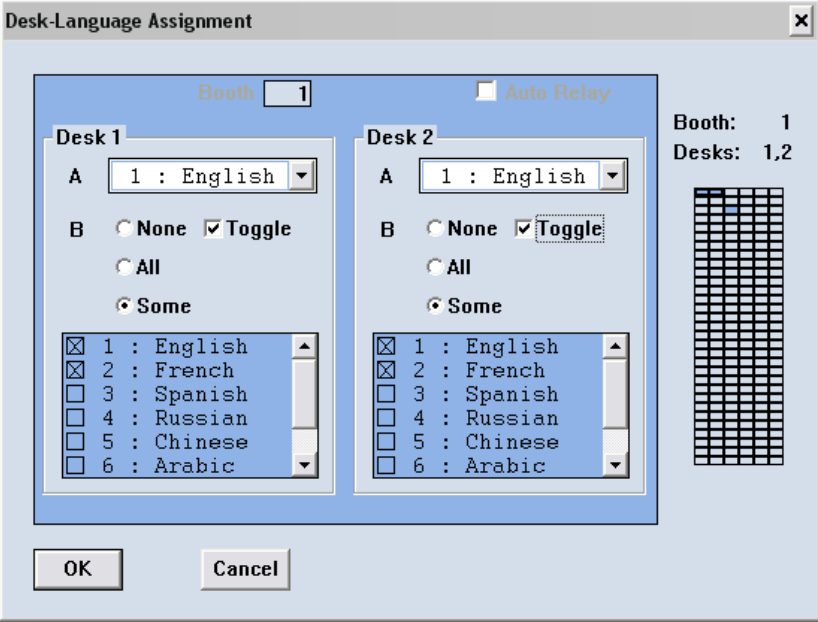
INT-TX Range

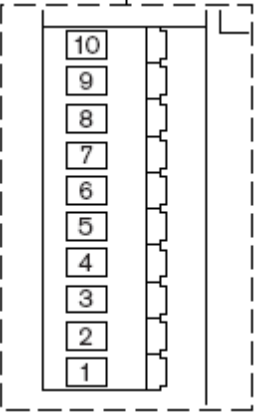
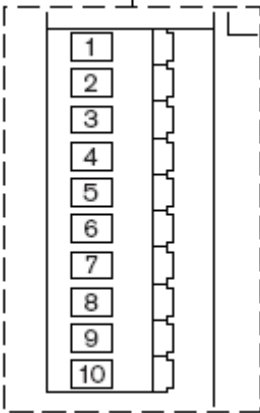
FPGA	HW	Fixes / Additions
02.03	≥ 1.0	The display might show unexpected characters
02.02	≥ 1.0	Improved stability when used in combination with the DCN system
02.01	≥ 1.0	Improved stability when used in combination with the DCN system
02.00	≥ 1.0	Initial version

5 Additional Information to the DCN Manuals and Help Files

Reference	What
<p>DCN-CCU2 in Insertion Mode</p>	<p>Figure 3.5 DCN-CCU2 in Insertion Mode in the IUI_DCN is not correct, it should be as depicted below:</p> <p>Legends</p> <ul style="list-style-type: none"> C Contribution D Delegate I Interpretation O Optical network T Chime
<p>Wireless Discussion Units</p>	<p>Wireless Discussion Units which are produced before 2012 need to be upgraded using the DCN-UPTK and DLT (4.xx) in order to operate with a DCN-CCU2.</p>

Reference	What
DCN-SW Print Application	<p>To print voting results from a client PC the following changes need to be made:</p> <p>On the PC running the DCN-SW Server: Share the folder as Export</p> <ul style="list-style-type: none"> • FOR XP share folder: "C:\Documents and Settings\All Users\Application Data\Bosch\DCN Conference Software\<V#>\Export" • FOR Vista/Windows 7 share folder: "C:\ProgramData\Bosch\DCN Conference Software\<V#>\Export" <p>On the client:</p> <ul style="list-style-type: none"> • First check if the client can access the share you defined on the PC running the DCN-SW server. Consult your local IT department in case of any problems. • Install the Print Application on the client. • Stop the Print Application Select "Exit" from the Print Application notification icon. • Go to directory "C:\Program Files\Bosch\Digital Congress Network\DCN-SW" • Open file MeetingAnalyser.exe.config • Look for: <pre><setting name="ExportFolder" serializeAs="String"> <value>Export</value> </setting></pre> • Change into: <pre><setting name="ExportFolder" serializeAs="String"> <value>\\[SERVER]\Export</value> </setting></pre> • where [SERVER] is the Computer name or IP-address of the PC running the DCN-SW server. • Safe the files (possible it's needed to copy the documents directory and back to Vista/Win 7) • Restart the application
DCN-SW	<p>The Agenda in DCN-SW can contain a maximum of 255 characters.</p>

Reference	What
<p>LBB 4172/00 (IN_en.pdf) Page 11. Assigning languages to output B</p>	<p>B toggle (2nd B output) on Interpreter desk).</p> <p>The B toggle function on the interpreter desk can be enabled by using software module LBB 4172/00 (only supported for DCN-IDESK SW ≥ 1.40.xxxx).</p> <ul style="list-style-type: none"> Select at least two languages for the B-output and check Toggle.  <ul style="list-style-type: none"> When the B toggle is enabled the interpreter can toggle output B by pressing the B button. The preset of the B output can be changed by press and hold the B-output button and turn the rotary. Changing the preset can only be done when the microphone is switched off. <p>Note: The software setting is stored in the CCU so the toggle function is still available when the PC is shutdown and after a CCU shutdown.</p> <p>Note: When the B output is changed using interpreter desk menu h the Toggle function is disabled and needs to be enabled using LBB 4172/00.</p>

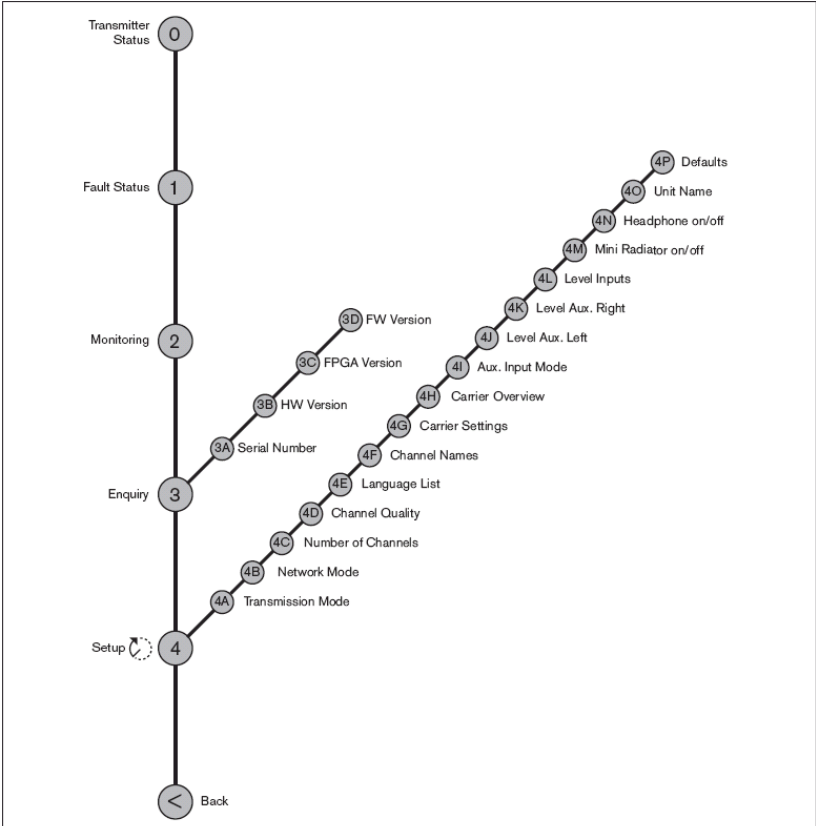
Reference	What
<p>DCN NG IUI Figure 34.3 Internal settings</p>	<p>Numbering of connector block DCN-EPS is the other way around</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Correct</p>  </div> <div style="text-align: center;"> <p>Wrong</p>  </div> </div>
<p>DCN-CCU Paragraph 8.3.2</p>	<p>Dipswitch S-600-2 S600-2 is enabled:</p> <ul style="list-style-type: none"> • When the uplink is broken (The unit “thinks” it has a double address): <ul style="list-style-type: none"> • the red microphone indicator ring of the unit will blink with 2Hz • the unit will not removes its address and keeps it current address • the Red led stops blinking if the uplink connection is restored • When unit does not have an address (unit is de-init): <ul style="list-style-type: none"> • Pressing the mic button will get the unit a new address <p>S600-2 is disabled:</p> <ul style="list-style-type: none"> • When the uplink is broken (The unit “thinks” it has a double address): <ul style="list-style-type: none"> • the red microphone indicator ring of the unit will illuminate • the unit removes its address when the mic. button is pressed. All LEDs will be illuminated • the unit will get a new address when pressing the mic. button but only if the Uplink connection is restored • When unit does not have an address (unit is de-init): <ul style="list-style-type: none"> • Pressing the mic button will get the unit a new address
<p>DCN-MIC*, DCN-DISS-*, DCN-DISL-* Microphones</p>	<ul style="list-style-type: none"> • Avoid damage to microphone goosenecks • For the microphones it must be avoided to bend the gooseneck more than 90 degrees or to rotate a (bended) gooseneck. This will cause damage to the windings of the gooseneck.
<p>DCN NG IUI Paragraph 33.4.4</p>	<p>Contact rating (booth-on-air contact) 24 Vdc/ 1A potential free contact</p>
<p>DCN NG IUI Paragraph 27.6</p>	<p>Earth loop risk using external sockets When using external sockets of DCN-FCS make sure that all connections are electrically floating. In case any connections are part of an earth loop unexpected system behavior can occur. The same is also valid for DCN-CON, DCN-DIS and DCN-IDESK, DCN-FV</p>
<p>DCN NG IUI Paragraph 8.3.2</p>	<p>Unit address assignment Switch S600-2 On Assignment unit address is disabled Off Assignment unit address is enabled</p>
<p>DCN NG IUI Chapter 49</p>	<p>Cards are not conform ISO 7816 Cards are not conform ISO 7816 1 -2, despite the fact that is mentioned in the manual that the cards are conform.</p>

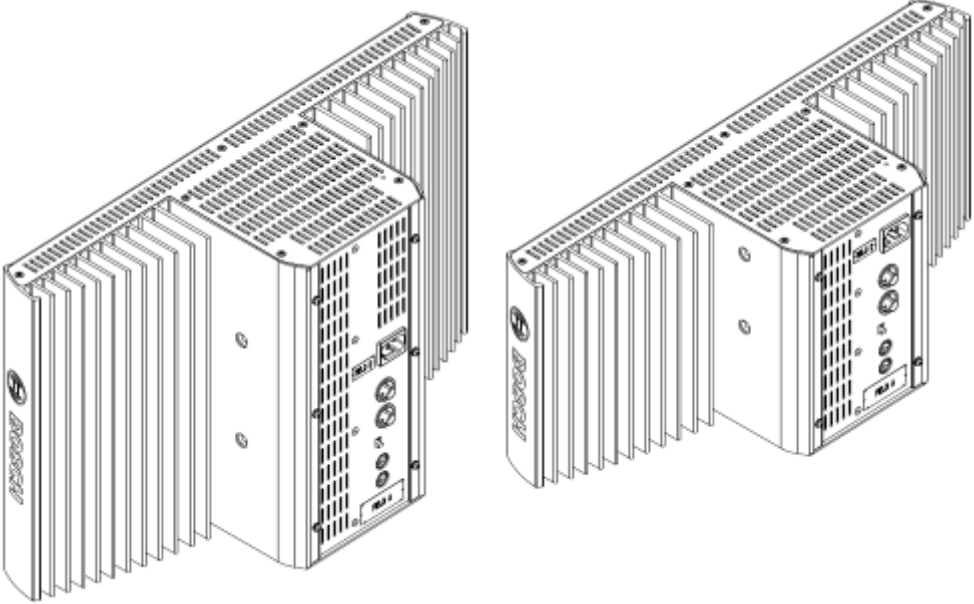
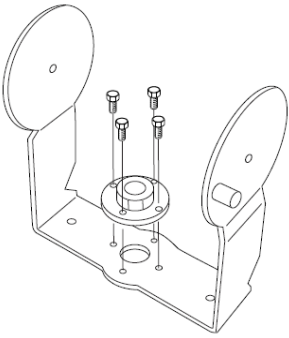
Reference	What
Quick Reference Card DCN-IDEK	<p>Channel Quality Overview Push the message button in order to get the channel quality overview.</p> <p>Push again the message button in order to get back the original overview. Pushing any other button, will also return the original overview on the screen.</p> <p>When the interpreter desk received a message, the message button needs to be pushed twice in order to get the channel quality overview.</p>
LBB4180/00 Delegate database manual	<p>CRC check of ID-cards As from release 2.50 the code written on the ID-card is included a CRC check. This CRC check is only support in DCN-CONFF and DCN-CONCM FW \geq 1.10 and DCN-DDI hardware version \geq 2.0. To write a code without CRC-check the following setting must be changed in the DCNNG.INI file: [Database] UseCrInCard=No</p>
Integrus IUI Paragraph 2.4	<p>Added menu 4B Network mode Menu 4B (Network mode) has been added. Options:</p> <ul style="list-style-type: none"> • Standalone – use this when the transmitter is not used in combination with DCN Next Generation or DCN wireless. • Enabled – use this when the transmitter is used in combination with DCN Next Generation or DCN wireless. <p>In case ‘standalone’ is selected and the transmitter is connected to a DCN Next Generation or DCN wireless system, the audio in the system can be disrupted.</p> <p>In case ‘enabled’ is selected, while no DCN Next Generation or DCN wireless system is connected, the transmitter will show the fault status “Network Error”.</p>
DCN NG IUI Paragraph 2.3	<p>Number of optical devices The maximum number of devices that you can connect to the optical network of the central control unit is 18.</p>
DCN NG IUI Paragraph 2.5.3.1	<p>Power supply introduction 2.5.3.1 Introduction The devices that supply power to the optical network are:</p> <ul style="list-style-type: none"> • in a single CCU system: the central control unit • in a multi CCU system: the network controller • external power supply connected via a LBB 4410/00 Network Splitter (refer to chapter 41) or LBB4414/10 Fiber Interface (refer to chapter 42)
DCN NG IUI Paragraph 2.5.3.2	<p>Power supply in a single CCU system 2.5.2 Single CCU system In a single CCU system, the central control unit supplies power to the optical network. The central control unit supplies power to:</p> <ul style="list-style-type: none"> • the optical network • the DCN sockets • For an overview of the maximum power that the central control unit can supply refer to figure 2.1. • You must install external power supplies in the optical network, in case: • more power is necessary in the optical network • a glass optical fiber is used to connect a remote audio expanders or transmitter

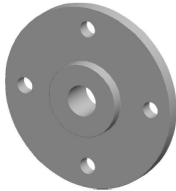
Reference	What												
DCN NG IUI Paragraph 2.5.3.3	<p>Power supply in a multi CCU system 2.5.3.3 Multi CCU system In a multi CCU system, the network controller supplies the power to the optical network. The DCN-CCUs then only supply power to the DCN sockets and not the optical network.</p> <p>The maximum power that each of the optical network sockets of the network controller can supply is 55 W.</p> <ul style="list-style-type: none"> • You must install external power supplies in the optical network, in case: • more power is necessary in the optical network • a glass optical fibre is used 												
DCN NG IUI Paragraph 8.6 and 10.4	<p>Downloading Switch the CCUs to “single” mode and change the slave id to “—“ before downloading (refer to menu 7I Multi Mode).</p>												
DCN NG IUI Paragraph 8.8.2.4	<p>Insertion Insertion mode is changed and has now only effect on the delegate loudspeakers and interpreter floor channel. PA output signal is excluded from the insertion mode. Connect sound processing equipment for PA loudspeakers to output 2. A noise gate is added on the input signal.</p>												
DCN NG IUI Paragraph 8.8.2.5	<p>Mix Minus A noise gate is added on the input signal.</p>												
DCN NG IUI Paragraph 8.8.2.6	<p>Local Floor Audio output 2 should be audio output 4.</p>												
DCN NG IUI Paragraph 10.3.2	<p>DCN-NCO Ground default connected The ground is default connected. When the ground is disconnected, crosstalk can occur on the floor in case an Allegiant Video Switcher is connected to the RS232 port of the DCN-NCO. Note: When the system ground is connected to more than one device in the system, you can create ground loops, which can cause hum. Take care that only the ground of the other devices in the system are not connected. Or alternatively – when no Allegiant Video Switcher is used- disconnect the ground of the DCN-NCO.</p>												
DCN NG IUI 10.10.4	<p>Pop-up message The NCO reports CCU Missing when the Slave ID of a CCU is changed.</p>												
DCN-SWSMV	<p>DCN-SWSMV supports Windows 2000, Windows XP Professional 32 & 64 bits and Windows Vista Home Premium and above 32 & 64 bits.</p>												
DCN-SWSMV	<p>Showing voting results in PowerPoint In case PowerPoint is used to show the voting result, it might happen that PowerPoint starts and overlaps the user interface of DCN-SWSMV completely. Use the Windows task bar to select DCN-SWSMV again.</p>												
DCN-SWSMV	<p>Vote result printout without Bosch Logo When a vote results is need without the Bosch logo 4 files need to be renamed:</p> <table> <tr> <td><i>VotingReport.rpt</i></td> <td>into</td> <td><i>VotingReportAll.bak</i></td> </tr> <tr> <td><i>VotingReportIndividual.rpt</i></td> <td>into</td> <td><i>VotingReportIndividual.rpt.bak</i></td> </tr> <tr> <td><i>VotingReportNoLogo.rpt</i></td> <td>into</td> <td><i>VotingReport.rpt</i></td> </tr> <tr> <td><i>VotingReportIndividualNoLogo.rpt</i></td> <td>into</td> <td><i>VotingReportIndividual.rpt</i></td> </tr> </table>	<i>VotingReport.rpt</i>	into	<i>VotingReportAll.bak</i>	<i>VotingReportIndividual.rpt</i>	into	<i>VotingReportIndividual.rpt.bak</i>	<i>VotingReportNoLogo.rpt</i>	into	<i>VotingReport.rpt</i>	<i>VotingReportIndividualNoLogo.rpt</i>	into	<i>VotingReportIndividual.rpt</i>
<i>VotingReport.rpt</i>	into	<i>VotingReportAll.bak</i>											
<i>VotingReportIndividual.rpt</i>	into	<i>VotingReportIndividual.rpt.bak</i>											
<i>VotingReportNoLogo.rpt</i>	into	<i>VotingReport.rpt</i>											
<i>VotingReportIndividualNoLogo.rpt</i>	into	<i>VotingReportIndividual.rpt</i>											
DCN-SWSMV	<p>DCN-SWSMV might become very slow when it is used to control Multi CCU systems.</p>												

Reference	What
DCN-DLT or DCN-SWSMV	Starting DCN-DLT or DCN-SWSMV gives error 'The event log file is full' For <u>Windows XP</u> and <u>Windows 2000</u> , this can be solved by the following setting: Do a right mouse click on the 'my computer' icon on the desk top, to open the 'Manage' menu. Select the 'Event Viewer'. Do a right mouse click on 'Application' to select 'Properties'. Select 'Overwrite events as needed' and press 'OK' to confirm. For <u>Windows Vista</u> , this can be solved by the following setting: Do a right mouse click on the 'my computer' icon on the desk top, to open the 'Manage' menu. Select the 'Event Viewer'. Select 'Windows Logs', do a right click on 'Application' and select Properties. Select 'Overwrite events as needed (old events first)' and press 'OK' to confirm.

6 Additional Information to the Integrus Manual

Reference	What
Integrus IUI Several places	Increase coverage of LBB 4511/00 and LBB 4512/00 radiators The information related to the increase of the coverage is valid for the radiators with hardware version 2.00 and higher.
Integrus IUI Figure 1.5	Footprint increased with 30%.
Integrus IUI Paragraph 2.4	Added menu 4B Network mode Menu 4B (Network mode) has been added. 
Integrus IUI Paragraph 2.5.7	Removed automatic standby function Automatic standby mode is removed. <i>Reason: the automatic standby switching occasionally resulted in incorrect start-up behavior.</i>
Integrus IUI Paragraph 2.5.8	Added menu 4B Network mode Options: <ul style="list-style-type: none"> • Standalone – use this when the transmitter is not used in combination with DCN Next Generation or DCN wireless. • Enabled – use this when the transmitter is used in combination with DCN Next Generation or DCN wireless. <p>In case ‘standalone’ is selected and the transmitter is connected to a DCN Next Generation or DCN wireless system, the audio in the system can be disrupted.</p> <p>In case ‘enabled’ is selected, while no DCN Next Generation or DCN wireless system is connected, the transmitter will show the fault status “Network Error”.</p>

IUI Integrus Paragraph 3.1.1	<p>The LBB 4511/00 has an infra-red output of 22 Wpp, while the LBB 4512/00 has an infra-red output of 42 Wpp.</p>
IUI Integrus Paragraph 3.1.3	<p>A hole for a safety eye is added to the radiator (hardware version 2.60). Mount the safety eye properly in the hole. Make sure that:</p> <ul style="list-style-type: none"> - the minimum strength of the safety cord, mounting material, shackle and supporting building structure should withstand 1,500 N. - a proper length safety cord is used (not more than 20 cm longer than needed). <div style="text-align: center;">  </div> <p>WARNING: Suspending any object is potentially dangerous and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of rigging objects overhead. Bosch strongly recommends that radiators be suspended taking into account all current national, federal, state and local regulations. It is the responsibility of the installer to ensure that radiators are safely installed in accordance with all such regulations. If radiators are suspended, Bosch strongly recommends that the installation is inspected at least once a year. If any sign of weakness or damage is detected, remedial action should be taken immediately.</p>
IUI Integrus Paragraph 3.1.3	<p>When a radiator is used with a wall mounting bracket, the mounting plate should be mounted as indicated in figure 3.3.</p> <div style="text-align: center;">  </div> <p>When a radiator is used on a floor stand, the mounting plate should be mounted at the other side of the suspension bracket. This in order to reduce the force on the screws.</p>

IUI Integrus Paragraph 3.1.3	<p>The mounting plate is changed to the following shape:</p>  <p>This plate should be mounted in the way as described above.</p>
IUI Integrus Paragraph 7.3.1	<p>Total IR output at 20°C increase with 30%:</p> <ul style="list-style-type: none"> • LBB 4511/00: 11 Wrms and 22 Wpp • LBB 4512/00: 21 Wrms and 42 Wpp <p>Total optical peak intensity increased with 30%:</p> <ul style="list-style-type: none"> • LBB 4511/00: 12 W/sr • LBB 4512/00: 24 W/sr
IUI Integrus Paragraph 7.6	<p>See the tables in the appendix for the new guaranteed rectangular footprints. See also the updated footprint calculation tool on this DVD.</p>

7 Trouble Shootings and known issues

This trouble shootings and known issues are in addition to chapter 2 and to the trouble shooting chapter in the user manuals.

Product/function	Problem	Solution
Not able to download DCN-CCU2 firmware	DCN-DLT is not able to download the firmware of the CCU	<p>Check if the DCN-SW server is not running:</p> <ol style="list-style-type: none"> 1. Exit the DCN-DLT program 2. Check if the DCN-CCU2 does not report PC on it's display. If it does Stop the DCN-SW server via Start\ <Search programs and files> SERVICES. Services (local). And check if PC disappears. 3. Start DCN-DLT (PC will now re-appear in the CCU2 screen, but that is correct) and start the download. <p>If the download still fails, do the following:</p> <ol style="list-style-type: none"> 1. Power off and open the DCN-CCU2 2. Set switch 8 of S600 to ON and power on the CCU. 3. Download the CCU using the DCN-DLT. 4. After a succesfull download, power off the CCU, set switch 8 of S600 to OFF again and power on the CCU.
DCN-SWSMV help file	When opening help file you get an error.	Just close the error notification.
DCN-SW Configuration Application	In rare occasions it can happen that the application closes unintended.	Restart the DCN-SW Configuration Application.
Printing individual voting results manually	Individual voting results are not printed when printed manually via Bosch DCN SW Print Application.	<p>Change the voting template accordingly:</p> <ol style="list-style-type: none"> 1. Check the "Automatic print after stop of the voting" checkbox. 2. Change the settings to Total, groups and individuals. 3. Uncheck "Automatic print after stop of the voting" checkbox.

Product/function	Problem	Solution
Operator Control Voting control on Layout	The Voting control which can be placed on the Layout does not show Group Results.	Use the Voting Results from the Menu Ribbon to show Group Results.
HD Conference Dome	The HD Conference Dome will show an incorrect name & picture combination if a new pre-position is asked before it reaches it's pre-position.	Do not activate another microphone until the HD Conference Dome has reached it's pre-position.
DCN-SW	Delegate both in Request to speak as Request to respond list.	If a delegate is both in the Request to Respond as in the Request to Speak list and you want to shift the Request to Speak to Speaking, first cancel the Request to Respond.
DCN-SW	On 64-bit operating systems, it might difficult to find previous SQL-server during DCN-SW installation, when initial SQL-installation was not default.	During installation of DCN-SW the installation process might not be able to find the previous SQL-server, in case during initial installation another name for the SQL-server was created, instead of using the default name. Therefore it is recommended to use the default name and folder during initial SQL-installation. If a SQL-server with a non-default name needs to be found, the correct name should be entered manually in the applicable box during DCN-SW installation.
DCN-SW	System overview does not show all connected devices when system is still powering up.	Wait until DCN-system is powered up completely and then check the connected devices via DCN-SW configuration application VIEW \ System Overview.
DCN-UPTK	The type of the unit connected to the UPTK is not valid.	This notification can occur when the DCN-UPTK unit is used extensively. Please replace the connection cable.
DCN-CCU(B)2	Error relays activated upon system reset or firmware download.	During a firmware download or system reset, the system is not in normal operation and thus the error relays can be active.
DCN-SW	DCN-SW Master Volume is different from CCU volume control	When the Master Volume of the CCU has been changed while DCN-SW was disconnected, the DCN-SW Master Volume will not reflect the CCU-setting. Changing the DCN-SW volume setting, will make them identical again.
DCN-CONFF and DCN-CONCM	DNPV answers in voting are not visible in the Concentus screen when a voting timer is activated.	Use a hall display or disable the voting timer.
DCN-SWSACC and Allegiant	Double screenlines are still visible on audience screens after switching to single screenlines.	Restart the Allegiant.
DCN-SWSACC	Upload does not work anymore.	Restart the DCN-CCU or DCN-NCO.
DCN-SW	Downgrade to versions <3.10 not possible.	Manually uninstall SWL server 2008. Note that the DCN-SW database (the database contains all settings like seats, meetings, synoptic layouts, etc.) will always be removed during a downgrade.

Product/function	Problem	Solution
DCN-SW	Unexpected behaviour or no reaction of DCN-SW.	Due to Windows Automatic Updates some critical components like SQL Server Express might be temporarily not available for DCN-SW. Do not set Automatic Updates to Automatic or restart your system after the Automatic updates have been installed.
DCN-SW	DCN-SW installation fails on Windows XP SP3	This is a known Microsoft problem. For more information please check: http://support.microsoft.com/kb/968749
DCN-SW	Generates errors after Windows Stand by..	Disable Stand by functionality in the Windows operating system.
DCN-SWPV	Secret mode does not work in ad-hoc voting	Update to version 2.80 or higher
DCN-SWPV	Voting attention tone cannot be changed during a running meeting.	The voting attention tone can be changed in the voting template but becomes effective after a vote has been selected or started.
DCN-SW setup repair	Error code 2869 or Fatal error during installation.	Remove DCN-SW with DCN-SW setup and make a new installation. Settings are stored in the SQL-database and can be re-used in the new installation.
DCN-MR	Windows audio playback is lost after installation DCN-MR 1.3. in windows XP.	Replace files msacm32.drv, msadp32.acm and imaadp32.acm in the windows system32 folder.
DCN-SWSMV	DCN-SWSMV will not start	Voting legends cannot be changed into "Not Voted". Remove "BCPCSettings.xml" which can be found: For XP: "...\\Documents and Settings\\All Users\\Application Data\\Bosch\\DCN Synoptic Microphone and Voting Software\\x.xx" For Vista: "...\\Programdata\\Bosch\\DCN Synoptic Microphone and Voting Software\\x.xx"
DCN-SWSMV	Up to 6 CCU supported by the DCN-SWSMV Synoptic Microphone and Voting Software	The DCN-SWSMV supports slave CCU ID 1 to 6 in a Multi CCU system set-up. If more CCU's are required use the DCN Classic software modules.
LBB4190/00	The application does not start.	Be sure that the CCU/NCO has the same version as LBB 4190/00.
LBB 4190/00	Vote export does not work	Update to version 2.80 or higher
LBB 4190/00	LBB 4190 gives several errors with title 16 bits Windows or MS-DOS subsystem on the file RNBOVDD.DLL.	This is a known Microsoft problem. For more information please check: http://support.microsoft.com/default.aspx?scid=kb;EN-US;314452 and re-install LBB 4190/00.

Product/function	Problem	Solution
LBB4180 Delegate database	Download user display language list	<p>When you download to the CCU a user language list different from the default user language list, the first time after installation of the database, the default user language list will be used.</p> <p>Follow the following steps to solve this issue:</p> <ol style="list-style-type: none"> 1. Connect the PC to the CCU. 2. Create an empty names file. 3. Close the database application. 4. Open the empty names file in the start up application. 5. The next time that you open the database application, the user language list will be matched with the CCU and the issue will be solved.
LBB 4190/00 software	Error during installation "An installable virtual Device Driver failed DLL installation"	<p>The problem described is a known problem of the Microsoft Windows 2000 and XP operating system. Detail and solution can be found in the following documents:</p> <p>http://support.microsoft.com/default.aspx?scid=kb;EN-US;314452 (windows XP)</p> <p>http://support.microsoft.com/default.aspx?scid=kb;EN-US;254914 (windows 2000)</p>
DCN-CCU/DCN-NCO	System might restart when adding optical devices to the system.	Do not connect optical devices or change optical cables while the system is operational. Always restart the complete system after connecting or disconnecting optical devices.
Multi CCU systems	System reaction is (very) slow after system startup.	<p>The system might become (very) slow when in a multi CCU system only the NCO is switched off and the rest of the system stays switched on.</p> <p>To prevent this problem: Shutdown all optical devices in the Multi-CCU system.</p>

Product/function	Problem	Solution
DCN-NCO	DCN-NCO cannot be downgraded or upgraded.	<p>A known issue is that DCN-NCO cannot be downgraded from SW 2.70.</p> <p>Workaround</p> <ol style="list-style-type: none"> 1) Install the Download and License Tool of the version you want to use to downgrade or upgrade to. 2) Open Notepad and paste the text below into Notepad <pre> user target password cd /rfa dele PDSDATA1.PDS dele PDSDATA2.PDS bin hash cd /rfa/drv put mmu_3.bit put mif_3.bit cd /bim put dune.bim bye </pre> <ol style="list-style-type: none"> 3) Save the file in Notepad to C:\Program Files\Bosch\Digital Congress Network\Download and License Tool\Files with name dcn-nco.txt 4) Switch off the NCO and set dipswitch 1 of S3 to on, set all other switches to off 5) Switch on the NCO 6) Open a command prompt (start -> run -> cmd) and change to the following folder: C:\Program Files\Bosch\Digital Congress Network\Download and License Tool\Files 7) Download the NCO with the next command line FTP with the command: <i>ftp -n -s:dcn-nco.txt x.x.x.x</i> Where x.x.x.x is the IP-address of the NCO 8) Switch off the NCO and set the dipswitches all to off 9) Switch on the NCO 10) Start the Download and License Tool and start a NCO download.
DCN-CCU DCN-NCO	Local floor muted after download of NCO or CCU	Switch off and on the CCU or NCO
DCN-NCO DCN-CCU, INT-TX04/08/16/32	Unexpected behavior when adding powered system units to the optical ring	In case system units are added to the optical ring when the system is powered on, unexpected behavior can occur. Only connect units to the optical network when all units are powered off.
DCN NCO DCN-CCU INT-TX04/08/16/32	Audio disruption when switching on a transmitter	Select the option "enabled" in menu 4b (network mode).
DCN NCO DCN-CCU INT-TX04/08/16/32	Audio disruption when one of the CCUs is in the mode "--"	Change the slave id "--" to a number. (refer to menu 7I Multi Mode).
INT-TX04/0816/32	The transmitter displays the message "No Network"	Connect a powered DCN Next Generation or DCN wireless system to the transmitter or select the option "standalone" in menu 4b (network mode)

Product/function	Problem	Solution
INT-RX04/08/32	Charging indicator on the receiver is blinking	Check whether the receiver is still working correctly. If this is the case: the battery pack is fully charged and can be recharged after using it a while. If this is not the case: follow the instructions as given in the troubleshooting table.
DCN-CCU	DCN-CCU shows "Multi" while acting in "Single"	When changing from "single" to "multi" mode, the DCN-CCU can remain working in "single" mode. If this is the case follow next procedure: 1. Select "multi" on all connected CCUs 2. Switch off all CCUs. 3. Reset to defaults the NCO. 4. Switch on all CCUs.
DCN-CCU	Audio disruption during powering up/down a CCU in a Multi CCU system	During powering up/down a CCU in a Multi CCU system the audio on the delegate units, connected to the remaining CCU's, is shortly disrupted for 1 to 2 seconds.
DCN-CCU	Loss of settings after reboot of NCO in a Multi CCU system	In case the Network Controller (NCO) in a Multi CCU system is rebooted, the settings and configurations changed during the past 30 seconds can be lost. When configuring interpreter desks wait minimum 30 seconds before reboot the NCO.
LBB 4402/00 LBB 4404/00 PRS-4DEX4	Input routing does not work after download of optical devices	Change all inputs to CH00 and then to the required channel.
INT-TX	Transmitter does not work after updating firmware	Update FPGA to version 2.03 or higher Alternative solution: Update firmware of the INT-TX to version 2.80
DCN-IDENC	DCN-IDENC ID card encoder in not recognized in DCN-SW.	If other card readers/encoders are present or connected to the PC please disable them. Internal readers/encoders can be disabled in the BIOS or in the Windows Device Manager.
Download and License Tool	The Download and License Tool version 2.7x cannot be downgraded to 2.6x and older.	First remove the Download and License Tool version 2.7x before installing Download and License Tool 2.6x and older.
CNConfig	Error during installation "...verify that you have access to the directory."	Ensure that you have the required administrator rights. Restart installation.
DVD WebPages	Access denied pop-up when opening the software manual from a network share.	Make a copy of the complete file-set on a local hard disk or DVD.

8 Appendix: Guaranteed Rectangular Footprints

See the next table for the guaranteed rectangular footprints in metric units.

Number of Carriers	Mounting Height (m)	Mounting angle (degrees)	LBB 3410/05 at full power				LBB 4511/00 at full power				LBB 4512/00 at full power				
			Area A (m ²)	Length L (m)	Width W (m)	Offset X (m)	Area A (m ²)	Length L (m)	Width W (m)	Offset X (m)	Area A (m ²)	Length L (m)	Width W (m)	Offset X (m)	
1	2.5	0	130	13	10	4	814	37	22	8.5	1643	53	31	11.5	
		5	15	130	13	10	4	714	34	21	8	1440	48	30	10.5
			30	140	14	10	3	560	28	20	5	1026	38	27	6.5
	45		120	12	10	3	340	20	17	2	598	26	23	3	
	60		100	10	10	1	240	16	15	-0.5	380	20	19	0	
	90	56	7	8	-4	169	13	13	-6.5	196	14	14	-7		
	10	15	72	9	8	7	770	35	22	10	1519	49	31	12.5	
		30	72	9	8	7	651	31	21	6	1189	41	29	8	
		45	90	9	10	4	480	24	20	2.5	837	31	27	3	
		60	108	12	9	0	380	20	19	-1.5	600	25	24	-1	
		90	80	8	10	-5	324	18	18	-9	441	21	21	-10.5	
	20	30					609	29	21	12	1364	44	31	11	
45						594	27	22	6	1140	38	30	4.5		
60						504	24	21	0.5	899	31	29	-1.5		
90						441	21	21	-10.5	784	28	28	-14		
2	2.5	15	63	9	7	2	360	24	15	5	714	34	21	7	
		5	15	63	9	7	3	375	25	15	6	714	34	21	8
			30	56	8	7	3	294	21	14	4	560	28	20	5
	45		49	7	7	1	195	15	12	1.5	340	20	17	2	
	60		49	7	7	0	156	13	12	-1	240	16	15	-0.5	
	90	42	6	7	-3	121	11	11	-5.5	169	13	13	-6.5		
	10	30					330	22	15	5.5	651	31	21	6	
		45					285	19	15	2.5	480	24	20	2.5	
		60	30	5	6	2	224	16	14	-1	380	20	19	-1.5	
		90	42	6	7	-3	196	14	14	-7	324	18	18	-9	
		60					255	17	15	2.5	504	24	21	0.5	
	90					225	15	15	-7.5	441	21	21	-10.5		
4	2.5	15	20	5	4	2	187	17	11	4	360	24	15	5	
		5	15					187	17	11	5	375	25	15	6
			30					165	15	11	3.5	294	21	14	4
	45						120	12	10	1.5	195	15	13	1.5	
	60						90	10	9	-0.5	156	13	12	-1	
	90					81	9	9	-4.5	121	11	11	-5.5		
	10	45					154	14	11	3	285	19	15	2.5	
		60					132	12	11	0	224	16	14	-1	
		90					100	10	10	-5	196	14	14	-7	
		90					100	10	10	-5	225	15	15	-7.5	
		90					96	12	8	3	187	17	11	4	
	8	2.5	15					84	12	7	4.5	187	17	11	5
5			15					88	11	8	3	165	15	11	3.5
			30					63	9	7	1.5	120	12	10	1.5
		45					56	8	7	-0.5	90	10	9	-0.5	
		60					49	7	7	-3.5	81	9	9	-4.5	
90						64	8	8	1.5	132	12	11	0		
10		60					64	8	8	1.5	132	12	11	0	
		90					64	8	8	-4	100	10	10	-5	

Guaranteed rectangular footprints (shown in metric units)

Note The mounting height is the distance from the reception plane and not from the floor

See the next table for the guaranteed rectangular footprints in imperial units.

Number of Carriers	Mounting Height (ft)	Mounting angle (degrees)	LBB 3410/05 at full power				LBB 4511/00 at full power				LBB 4512/00 at full power			
			Area A (ft ²)	Length L (ft)	Width W (ft)	Offset X (ft)	Area A (ft ²)	Length L (ft)	Width W (ft)	Offset X (ft)	Area A (ft ²)	Length L (ft)	Width W (ft)	Offset X (ft)
1	8	0	1419	43	33	13	8712	121	72	28	17748	174	102	38
	16	15	1419	43	33	13	7728	112	69	26	15386	157	98	34
		30	1518	46	33	10	6072	92	66	16	11125	125	89	21
		45	1287	39	33	10	3696	66	56	7	6375	85	75	10
		60	1089	33	33	3	2548	52	49	-2	4092	66	62	0
		90	598	23	26	-13	1849	43	43	-21	2116	46	46	-23
	33	15					8280	115	72	33	16422	161	102	41
		30	780	30	26	23	7038	102	69	20	12825	135	95	26
		45	990	30	33	13	5214	79	66	8	9078	102	89	10
		60	1170	39	30	0	4092	66	62	-5	6478	82	79	-3
		90	858	26	33	-16	3481	59	59	-30	4761	69	69	-34
	66	30					6555	95	69	39	14688	144	102	36
		45					6408	89	72	20	12250	125	98	15
		60					5451	79	69	2	9690	102	95	-5
		90					4761	69	69	-34	8464	92	92	-46
2	8	15	690	30	23	7	3871	79	49	16	7728	112	69	23
	16	15	690	30	23	10	4018	82	49	20	7728	112	69	26
		30	598	26	23	10	3174	69	46	13	6072	92	66	16
		45	529	23	23	3	1911	49	39	5	3696	66	56	7
		60	529	23	23	0	1677	43	39	-3	2548	52	49	-2
		90	460	20	23	-10	1296	36	36	-18	1849	43	43	-21
	33	30					3528	72	49	18	7038	102	69	20
		45					3038	62	49	8	5214	79	66	8
		60	320	16	20	7	2392	52	46	-3	4092	66	62	-5
		90	460	20	23	-10	2116	46	46	-23	3481	59	59	-30
	66	60					2744	56	49	8	5451	79	69	2
		90					2401	49	49	-25	4761	69	69	-34
4	8	15	208	16	13	7	2016	56	36	13	3871	79	49	16
	16	15					2016	56	36	16	4018	82	49	20
		30					1764	49	36	11	3174	69	46	13
		45					1287	39	33	5	2107	49	43	5
		60					990	33	30	-2	1677	43	39	-3
		90					900	30	30	-15	1296	36	36	-18
	33	45					1656	46	36	10	3038	62	49	8
		60					1404	39	36	0	2392	52	46	-3
		90					1089	33	33	-16	2116	46	46	-23
	66	90					1089	33	33	-16	2401	49	49	-25
8	8	15					1014	39	26	10	2016	56	36	13
	16	15					897	39	23	15	2016	56	36	16
		30					936	36	26	10	1764	49	36	11
		45					690	30	23	5	1287	39	33	5
		60					598	26	23	-2	990	33	30	-2
		90					529	23	23	-11	900	30	30	-15
	33	60					676	26	26	5	1404	39	36	0
		90					676	26	26	-13	1089	33	33	-16

Guaranteed rectangular footprints (shown in imperial units)

Note The mounting height is the distance from the reception plane and not from the floor