

How to prepare the CD Data Master

General information

The data master should be packed in an appropriate original cover. The master must be in good condition, clean and free from physical damage. Please write the catalog number on the master and on the accompanying information. When you order more than one title, please provide each master on a separate medium. Supply the data master separately from the data for electronic artwork.

We accept the following formats

Professional analogue tape

Characteristics: 1/4" studio tape for analogue sound recording and archiving.
Required information: tape speed – 38 or 19 cms⁻¹
number of tracks – 1 mono track, 2 stereo tracks
mastering – CCIR, NAB
noise reduction – none, DOLBY A, DOLBY SR
Test signals: Test signals must be provided on the tape to allow adjustments on the playback device (frequency response and head alignment). If no test signals are provided, the standard test-tape settings will be used.

U-matic

Characteristics: analogue cassette media initially intended for video recording on the diagonal tracks with sound on longitudinal tracks; it is also used with a Sony PCM 1610/1630 processor for digital sound recording.

Required information:
Recommendation:

- analogue track 2 must contain the time code – SMPTE Non-Drop Frame
- the time code must start at the beginning of the tape; the code must be continuous and uninterrupted and may not exceed the 23 hours 59 min 59 sec 29 frames
- the beginning of the digital audio recording on the diagonal tracks may not begin before 00:00:30:00; the recommended start time is 00:01:00:00
- analogue track 1 is intended for PQ code data (information about index and tracks location, UPC/EAN code, ISRC code data etc.)
- the media may be submitted either with recorded PQ code data (i.e. encoded) or without, in which case the necessary information must be supplied in the accompanying documentation – see “Accompanying information”

R-DAT

Characteristics: digital cassette with diagonal-track recording.
Required information: sampling frequency – 32, 44.1, 48, 88.2, 96 KHz
Requirements:

- absolute time or time code incorporated in the sub-code for the entire length of the recording
- approximately 1 minute of digital silence at the beginning of the tape
- place Start ID marks to identify tracks and spaces
- at least 1 minute of digital silence at the end of the recording
- the recording must be free from interruptions and the sampling frequency and the pre-emphasis may not change
- input media must be supplied with appropriate accompanying information (see paragraph Accompanying information)

Recommendations:

- use cassettes of high quality from a major brand and of the shortest possible length
- use a reliable and well-adjusted recording device
- use a sampling rate of 44.1 or 88.2 kHz
- modulate PQ data at -14dB. Place the Start ID 30 seconds after the beginning of the tape
- keep a continuous time code from the beginning of the tape until 30 seconds after the end of the recording. The time code should not be interrupted or contain gaps
- do not make interruptions while recording (risks of gaps in the time code)
- tag the programmes from 1 upward, in accordance with the desired order of the programmes on the CD
- add the Start ID marks manually. Automatic marking may lead to marking delays and mistakes
- place END ID mark at the end of the recording
- if the recording device doesn't allow listening during recording listen and check the entire record after recording
- completely rewind the tape before storing or transporting it

Pressed CD, write-once CD-R, rewritable CD-RW

Characteristics: pressed, write-once or rewritable medium are the most frequently used media for recording, archiving and CD production.

Required information: a list of the tracks or, for pressed media, a booklet or cover with an exact description of the structure of the recording (tracks, index, length of individual tracks and total length).

Recommendations pressed CD's - send it with booklet and always in a hard case (not in an envelope). For CD-R recordings use only high quality medium. While recording always use the *single session* method (DAO) in compliance with the relevant format of the medium intended for mass-production, test-listen your recording, identify the medium (and only with a felt tip marker intended for that use – using a hard-core pencil will damage the disc), keep the surface of the disc clean and free from physical damage.

MiniDisc

Required information: a list of the tracks or, for pressed media, a booklet with an exact description of the structure of the recording (tracks, index, length of individual tracks and total length).

Exabyte in DDP format

Characteristics: cassette medium with diagonal-track recording; the cassette has the same dimensions as a Video 8 tape.

Required information: the encoding data and the tape analysis sheet.

Recommendations:

- use only data cassettes
- use the shortest possible tape length (54 m). They have enough capacity for CD production, while their tape is thicker and more resistant.
- record your data as ANSI labelled
- when handing in data for several masters, supply data for each individual master on a separate tape.
- place the DDP data at the beginning of the tape, or supply it separately on a diskette.
- use DDP level 1.00
- use the 8500 recording format without compression (the 8200 format has a slow data transfer rate).

- supply the DDP encoding data and the error control protocol for each tape. The tape must not contain non-correctable errors. (Most of workstations can perform error control routines, check data integrity and the minimal transfer rate etc.)

JAZ in DDP format (or other removable drives: SyJet, ORB, ...)

Characteristics: removable magnetic drive for computers with a SCSI port

Required information: track list

Recommendations:

- do not use disk compression.
- supply the DDP either directly on the JAZ cartridge with the source data, or separately on a properly identified diskette.
- check for logical errors before sending the cartridge.
- record the data in the raw PCM format (no headers or additional information: audio data only) – 2 channels, 16 bits, sampling frequency 44.1 kHz.
- format the disk using the FAT16 or FAT32 file system.

Other analogue carriers not listed above may be used only after consultation with the staff of GZ Digital Media a.s.

Accompanying information

Each input media must be clearly described by supplied track-list which contains technical and descriptive data.

Descriptive:

- Name of the company, title, order number – those must also appear on the medium itself

Technical:

- technical data are necessary for correct carrying out of the production operations.
- lengths and names of the individual parts of the recording (songs, records, heads etc.)
- Technical data describing how the record on input media was produced, i.e. record level, sound correction, use of noise reduction (together with the noise reduction type used), indications of special effects which could be mistaken for technical errors e.g. cracklings, recording slowdown, intentional cut-off at the end of a track, a 10-minute silence as part of a programme, etc.
- Requested adjustments and editing must be specifically described; for complex editing we recommend the presence of a person in charge.

If more than one carrier is supplied for arranging of compilation, the final recording must be described by a track list. The best is to fill out a track list with references to the source carriers involved.

Recommendations:

- Send a copy of the original recording (to prevent irrecoverable loss of a recording in case of transport damages etc.)
- Hand in the medium in its original cover
- Test-listen the recording and check the accuracy of the track list

Input media for audio CD's

Acceptable input media

- U-matic PCM 1610/1630
- DDP encoded Exabyte
- CD, CD-R, CD-RW – always in the audio CD data format
- JAZ in the DDP format (or other removable drives: ORB, SyJet, ...)

The following input media may be used after studio processing:

- Professional audio tape
- R-DAT
- Other sources by prior agreement

Input media requirements

1. Identification

- customer / publisher
- order number / catalogue number
- title
- performer

2. Information concerning the entire CD

- required output format (CD-DA, CD-G, CD-TEXT, CD-EXTRA, mixed mode)
- total playing time
- number of tracks
- UPC/EAN code

3. Information concerning each track

- order of tracks on the CD
- order of track on the input media (if different from the required order on the output CD)
- name of the track
- track length
- time elapsed from the beginning of the CD
- ISRC code data
- pre-emphasis (yes/no)
- SCMS (yes/no)

4. Information concerning the input media

- location of the DDP/PQ data
- errors allowed within the recording (description of the errors + occurrence)
- processing requested (see studio work for a list of available operations)
- algorithm in use for bit reduction (SBM, HDCD, UV22, ...)
- input media error checking protocol (U-Matic, Exabyte, CD-R, R-DAT)

5. Additional information

- name of the sound specialist who prepared the source for production
- telephone number at which contingent questions may be addressed
- equipment used for producing the input (software version)

6. Advice

- clearly identify the medium, its cover and the documentation with a single order number
- seal the cover to protect the medium from manipulation and damages by unauthorised persons

Input media for CD-ROM – MODE 1 and XA formats

Sources may be of two kinds:

- A: Complete pre-masters – they contain all the information needed for producing pressed CD-ROM's
- CD-R's in the CD-ROM format in accordance with the Orange book standard, part I, *single session, session at once*
 - pressed CD-ROM's in accordance with the Yellow book standard
 - CD-RW's in accordance with the Orange book standard, part III
 - Exabyte tapes in the DDP format (with the disc image stored on the Exabyte tape). Systems in use: 8500, 8505, Eliant; data formats: ANSI, IBM, unlabeled. The DDP files may be supplied on a separate DOS-formatted 3,5" floppy disk.
 - SCSI DOS disc with IMAGE CD and DDP files – external SCSI drive, Iomega Jaz cartridge.
- B: Source data supplied on one of the media types below, from which a pre-master is prepared (pre-mastering costs invoiced)
- DOS/Windows or Macintosh disk – internal IDE drive, internal or external SCSI drive, transdisk, Iomega Jaz and Zip cartridges. A content list must be provided with the medium (hard copy or plain text file containing details on the name and size of files and directories). Make a special notice if the medium contains system files or hidden files, and specify whether or not those files are to be put on the CD. Unless specified otherwise, the entire data content of the medium will be transferred without change.
 - Multi-session CD-R disks in accordance with the Orange book standard, part II. Media containing 2 or more sessions formatted in accordance with ISO 9660. Unless indicated otherwise, the entire data content will be transferred in accordance with the table of contents (in the lead-in of the last session). Data from preceding sessions will be ignored unless included in the directory structure of the last session.
 - Exabyte in archive format – we accept the following archive formats under DOS/Windows:
 - Adaptec tape backup
 - Norton backup
 - Corel backup
 - Novastore backup
 - Tapedisk
 - Seagate backup

Other formats may be accepted only upon prior agreement. The medium must be supplied with a content list (name and size details on files and directories, in writing or in a plain text file). Make a special notice if the tape contains system files or hidden files, and specify whether or not those files are to be put on the CD. Unless specified otherwise, the entire data content of the medium will be transferred without change.
 - Complete PC or Macintosh computer – the data will be transferred in accordance with the equipment (SCSI, network, parallel port etc.).
 - Other media types might be accepted only with prior agreement with the pre-mastering department.

Input media for CD-ROM – MIXED MODE format

Sources may be of two kinds:

- A: Complete pre-masters – the media will be checked for compliance with pre-masters requirements in the CD-ROM Mixed mode format
- CD-R's in the CD-ROM Mixed mode format in accordance with the Orange book standard, part I, single session, session at once
 - pressed Mixed mode CD-ROM's in accordance with the Yellow book standard
 - Mixed mode CD-RW's in accordance with the Orange book standard, part III

- Exabyte tapes in the DDP format (with an IMAGE CD stored on the Exabyte tape). Systems in use: 8500, 8505, Eliand; data formats: ANSI, IBM, unlabeled. The DDP files may be supplied on a separate DOS-formatted 3,5" floppy disk.
- SCSI DOS disk with IMAGE CD and DDP files – external SCSI drive, Iomega Jaz cartridges

B: Source data supplied on one of the media types below, from which a pre-master is prepared with separate data and audio sections (pre-mastering costs invoiced)

For the data section, the same conditions apply as for Mode 1 CD-ROM's.

For the audio section, the same conditions apply as for audio CD's.

Input media for CD-ROM – Video CD format

- CD-R's in the Video CD format in accordance with the White book standard, single session, session at once
- pressed Video CD's in accordance with the White book standard

Input media for CD-ROM – CD Interactive format

- CD-R's in the CD-I format in accordance with the Green book standard, *single session, session at once*
- pressed CD-I's in accordance with the Green book standard

Input media for CD-ROM – CD Extra format

- CD-R requirements for production in the Extra CD format (full pre-master)
 - the carrier must be produced in accordance with the Blue book standard
 - the data part of the disk must be in the CD-ROM XA format
 - the audio part of the disk must contain only one session, and the session must be recorded in the *session at once* mode.
 - the data part of the disk must contain only one session, and the session must be closed for next recording (no additional data recording is possible).
 - the medium may not contain non-correctable errors.
- source requirements for the production of pre-masters at GZ
 - the sources of the audio and data sections may be supplied on different carriers
 - the maximum total available playing time of the audio recording is 72 minutes, i.e. approx. 660 MB. The division of record time between audio part and data part is arbitrary.
 - the files of the data part will be stored in accordance with ISO 9660 or the Joliet standard. Consult for other file formats.
 - data carriers:
 - CD-R in the CD-ROM format in accordance with ISO 9660 or Joliet.
 - removable JAZ cartridge (1 GB, DOS/Windows-formatted).
 - SCSI drive (DOS/Windows-formatted).
 - audio source carriers:
 - R-DAT with ABS time and Start ID marks.
 - CD-R in the audio CD format.
 - CD-R in the CD-ROM format with tracks stored as WAV files (44.1 kHz, 16 bits) or one WAV file including all tracks + track list
 - U-matic PCM 1610/1630.
 - MiniDisc.
 - Exabyte in the DDP format.
 - analogue 1/4", 38 cm/s, Dolby A, Dolby SR.
 - documentation:
 - for the audio part – track list, ISRC code, IEC/EAN code.

- for the data part, at least the following information must be provided: volume, publisher, required format (ISO 9660 or Joliet), number of files and directories, overall net size (in bytes).

Input media for CD-ROM – Photo CD format

- CD-R in the Photo CD format, *single-session, session at once*
- pressed Photo CD