

Audio player with DAISY capability

Battery operated stand-alone digital device, with an internal speaker and memory, with an integrated CD player that can play/show audio, text, and pictures, and make them accessible to individuals with difficulties that affect their ability to read printed material (print disability). The Digital Accessible Information SYstem (DAISY) is a technical standard for digital audiobooks, periodicals, and computerized text, designed to be a complete audio substitute for print material. General features of an audio player with DAISY capabilities are voice recording facility (recorder), variable speed playback (faster or slower listening without distortion), easy text navigation facility while reading DAISY books, support for listening through headphones, facilities for searching, precisely navigate line by line, placing bookmarks and resuming playback from the last position; DAISY also provides aurally accessible tables, references, and additional information.

Possible variants of DAISY audio players concerns the size (which can also be pocket-size for mobile use, including outdoor), the CD player (which can be also not integrated), the numeric keyboard for navigation (which can also be without numeric keyboard), the dimensions (which can also be pocket-size and handheld), the electric power (which can also be a power supply), the batteries (which can also be rechargeable), the internet connectivity to online libraries (which can also be without internet connectivity), the facility to read content from external memory (which can also be a memory card, a USB memory stick), the compatible audio formats, and the number of control buttons (which may be fewer to make the player easier-to-use).

- **Product Classification**
 - APL (WHO Assistive Product Priority List): 2 (Audio players with DAISY capability)
 - ISO 9999:2022: 221803 (Sound recording and playing devices)
- **Possible configuration variants**
 - Simplified keyboard (keyboard with a smaller number of control buttons to increase ease of use).
- **Possible accessories or optional components**
 - Built-in text-to-speech facility (to enable speech output of text documents and menu in different formats, such as e-Pub, DOC, HTM, PDF and TXT files).
 - External microphone.
 - USB connectivity to PC.
 - CD-R/RW or memory card drive (which may be used when connected to a PC without CD drive).
 - Book creator mode (that enables the user to create a fully structured DAISY book).
 - Protected audiobooks.
- **Product goals**

Activities or functions the product is mainly intended to support, according to WHO ICF Classification:

 - Reading [\[d166\]](#).
 - Listening [\[d115\]](#). *Only if used with variants: Simplified keyboard*
- **Indicated impairments**

Difficulties the product is mainly intended to address, according to the WHO ICF Classification:

 - Reading [\[d166\]](#).
 - Seeing [\[b210\]](#).
 - Intellectual functions [\[b117\]](#). *Only if used with variants: Simplified keyboard*

- Fine hand use [\[d440\]](#). *Only if used with variants: Simplified keyboard*
- **Contraindicated impairments**
Difficulties for which the product may be inappropriate:
 - Severe hearing loss.
 - Profound hearing loss.
 - Difficulty in understanding spoken language (decoding spoken messages to obtain the meaning).
- **Indicated environments**
Specific environments in which the product should be used:
 - Audiobook libraries (where DAISY material is available in open or protected format such as Learning Ally, Bookshare, National Library Service for the Blind and Print Disabled).
 - Indoors.
 - Outdoors.
- **Contraindicated environments**
Environments in which the product may be inappropriate:
 - In the rain.
- **Other indicated factors**
Other factors or situations the product is intended to address:
 - Use by children. *Only if used with variants: Simplified keyboard*
 - Early stage of dementia. *Only if used with variants: Simplified keyboard*
 - Audio substitution for printed material.
 - Listening to audiobooks (including magazines, newspapers, journals, encyclopedia, or computerized texts).
 - Literacy difficulties.
- **Other contraindicated factors**
Other factors or situations in which the product may be inappropriate:
 None specified.
- **Points to be considered in product selection**
 - Ensure that the audiobooks are available in the user's language.
 - Ensure that the recorder is equipped with color contrasted function buttons raised, shaped and tactile, with big letters or with symbols easy to read.
 - A table model is suitable for those who use the DAISY audio player mostly at home, or at workplace, placed on a fixed place.
 - An integrated CD, DVD player, card or USB stick reader may increase the variability of books that users can read or listen.
 - A DAISY audio player with USB connectivity and a CD-R/RW or a memory card drive, is suitable for users who want to connect the audio player to a PC without CD drive or without memory card reader.
 - The desktop version, placed on a fixed place, can be used indoor (e.g., at home, school, work, library).
 - A small pocket-size DAISY audio player is suitable for mobile reading and mobile listening.
 - Devices with Internet connectivity and access to online DAISY books libraries are suitable for voracious readers: ensure that the user can get Internet access.
 - Ensure that the DAISY audio player can also read newer and protected audiobooks and that an appropriate decryption key is installed on the device if the user wants to read (listen) both open and copyright protected audiobooks.
 - A DAISY audio player that can memorize many bookmarks is indicated for intensive book readers.
 - A DAISY audio player with text-to-speech features is suitable for users who want to get access to digital documents in different formats (DOC, PDF, HTM, TXT, e-PUB).
 - A simple DAISY audio player, without numeric keyboard, is suitable for children and for users with learning disabilities.
 - An additional headphone set is needed for private reading and in order not to disturb cohabitants.
 - Specialized DAISY audio players are available with an appropriate decryption key installed (for protected DAISY books that can only be opened using a key and can only be read through).

- Points to be considered in product fitting
 - Ensure that the user can switch on/off the DAISY audio player.
 - For a DAISY audio player with power supply, ensure that the user can plug the device to the electric socket.
 - Ensure that the user correctly locates and manages the principal function buttons: play, stop, forward, backward, up volume and down volume.
 - If the user encounters difficulties in understanding, increase volume and slow down the speech speed; if the user likes to listen faster, increase the speed.
 - For private listening, ensure that the user can find the headphone output and can plug and unplug the personal headphones.
 - Check if the user can place, replace, and find a bookmark.
 - In case the DAISY audio player is equipped with a numeric keyboard, ensure that the user correctly locates and manages the numeric keyboard for book reading navigation.
 - In case the DAISY audio player is equipped with an integrated CD drive, ensure that the user can correctly open the drive, insert the disc, close the drive, and remove the disc from the player at the end of the reading; tactile markers on the disc case may facilitate the audiobook CD management.
 - In case the DAISY audio player is equipped with an integrated memory card drive, ensure that the user can find the card slot, and correctly insert and remove the memory card.
 - In case the DAISY audio player is equipped with an USB connection, ensure that the user can find the USB slot, and correctly insert and remove the USB memory stick or USB cable.
 - In case the DAISY audio player is equipped with internet connectivity, ensure that user can get access to internet and to the libraries that may offer DAISY material.
 - In case of users who want to read copyright protected DAISY material, make sure that the DAISY device has an appropriate decryption key is installed.
 - Show and explain to the user how to start and stop a recording, and how to cancel a recording.
 - In case the DAISY audio player is equipped with an external microphone, ensure that the user can find the microphone slot, and correctly insert and remove the microphone jack.
 - Ensure that the user can replace or recharge the batteries; if USB recharging is required, make sure that user can connect batteries to USB charging point or station.
- Points to be considered in product use
 - Always switch off the DAISY audio player when not used.
 - Never leave the CD drive open; when the reading is finished, put the CD back in the case.
 - If the internal memory is full, delete records, change memory card, or transfer records to another device.
 - In case of a pocket-size DAISY player, check batteries power and take extra batteries for mobile use out of home.
 - If using a pocket-size Daisy player in movement, use a neck strap or hand strap.
 - In case of a pocket-size DAISY audio player, it is recommended to choose a fix place to store the device when it is not used.
 - Never use a DAISY audio player with headphones at the maximum volume, exposure to extremely loud sounds can produce hearing damage.
- Points to be considered in product maintenance / follow-up
 - Ensure that that batteries are fully charged or have enough power for use.
 - Remove the batteries from the device when it is not expected to be in use for a long time.
 - It is recommended to clean the function buttons frequently, especially in case of a portable DAISY audio player and mobile use out of home.
- Examples of products available on the market
 - Live product search in the EASTIN website <https://www.eastin.eu/en/searches/products/list?iso=221803>

Source

This Fact Sheet was compiled in 2021 by an international team of experts, to provide the initial knowledge base for a project ("An online system to assist the selection of assistive product") supported by the World Health Organization in 2020-2021 within the GATE Initiative (Global collaboration on Assistive Product). Fact Sheets were compiled for each of the 50 types of products included in the WHO APL (Assistive Product Priority List).

The team was composed of Renzo Andrich (Italy, group leader), Natasha Layton (Australia), Stefan von Prondzinski (Italy), Jerry Weisman (USA), Silvana Contepomi (Argentina) and Hasan Minto (Pakistan).

The project led to a prototype online tool called ASPREX (ASsistive PROduct EXplorer). At the end of the project, it was transferred to a WHO collaborating center (the Global Disability Hub in the UK), in view of possible future developments.