DCC FAQ

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FAQ - Digital compact cass recorder


GENERAL INFORMATION
. 900 Series ''Digital Convenience'' DCC recorder
. Direct digital recording
. Plays also Compact Cassettes
. Full 18-bit system
. Turbo drive
. Title recording
. Microphone input
. ''System Intelligence'' bus

AUDIO TAPE DECK
DIGITAL DCC (playback)
  Sample frequencies: 44.1 kHz,
  Wow and Flutter   : Quartz Crystal Precision

DIGITAL DCC (recording, line in)
  Sample frequencies: 44.1 kHz,

DIGITAL DCC (recording, digital/optical in)
  Sample frequencies: 32 kHz (satellite Tuner e.g.)
                      44.1 kHz (CD)
                      48 kHz
  Perfect digital recording

AUDIO/SOUND
DIGITAL DCC (playback)
  Frequency range       : 20Hz-20kHz
  Amplitude linearity   : ± 0.05 dB
  S/N ratio (A-weighted): ± 105 dB (1 kHz)
  Dynamic range         : ± 100 dB (1 kHz)
  THD+N                 : ± 90 dB (10 kHz)
  Channel Separation    : ± 110 dB (1 kHz)

DIGITAL DCC (recording, line in)
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  Frequency range       : 20Hz-20kHz
  Amplitude linearity   : ± 0.1 dB
  S/N ratio (A-weighted): ± 100 dB (1 kHz)
  Dynamic range         : ± 92 dB (1 kHz)
  THD+N                 : ± 85 dB (1 kHz)
  Channel Separation    : ± 100 dB (1 kHz)

ANALOGUE CASSETTE (playback only)
  Frequency range       : 40Hz-16kHz (CrO2)
  S/N ratio (A-weighted): 55 dB (CrO2)
  Dolby B/C             : Improvement B: 10 dB
                          Improvement C: 18 dB
  Signal also supplied to digital outputs

Headphone amplifier performance
. Load Impedance Range: 32-600 Ohm
. Output impedance    : 170 Ohm
. Output voltage (L+R): Max. 5V Rms
. Frequency range     : 20-20 kHz

Microphone
. Microphone impedance
  Range               : 200-2000 Ohm

OPERATION/CONTROLS
. Remote control RC-5, 20 keys supplied

CONNECTIONS
Inputs:
   Analogue       : impedance 50 K ohm
   Digital Coaxial: acc. to IEC 958
   Digital optical: TOSLINK
Outputs:
   Analogue       : 2V ms
   Digital Coaxial: acc. to IEC 958

MISCELLANEOUS
Dimensions (wxhxd) : 435x90x300 mm
Display            : 14 characters FTD
Material/Finish    : Metal and polystyrene
Mechanism          : 2 motor metal deck
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RC socket : ESI bus, 2x cinch
Tape-speed level : 4.76 cm/sec

FREQUENTLY ASKED QUESTIONS
PLAYBACK: DCC cassettes
Problem: DCC cassettes causing faults (a.o. drop outs, tape salad, clean head).

Cause : DCC cassettes outside specification.

REMARKS :
The used DCC cassette is not according the DCC specification and so NOT released by Philips. (e.g. some of Maxell and Fuji cassettes)
It is recommended to use released Philips DCC cassettes only.

PLAYBACK: Skipping small part of music
Problem: Skipping small part of music of pre-recorded DCC-cassettes after track search

Cause : Repositioning problem due to high fast wind/rewind speed.

REMARKS :
After track search command the DCC does not start exactly at the beginning of a track.
First approx. 500 msec. of track are not played back.
This problem does not occur when DCC-cassette is played-back normally.
This deviation is dependant on the position of the tape; via the reel-tacho signals the movement of the reel is measured not the tape.
To reduce this error a compensation is done, based on an average required repositioning within ± 0.5 sec. Only in the minus area this short jump could be noticed.
This problem cannot be solved.
TRACK AND TIME: REMaining time
Problem: REMaining time indication is not reliable.

Cause : Calculation of remaining time by DCC recorder

REMARKS :
The DCC recorder starts with defining an estimated total remaining time. After that it calculates the elapsed time by reading total time information of played back tracks.

The remaining time left on tape is the estimated playing time of the cassette minus the elapsed time.
The remaining time might have a tolerance of about 1 minute.
So it might happen that for instance the display shows 'REM TIME 5:38, and yet a music piece of about 4:14 will not fit.

TRACK AND TIME: Track and Time information is erased

Problem: Track and Time information is erased when adding text information.

Cause : Not correct initialized cassette.

REMARKS :

Sometimes track number and time information is erased when recording text information. When using RENUMBER to reconstruct the track numbering again the missing time information will be misinterpreted as tape end and tape direction is reversed, while renumbering continues on side B.

OPERATING: "DUBBING ACTIVE"

Problem: Message 'DUBBING ACTIVE' on display of DC951.

Cause : Via presets like: source CD and CD SYNCHRO ON the reference for CD dubbing is defined.

REMARKS :

After actuating REC SELECT/PAUSE key the DCC951 is looking for its preference entry in the Philips 900 series system, with correct ESI BUS connections. When the presets are set to source CD and CD SYNCHRO ON the set is waiting for acknowledge command from CD player.
In case other keys are pressed in the meantime the message 'CD DUBBING ACTIVE' is shown as operating error message. If ESI BUS is not connected in the right way the message 'NO CD SYNCHRO' is shown.

NOTE: CD SYNCHRO mode can be changed with the PRESETS function as follows:

- press PRESETS
- press RECORD
- by pressing 'wind' or 'rewind' the presetted CD SYNCHRO mode can be switched ON or OFF
- press PRESETS to store settings.

Only valid for DCC951.

OPERATING: AUTO STOP mode

Problem: DCC recorder does not stop after last recording when selected AUTO STOP mode.

Cause : Auto stop function is wrongly interpreted by user.

REMARKS :

With the PRESETS function the playback function can be set as soon as a cassette is inserted. With playback set at AUTO PLAY, playback will always be started automatically as soon as the tray has been closed (and cassette is inserted) by pushing the tray by hand or the POWER has been switched ON.

With playback set at AUTO STOP, playback will not start automatically.

NOTE: To find last recording user should use APPEND to search for the end of the last recording (which was marked when STOP was pressed during recording). APP > or APP < appears.

When this position has been found the last 10 seconds will be played back (APPEND PLAY), after which the RECORD PAUSE (REC-P) mode is entered.

OPERATING: NO CD SYNCHRO desired

Problem: NO CD SYNCHRO desired by user of DCC951.

Cause : Function CD SYNCHRO ON is selected in preset.

REMARKS :

When CD SYNCHRO option is not required by user, or not via ESI BUS connected with other sets from the Philips 900 series system, it should be switched off. This can be done as follows:

- press PRESETS
- press RECORD
- press WIND or REWIND to switch to CD SYNCHRO OFF
- press PRESETS to store presets.

To use CD SYNCHRO ON presets must be changed by applying above mentioned procedure again and the ESI BUS should be proper connected to other sets in the Philips 900 series system.

Only valid for DCC951.

OPERATING: Operation of source selector

Problem: Operation of source selector is not clear.

Cause : IFU does not explain selection of source very clear.

REMARKS :

After installation of the DCC recorder all input sources should be selected via source preset. This is done as follows:

- Press PRESET
- By pressing REC SELECT/PAUSE the default CD is indicated on display. By pressing NEXT key the cable connection made with CD player can be selected.
  By pressing again REC SELECT/PAUSE the next input source (tuner etc) can be selected. Every time again the applied cable connection with source can be selected via the NEXT key.
- When all sources (to be recorded from) via REC SELECT/PAUSE and NEXT are selected these presettings are stored by pressing PRESET.
  Making a recording from one of the sources the latest used source (this setting is also stored by the set) is selected. If another source should be selected this is done as follows:
- Press REC SELECT/PAUSE, the default source is already indicated on display (except Microphone).
- By pressing REC SELECT/PAUSE again next source is selected.
- Subsequently pressing REC SELECT/PAUSE gives the other available sources.
  Sequence of source selection is CD TUNER AUX1 AUX2 CD TUNER, etc.
  In case microphone socket has been connected this input source is selected automatically.

NOTE: In case a digital recording will be made from CD or AUX as source and no digital connection is made the message: 'CHECK DIG IN' is displayed and one should reconnect digital cable from recorder to source.

For more detailed information See the Instructions for Use.

A quick reference card for ease of operating is made available:

For DCC730 with service code 4822 725 22612

For DCC951 with service code 4822 725 22611

These reference cards contain clear pictographs to operate the DCC recorder.

OPERATING: Operate DCC recorder

Problem: It is difficult to operate DCC recorde.

Cause : DCC recorder is software controlled (play back = CD similar).

REMARKS :
Correct understandings of the user-recorded tape formats and markers will help customers to make full use of the benefits of the DCC recorder. See also newsletter 63.01. For ease of operationg a quick reference card is made available:

For DCC730 with service code 4822 725 22612

For DCC951 with service code 4822 725 22611

These reference cards contain clear pictograms to operate the DCC recorder for every mode.

OPERATING: Renumbering

Problem: Renumbering not possible when making a new recording at specific location.

Cause : In User format is RENUMBER not possible.

REMARKS :
Before recording first initializing of the tape has to be performed.
See also newsletter item 63.01

OPERATING: Music passages are lost

Problem: Music passages are lost after renumbering.

Cause : 'CONTINUE B' (REVERSE) and 'GO TO START A' (STOP) marker cannot be erased.

REMARKS :
Markers which are recorded on the tape, control the set in play back mode. This means that in PLAY mode all information recorded on tape behind the 'Continue B' marker or 'Go to Start A' marker is skipped. The recordings behind those markers can only be reached by winding over that marker.

OPERATING: Track numbering

Problem: Track numbering does not start at number 1 when recording side B.

Cause : Per default single Album format is defined.

REMARKS :
Track numbering starts at side A (when AUTO EDIT ON) directly after the LEAD-IN area with number 1.
Track numbering is automatically incremented when recording new tracks and continues on side B.
In other words the DCC tape is seen as one single album where one may select a particular track, and it does not matter whether the required track is on side A or B of the tape.

If user wants to start track numbering with track 1 on side B to obtain e.g. a dual Album, EDIT function must be performed.

When in REC-PAUSE mode: -

- press EDIT key to enter the edit mode
- select required EDIT function by pressing EDIT several times
- press RECORD key to actually edit the tape.

Next edit functions are available: -

- START NEW SIDE:
  to start track numbering on side B with track number 1.
  When restarting of track numbering is required, user must search for last recording on side A, record START NEW SIDE indication.
- CONTINUE B:
  track numbering is continued at side B.
- GO TO START A:
  marks the position where the deck should start winding to the beginning of side A and stop.

RECORDING: Analog level

Problem: Analog level cannot be reduced until zero using REC LEVEL control.

Cause : No analog fade in/out option available.

REMARKS :
Recording level control is not meant to obtain fade in/out effects for own analog recordings. Typical fade in/out feature is not available on DCC sets. Analog recording level control is meant to be used for adapting input level for analog signals.

To obtain real fade in/out effects an audio mixing unit (e.g. SBC5370), connected to AUX - ANALOG IN, should be applied.

RECORDING: Clicks are audible

Problem: Clicks are audible when interrupting recording with REC PAUSE.

Cause : Difference between digital mute (-110dB) and analog silence (>-30dB) can be recognized as click being recorded.

REMARKS :

By mixing different titles (from e.g. various Vinyl Records) clicks are audible between the analog silence signal of the vinyl recording and the interrupting of the recording with REC PAUSE (digital mute). It is this difference in level between the analog silence and the digital mute (system detects a sudden increase of level) that the DCC recorder records, and is audible as a click during play back at high volume level.

RECORDING: Old recordings remain

Problem: Parts of old recordings remain after overwriting existing recordings.

Cause : Cassette is not initialized correctly before overwriting.

REMARKS :

When a CD-synchro recording is made on a DCC-tape which was already recorded in the past, the set switches at the estimated end from side A to side B.
When playing back this part of the tape first the 'new' music is heard followed by the 'old' music until end of side A and in the beginning of side B.
This problem can be prevented by renumbering the tape.

NOTE: To overwrite a previous recorded DCC tape press REWIND key more than 0.5 second (set must be in STOP mode). Tape is rewound to the beginning of the tape. By pressing REC SELECT/PAUSE key the LEAD IN portion of about 10 seconds is recorded.
Afterwards the set goes to Record Pause mode.
When pressing RECORD the recording starts and tape will be

completely overwritten. Set 'sees' tape as being new.
To record in the middle of an existing track (recording on a specific location) first the location should be searched, than (in STOP mode) press subsequently REC SELECT/PAUSE and RECORD.

RECORDING: Track numbering

Problem: Track numbering DCC does not match with the track numbering of the source (e.g. when digital copying a Compact Disc)

Cause : Track number is automatically increased at end of side A with CD SYNCHRO OFF.

REMARKS :

At end of side A a CONTINUE B marker is recorded. The DCC standard requires a new track number at the start of side B.
This marker is not on the CD, so all recordings from side B have a track number (CD track number + 1).

RECORDING: Track numbering

Problem: Track numbering does not match with the track numbering of the source (e.g. when analog copying a Compact Disc).

Cause : Track number is recorded after an analog silence (signal level below -60dB) for more than 3 seconds and track number is automatically increased at end of side A with CD SYNCHRO OFF.

REMARKS :

- In AUTO EDIT ON mode a new track number will be written after every silence for more than 3 seconds, where 'silence' is defined as an analog signal level below -60dB.
  It might happen that a source (Compact Disc) has music pauses for more than 3 seconds within one music number, or pauses between tracks are shorter than 3 seconds.
  User may edit the track numbering afterwards by CONNECTing or SPLITting TRACKS.
  By connecting tracks the current and next 'pause' track will be connected and later on recognized as one track.
  During this action the DCC recorder will erase the START indication of that 'pause' track.
  By splitting tracks the current track will be split up in two

successive tracks.
- DCC standard requires a new track number at the start of side B.
(See also problem "RECORDING: Writing markers in AUDIO EDIT")

NOTE: When tracks have been connected or splitted also a RENUMBER action is necessary to ensure a correct track number sequence.

RECORDING: Writing markers in AUTO EDIT

Problem: Writing markers in AUTO EDIT mode after more than 3 seconds of silence.

Cause : IFU mentions 3 seconds of silence.

REMARKS :

In AUTO EDIT ON mode the DCC recorder writes new track numbers on the tape when silences (signal level below -60dB) of more than 3 seconds are detected during recording from ANALOG input.
The signal level of the source must be below -60dB before DCC system recognizes a music pause.
It might happen that during fading out of music, the user perceives a silence but that signal level is not dropped below -60dB. In this case the music pause seems to be much longer than 3 seconds.

Note:
In AUTO EDIT OFF the DCC recorder will not perform automatic track increment when recording from analog sources.
AUTO EDIT is always set to ON when a digital source is connected (via digital sockets).

RECORDING: Microphone recording input

Problem: Microphone recording input is only Mono

Cause : Only Mono microphone pre-amplifier designed.

REMARKS :

When microphone is connected, the DCC set automatically selects the MONO microphone input.
Recording via another source is not possible as long as microphone is connected.
When Stereo recording via microphone is required it is recommended to connect microphone(s) to an audio mixing unit (e.g. SBC5370) which must be connected to AUX, ANALOG IN.

PLAYBACK: De-emphasis

Problem: De-emphasis in DCC player is not functioning after making a digital copy of a Compact Disc.

Cause : In PLAYBACK mode the DCC recorder switches de-emphasis ON or OFF dependant to the contents of the system information (SYSINFO).

REMARKS :

De-emphasis of a DCC recording is only activated in PLAYBACK mode if concerned bit in sysinfo is switched on.
This flag is set during recording from digital input.
This information is sent from the CD player to the DCC recorder.
In play back the DCC recorder switches de-emphasis on or off dependant of the flag setting in sysinfo.
Recording via analog input will not set the de-emphasis flag.
This is already performed in the CD player via the information in the SUBCODE.

Manually on/off switching of de-emphasis by user is not possible.

PLAYBACK: CLEAN HEAD

Problem: CLEAN HEAD indication

Cause : Contaminated head.

REMARKS :

The special design of DCC-head makes it sensitive for contamination, especially when low quality ACC tape (Fe tape) is used. The applied DCC tape consists of high quality chrome tape, which will not contaminate the head.
In order to ensure high quality recording the warning of the CLEAN HEAD indication is displayed according following criteria:

- about 8 hours of total playing back time of ACC tape.
- 2 channels or more on DCC tape not detected by DCC head for more than 3 seconds.

please notice: In case CLEAN HEAD indication was caused by a temporarily bad HEAD-TAPE contact, the message will disappear after pressing the 'TIME' or 'TEXT' key.

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