



Vass Kálmán

Audiotechnikai készülékek és
házi-mozi rendszerek jellemzői
angol nyelven



A követelménymodul megnevezése:

A műszaki cikkek(villamossági, világítástechnikai, elektrotechnikai, híradástechnikai, számítástechnikai termékek kéziszerszámok, kiségepek, vas-árúk eladásával

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MUNKKANYAG

AUDIOTECHNIKAI KÉSZÜLÉKEK ÉS HÁZIMOZI RENDSZEREK JELLEMZŐI ANGOL NYELVEN

ESETFELVETÉS – MUNKAHELYZET

Az audio-technikai készülékeket forgalmazó üzletbe magyar nyelven nem értő, az angol anyanyelvként, második nyelvként vagy idegen nyelvként beszélő vásárló érkezik. A vevő, érdeklődő fogadása, az áru ajánlása, bemutatása, a használattal kapcsolatos tudnivalók ismertetése, a termékszavatossági, jótállási igények érvényesítési feltételeinek ismertetése, a kereskedő feladata.

A bemutatott munkahelyzetek azt feltételezik, hogy a kereskedő személyes, közvetlen kapcsolatba kerül a vásárlóval, ami a hagyományos ill. az önkiválasztó értékesítési formára jellemző.

1. Mikro hifi rendszer és kiegészítőinek értékesítése

Az első munkahelyzetben olyan vevővel találkozunk, aki DVD lemezek lejátszására is alkalmas, iPod dokkolóval, saját színes kijelzővel és Karaoke funkcióval is rendelkező mikro hi-fi rendszert szeretne vásárolni. Az áru bemutatása folyamán a készülékkel kompatibilis médialejátszót, Bluetooth vagy hagyományos rendszerű fejhallgatót, dinamikus mikrofont és írható CD ill. DVD lemezeket is ajánl a kereskedő. A feladat megoldása során meggyőződik arról, hogy a boltban kínált termékek között van olyan készülék, ami megfelel a fentiekben részletezett elvárásoknak. Amennyiben szükséges igénybe veszi a gyártók által üzemeltetett angol nyelvű honlapokon található termék kiválasztó, termék összehasonlító oldalakat, az angol és magyar nyelvű használati utasítások segítségével a legfontosabb műszaki adatokat értelmezve meggyőződik az eszközök egymás közötti kompatibilitásáról, célnyelven mutatja be a működést. Felhívja a külföldi vásárló figyelmét arra is, hogy az Észak-Amerikában, Ausztráliában az európai szabványoktól való eltérések miatt egyes funkciók nem működnek megfelelően. Egyszerűen, tömören válaszol a vásárló kérdéseire, az elmondottakat szemlélteti.

2. Házimozi hangrendszer értékesítése

A második munkahelyzetben egy házimozi-rendszer vásárlásán töprengő vevő kér segítséget a kereskedőtől. A vásárló a döntés előkészítő, információgyűjtő szakaszban van.

SZAKMAI INFORMÁCIÓTARTALOM

Reading

Audio at home

"Home audio" encompasses a wide array of product categories, including everything from the tabletop alarm clock to the sophisticated range of wireless multi room hi-fi systems. The main categories might be detailed as portable devices, desktop devices, hi-fi devices, home cinema separates.

Portable audio

In the portable category you can find compact CD radios with or without cassette player. Some of them are featuring built-in USB port with MP3 playback.

Clock radios, personal radios, portable radios and world band receivers are the well known desktop devices.

Hi-fi devices consist of hi-fi systems and hi-fi separates. With multiroom systems you can listen to the music in any room, wire-free, with superb sound reproduction. Micro systems, mini systems, iPod hi-fi, and DAB systems are the subcategories of hi-fi systems. iPod speaker docks, iPod clock radios, iPod hi-fi and portable systems and iPod docks mean the iPod hi-fi category. Digital Audio Broadcasting systems give you a huge choice of digital radio stations. This new digital radio standard has the benefit to deliver radio stations without any interference and allows more interactivity.

You can build your own entertainment system with the help of separate hi-fi components. CD players, SACD players, minidisk recorders, cassette recorders, speakers and other accessories. Unlike an all-in-one system it's easy to upgrade a component by replacing it. If you prefer the warmth of vinyl to the depth of digital you can choose a turntable as well. Some players are able to convert your old records to MP3.

Cinema at home

A basic home cinema system is made up of speakers, including a subwoofer for bass sound, and a receiver, which amplifies and reproduces digitally compressed sound in full detail.

Sound formats from mono to DTS (Digital Theatre System)

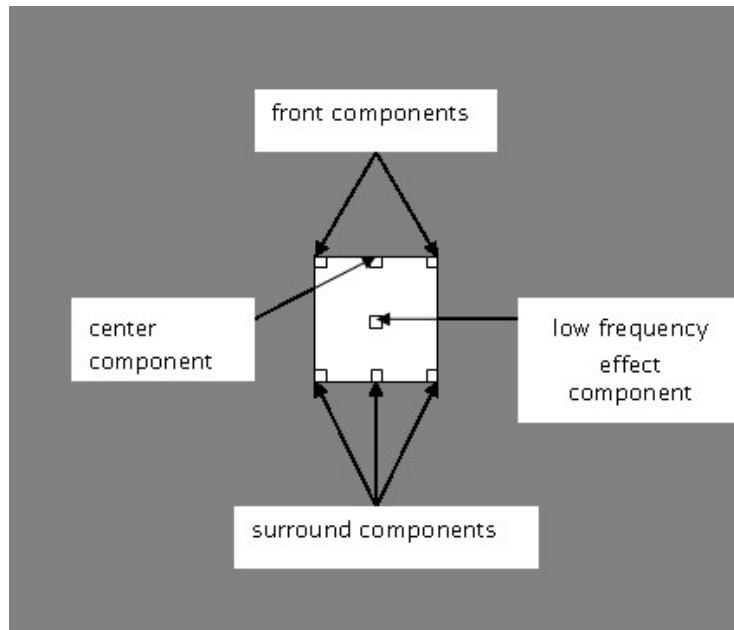


Figure 1

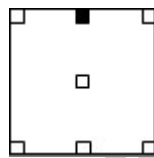


Figure 2 Mono

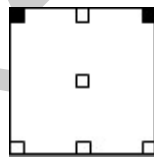


Figure 3 2-channel stereo

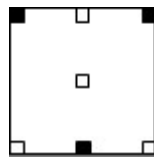


Figure 4 Dolby 2.0

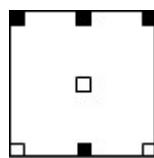


Figure 5 Dolby Prologic

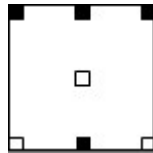


Figure 6 Dolby 4.0

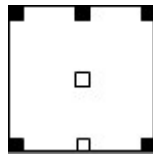


Figure 7 Dolby 5.0

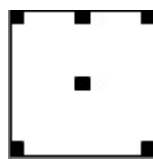


Figure 8 Dolby 5.1

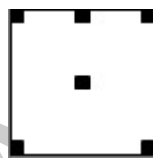


Figure 9 DTS (Digital Theatre System)

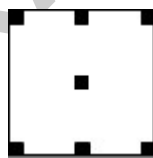


Figure 10 Dolby Digital EX

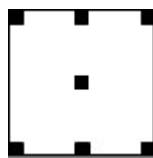


Figure 11 DTS ES

Audio on you

You can take all your music and video on the move with MP3/MP4 portable players. Personal CD, personal MD, tape and network Walkmans are in the personal stereo category.

Audio at work

This collection is made up of digital recorders, micro cassette recorders, traditional cassette recorders, and minidisc dictation machines.

The new features of home audio¹

Cut the cords

Bluetooth® is a short-range wireless system for communication of data and voice among your audio devices. Bluetooth® means both hardware and software that enables your gadget to communicate with other Bluetooth® devices.

Wi-Fi technology uses radio waves to create a wireless network for computers and other devices so you can stream data or access the Internet without the need for wires.

Just plug and play

USB Universal Serial Bus is a data port on audio devices, computers and peripherals. Connect your USB device to the USB port with the help of an USB cable. The audio formats that can be played back are as follows: ATRAC/MP3/WMA/AAC.

Digital audio formats

ATRAC (Adaptive Transform Acoustic Coding) is a data-compression process developed by Sony for minidisc use. Only the sound components detectable by the human ear are recorded, enabling a 64 mm diameter disc to store 80 minutes of high-quality stereo audio. Using the Sony ATRAC compression system, you can create an ATRAC CDs. Stored on one CD-R/-RW your music can then be played back on a compatible CD player.

MP3 is a standard data reduction system for audio files

WMA (Windows Media Audio) is a digitally compressed music format.

AAC (Advanced Audio Coding) is a digitally compressed music format that succeeds MP3. AAC technology provides more efficient audio compression.

HDMI™ (High Definition Multimedia Interface) is a type of connection, designed to carry high quality digital video and audio content. It is ideal for Blue-ray Disc™ 1080p HD movie playback. Home cinema systems usually feature this port but you can find hi-fi systems equipped this port as well.

¹Source:http://www.sony.co.uk/glossary/ShowGlossary.action?site=odw_en_GB§iontype=Search§ions=Glossary

TANULÁSIRÁNYÍTÓ

1. Tuning in

Read the statements (1–12). Study the picture (figure 7) and the technical specifications² of this hi-fi system then fill in the chart below. Put a tick (✓) if the sentence is true or a cross (✗) if it is false. Focus on the statements. Not all the technical details are necessary to fill in the chart. Consult your dictionary if you need. Two examples are given.



Figure 12³

1.	It has got a superheterodine tuner, a CD/DVD player a remote commander and two front speakers.	✓
2.	There is a HDMI connection, to carry high quality digital video and audio content.	✗
3.	This micro Hi-Fi system features a 7" (inch) LCD Display Screen on the main unit.	
4.	It has a 3 DVD/VCD/CD changer with MP3 and DivX playback.	
5.	With the help of this system you can listen to music stored in your iPod.	
6.	If you want you can connect an optional USB device to the USB port and transfer music.	
7.	The remote control operates with LR03 (size AAA) batteries.	
8.	You can use the Karaoke function by setting the system to this mode.	
9.	This unit is not supplied with an AM loop antenna.	
10.	The power output of the amplifier section is 105W+105W RMS (Root Mean Square)	
11.	You can connect an optional digital component (such as home cinema amplifier) to this unit with the help of an optical cable.	

² Source: <http://www.sony.com.au/product/mhc-gzr33di>

³ Source (photo): <http://www.sony.com.au/product/mhc-gzr33di>

12.	This micro system incorporates Bluetooth wireless technology.	
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SPECIFICATIONS	
Main unit	
DISPLAY: 7" LCD	
AUDIO POWER SPECIFICATIONS	
POWER OUTPUT AND TOTAL HARMONIC DISTORTION	
With 6 ohm loads, both channels driven, from 120 □ 10,000 Hz; rated 85 watts per channel minimum RMS power, with no more than 1% total harmonic distortion from 800 milliwatts to rated output.	
Amplifier section	
The following measured at AC 230 V, 50/60 Hz	
Power output (rated): 105 W + 105 W (at 6 Ω, 1 kHz, 1% THD) RMS output power (reference): 180 W + 180 W (per channel at 6 Ω, 1 kHz, 10% THD)	
Inputs	
VIDEO/SAT VIDEO IN (phono jack): 1 Vp-p, 75 ohms	
VIDEO/SAT AUDIO IN L/R (phono jacks): voltage 250/450 mV, impedance 47 kilohms	
MIC 1/MIC 2 (phone jacks): sensitivity 1 mV, impedance 10 kilohms	
Outputs	
VIDEO OUT (phono jack): max. output level 1 Vp-p, unbalanced, Sync negative, load impedance 75 ohms	
COMPONENT VIDEO OUT: Y: 1 Vp-p, 75 ohms Pb/Cb: 0.7 Vp-p, 75 ohms Pr/Cr: 0.7 Vp-p, 75 ohms	
DVD DIGITAL OUT (Square optical connector jack, rear panel): Wavelength 650 nm	
PHONES (stereo mini jack): accepts headphones of 8 ohms or more	
SUBWOOFER OUT: Voltage 1 V, impedance 1 kilohm	
FRONT SPEAKER: Use only the supplied speaker	
(USB) port: Type A (1) Maximum current: 500 mA	
Disc player section	
System: Compact disc and digital audio and video system	
Laser Diode Properties	
Emission duration: Continuous	
Laser Output*: Less than 44.6μW * This output is the value measurement at a distance of 200mm from the objective lens surface on the Optical Pick-up Block with 7mm aperture.	
Frequency response DVD (PCM 48 kHz): 2 Hz □ 22 kHz (□}1 dB) CD: 2 Hz □ 20 kHz (□}0.5 dB)	
Video colour system format North American model: NTSC Other models: NTSC and PAL	
Tuner section	
FM stereo, FM/AM super heterodyne tuner	
FM tuner section	
Tuning range: 87.5 □ 108.0 MHz (50 kHz step)	
Antenna:	

FM lead antenna
Antenna terminals: 75 Ω unbalanced
Intermediate frequency: 10.7 MHz
AM tuner section
Tuning range:
European model: 531 □ 1,602 kHz (with 9 kHz tuning interval)
Antenna: AM loop antenna
Antenna terminals: External antenna terminal
Intermediate frequency: 450 kHz
Speaker
Front speaker (SS-GZR77D) for MHCGZR33Di
Speaker system:
3-way, Bass reflex, Magnetically shielded
Speaker unit Subwoofer: 130 mm, cone type
Woofer: 130 mm, cone type
Tweeter: 50 mm, horn type
Rated impedance: 6 ohms
Dimensions (w/h/d): Approx. 252 × 349 × 265 mm
Mass: Approx. 4.8 kg
General
Power requirements
European model: AC 230 V, 50/60 Hz
Power consumption: 150 W
Dimensions (w/h/d) (excl. speakers)
Approx. 280 × 326 × 440 mm
Mass (excl. speakers) : Approx. 11.4 kg
Supplied accessories: Remote Commander (1) AM loop antenna (1) FM lead antenna (1) Video cord (1) Speaker foot (8) R6 (Size AA) batteries (2)
Supported file formats
MP3 (MPEG 1 Audio Layer-3)
File extension: .mp3
Bitrate: 32 □ 320 kbps, VBR
Sampling frequencies: 32/44.1/48 kHz
WMA
File extension: .wma
Bitrate: 48 □ 192 kbps
Sampling frequencies: 44.1 kHz

AAC
File extension: .m4a
Bitrate: 48 □ 320 kbps
Sampling frequencies: 44.1 kHz
DivX
File extension: .avi/.divx
Video codec: DivX video
Bitrate: 8 Mbps (MAX)
Frame rate: 30 fps
Resolution: 720 × 576
Audio codec: MP3
MPEG4
File format: MP4 File Format
File extension: .mp4/.m4v
Video codec: MPEG4 Simple Profile (AVC is not compatible.)
Bitrate: 4 Mbps
Frame rate: 30 fps
Resolution: 720 × 576
Audio codec: AAC-LC (HE-AAC is not compatible.) DRM: Not compatible Design and specifications are subject to change without notice.
<input type="checkbox"/> Standby power consumption: 0.5 W
<input type="checkbox"/> Halogenated flame retardants are not used in the certain printed wiring boards

2. Presentation

Some expressions are missing from the following presentation. Try to fill in the gaps with the proper word from the box. Consult your dictionary or visit this website if you need: <http://www.sony.co.uk/product/hed-dj/mdr-xb700>

headphones

acoustics

driver unit

earpads

plug

frequency

impedance

capacity

A set of closed dynamic (0) *headphones* with extra large 50mm (1) that provides you extra bass sound. The tightly sealed (2) give you luxury soft touch and inimitable (3) when you're listening to music. They feature the (4) of 3Watt. The range of (5) is 3 – 28,000 Hertz. The (6) of this device is 24 Ohm. These headphones are equipped with L-shaped mini (7) with gold coating.



Figure 13⁴

3. Which iPod are you?



Figure 14⁵

With the help of this website help your customer in finding the proper iPod. Customer's requirements are the followings:

- Price: not more than 40.000 HUF or 150 USD
- Colour: silver
- Capacity: at least 8GB
- Display: min.: 2.2 inch
- Navigation: Voice Over function in English

Singing along: Karaoke

⁴ Source: <http://www.sony.co.uk/product/hed-dj/mdr-xb700>

⁵ Source: <http://www.apple.com/ipod/compare-ipod-models>

Providing that you have a microphone you can use the karaoke function of your hi-fi system (Figure 1). Look at the technical specification of this device. Match the features (A–F) with the data (1–6).



Figure 15⁶

Technical Data

A	Transducer principle	1	350 Ohm
B	Nominal impedance	2	80 - 12.000 Hz
C	Frequency response	3	dynamic
D	Dimensions	4	cardioid
E	Weight	5	48 x 180 mm
F	Pick-up pattern	6	XLR-3
G	Connector	7	330 g

Write your answer in this chart. The first answer is given.

A	B	C	D	E	F	G
3						

⁶Source:

http://www.sennheiser.com/sennheiser/home_en.nsf/root/private_microphones_wired_evo800_009894?Open&row=1

ÖNELLENŐRZŐ FELADATOK

1. feladat

Answer the questions. Do this exercise in writing.

a) What are the main categories of home audio?

b) Make a short list of portable audio devices.

c) Make a short list of desktop audio devices.

d) What is the difference between Hi-fi systems and hi-fi separates?

e) What is a DAB system good for?

f) What are the elements of iPod hi-fi category?

g) What is a hi-fi separates?

h) What is the main advantage of having a separate hi-fi component?

i) How can you convert your old vinyl record to MP3 format?

j) What are the elements of a basic home cinema system?

k) What devices are called by the name of personal stereo?

l) How many different dictation machines do you know?

m) What does Bluetooth means?

n) What does Wi-Fi means?

o) What are the differences between Bluetooth and Wi-Fi?

p) What does USB mean?

q) What audio formats can be played back with the help of a USB connection?

r) What is HDMI?

t) What is HDMI good for?

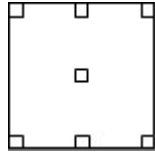
2. feladat

What home cinema sound formats do you know? Make sketches.

.....

.....

.....



.....

3. feladat

Look at the first picture (Figure1) again. Brush up your memory to answer these questions. Do this exercise in writing.

a) What are the main units of the micro hi-fi system introduced in the "Tuning in" section? (Figure 1)

b) Is it equipped with HDMI connection?

c) What kind of LCD has it got?

d) How many disks can be stored in its changer?

e) What is the power output?

f) How many inputs has it got? Make a list.

g) How many outputs has it got? Make a list.

h) Can you hook up an optional subwoofer component? Has it got a subwoofer out jack connection?

What is the difference in colour formats between the European and North American models?

i) How wide is the FM tuning range?

J) What kind of antenna is packed for FM tuner?

k) How wide is the AM tuning range?

l) What kind of antenna is packed for AM tuner?

m) What kind of speaker system has it got?

n) What are the supplied accessories? Make a list.

p) What are the supported file formats?

q) What is the standby consumption? Is it an energy vampire?

4. feladat

Presentation

Translate these sentences into English: Do this exercise in writing.

1. Dinamikus fejhallgató, ami a mély hangok valóság-hű visszaadása érdekében extra nagyméretű 50 mm-es középrésszel készült.
2. A fület körülvevő finom, puha párnázott rész légmentesen záródik. Ebből adódóan egyedülállóan jó akusztikai hatást biztosít.
3. A kimeneti teljesítmény 3 watt.
4. A frekvencia-átvitel: 3- 2800 Hz-ig terjed.
5. A fejhallgató impedanciája 24 Ohm.
6. A fejhallgató L-alakú aranyozott bevonattal rendelkező csatlakozódugóval van ellátva.

5. feladat

Which iPod are you?

What things would you take into consideration when choosing or offering an iPod? Make a list.

6. feladat

Singing along: Karaoke

a) What are the most important technical details of a karaoke microphone? Make a list.

b) Look at the technical specification of the Sennheiser microphone in "Singing alone: Karaoke" exercise. What type of connector is it equipped with?

c) What sort of microphone input is the micro hi-system equipped with?

c) Look at this cable. What purpose do you think is it good for? Write down your answers.



Figure 20⁷ Female XLR3 to male 3.5mm Jack

⁷ Source: http://www.giantsound.hu/szerelt_kabelek.html

MEGOLDÁSOK

1. feladat

Tuning in

1	2	3	4	5	6	7	8	9	10	11	12
✓	✗	✓	✓	✓	✓	✗	✓	✗	✗	✓	✗

2. HDMI port is not mentioned in the specification. 7. Remote control works with AA size batteries. 9. This unit is supplied with an AM loop antenna. 10. The power output of the amplifier section is 180W+180W (RMS). 12. Bluetooth is not mentioned in the specification.

2. feladat

Presentation

(1) driver unit, (2) earpads, (3) acoustics, (4) capacity, (5) frequency, (6) impedance, (7) plug

3. feladat

Which iPod are you?

iPod Nano 8GB fulfils the requirements

- Price: 149 USD
- Colours available: silver, blue, orange, pink, green
- Capacity: at least 8GB
- Display: min.: 2.2 inch
- Navigation: Voice Over function in English

4. feladat

Singing along: Karaoke

A3, B1, C2, D5, E7, F4, G6

ÖNELLENŐRZŐ FELADATOK MEGOLDÁSAI:

1. feladat

a) Answer: portable devices, desktop devices, hi-fi devices, home cinema separates.

Optional answers might be accepted such as analogue devices and digital devices.

b) Answer: compact CD radios with or without cassette player

Optional answer: almost everything can be designed to be portable

c) Answer: clock radios, personal radios, portable radios and world band receivers

Optional answer: "desktop" as an expression might be misleading because there are some devices that you normally do not use on the top of your desk e.g. kitchen radios are fixed under the cupboard.

d) Answer: a hi-fi system is an "all-in-one" or a monoblock device.

e) Answer: With Digital Audio Broadcasting radios you can receive digital radio stations.

Comments: The first pilot DAB transmission⁸ was started by Hungarian Radio and Antenna Hungária on December 1, 1995 on the occasion of the 70th anniversary of birth of the Hungarian radio broadcasting. The pilot DAB system offered the possibility to transmit eight radio programs, of which four were used by Hungarian Radio for the purposes of broadcasting MR1 Kossuth, MR2 Petőfi, MR3 Bartók Radio and Classic+. In addition to the programs, program accompanying information could also be found (Programme Associated Data, PAD). Transmission took place in Budapest using two transmitters. The pilot DAB multiplex was extended by Danubius and Sláger channels in September, 2008.

f) Answer: iPod speaker docks, iPod clock radios, iPod hi-fi and portable systems and iPod docks

g) Answer: CD players, SACD players, minidisk recorders, cassette recorders, speakers and other accessories.

Comments: record players, amplifiers, receivers, tape decks are not mentioned in "tanulásiirányító" section.

h) Answer: it is easy to replace a component if you wish to keep your hi-fi tower up-to-date

i) Answer: recently introduced record players are able to convert your old records to MP3.

Comments: visit this website: <http://www.youtube.com/watch?v=V3c2ijB4DBM>

View this video demo on converting Vinyl to MP3

j) Answer: speakers, including a subwoofer a receiver or an amplifier

k) Answer: personal CD, personal MD, tape and network walkmans, mp3/mp4 players.

Comments: Walkman, DiscMan and iPod are registered trademarks.

⁸ Source: http://www.ahrt.hu/Digitalis_atallas/Digitalis%20kiserletek/DAB.aspx?sc_lang=en

l) Answer: digital recorders, micro cassette recorders, traditional cassette recorders, and minidisc dictation machines

m) Answer: Bluetooth is software and hardware that enables your device to communicate with other devices. It is a short-range wireless system for communication of data and voice. Bluetooth is a registered trademark.

n) Answer: Wi-Fi is a trademark of the Wi-Fi Alliance that may be used with certified products that belong to a class of wireless local area network. A communication system that uses low-power microwave radio signals to connect computers, and other devices.

o) Answer⁹: Bluetooth and Wi-Fi are both wireless networking standards that provide connectivity via radio waves. The main difference: Bluetooth's primary use is to replace cables, while Wi-Fi is largely used to provide wireless, high-speed access to the Internet or a local area network.

p) Answer: USB stands for Universal Serial Bus that is a data port on audio devices.

q) Answer: ATRAC/MP3/WMA/AAC

r) Answer: HDMI stands for High Definition Multimedia Interface.

S) Answer: This connection is ideal for Blue-ray Disc™ systems.

2. feladat

Answer: Dolby 2.0, Dolby Prologic, Dolby 4.0, Dolby 5.0, Dolby 5.1, DTS, Dolby Digital EX, DTS ES. The latest home cinema system is not mentioned in the "tanulásiirányító section. Visit this website and look at the arrangement of the speakers.

<http://www.dolby.com/uploadedFiles/Assets/US/Doc/Consumer/Dolby-Home-Theatre-Speaker-Guide-7.1>

3. feladat

a) Answer: This device contains an amplifier, a tuner, a disc player, two speakers and the remote control.

b) Answer: HDMI port is not mentioned in the specification.

c) Answer: you can find a 7" LCD panel display is on the main unit.

d) Answer: you can store 3 discs in the changer.

⁹Source: <http://www.wirelessgalaxy.com/researchcenter/difference-between-bluetooth-and-wi-fi.asp>

e) Answer: The power output depends on the type of the measurement. THD stands for total harmonic distortion. The bigger power output the bigger distortion. 2X180W (10% THD) or 2X105W (1% THD)

f) Answer: you can plug in two microphones and there is a video/sat video input and an audio/sat audio input.

g) Answer:

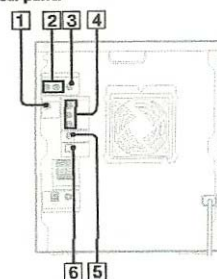
- video out
- component video out
- digital video out (optical connector)
- phones
- subwoofer out (subwoofer is an optional component)
- front speaker out
- USB port

h) Answer: Yes, you can find a subwoofer out jack at the back of this device. See Figure 21.

Hooking up optional components

To enhance your system, you can connect optional components. Refer to the operating instructions provided with each component.

Rear panel



1 SUBWOOFER OUT jack
Connect the audio input jack of an optional subwoofer*.

Figure 21¹⁰ Hooking up an optional subwoofer

i) Answers: Video colour system format North American model is NTSC. Other models are ready for both NTSC and PAL system.

j) Answer: FM tuner ranges from 87.5 MHz to 108.0 MHz. Every step is 50 kHz

k) Answer: a simple lead antenna that you have to extend horizontally

¹⁰ Source: Operating instructions of Sony MHC-GZR33DI

l) Answer: AM tuning range is between 531 kHz and 1,602 kHz. The intervals are 9 kHz.

m) Answer: a loop antenna

n) Answer: The speaker system is a 3-way, bass reflex, and magnetically shielded construction.

o) Answer: The supplied accessories are the followings: a remote commander, an AM loop antenna, an FM lead antenna, a video cord, 8 speaker feet (4 for left 4 for right), two pieces of R6 type (size AA) batteries.

p) Answer: This audio system supports MP3, WMA, AAC, DivX and MPEG 4 files.

q) Answer: The standby power consumption is 0.5W. This consumption is necessary to enable this device to receive orders from the remote commander. It is not an "energy vampire".

Comments: Read this article¹¹ about "energy vampires"

Standby power, also called vampire power, vampire draw, phantom load, or leaking electricity, refers to the electric power consumed by electronic appliances while they are switched off or in a standby mode. A very common "electricity vampire" is a power adapter which has no power-off switch. Some such devices offer remote controls and digital clock features to the user, while other devices, such as power adapters for laptop computers and other electronic devices, consume power without offering any features.

4. feladat

1. A set of closed dynamic headphones with extra large 50mm driver unit that provides you extra bass sound.

Optional answers:

- a pair of headphones....
- In order to get an extra bass sound

2. The tightly sealed earpads give you luxury soft touch and inimitable acoustics when you're listening to music.

Optional answer:

- The earpads are tightly sealed so that the acoustics will be perfect...

3. Answer: They feature the capacity of 3Watt.

¹¹ Source: http://en.wikipedia.org/wiki/Standby_power

Optional answer: the output power is 3 W.

4. Answer: The range of frequency is 3 – 28,000 Hertz.

Optional answer: the frequency range is....

5. The impedance of this device is 24 Ohm.

6. These headphones are equipped with L-shaped mini plug with gold coating.

Optional answer:are supplied with.....

5. feladat

Answer: price, capacity, display, navigation, charging time, battery life, size, weight, colour, accessories

Optional comment: reliability, design, trade mark preference might be important.

6. feladat

Answer: transducer principle, pick-up pattern, nominal impedance, frequency response, dimensions, weight, connector type

IRODALOMJEGYZÉK

FELHASZNÁLT IRODALOM

<http://www.sony.hu/section/kezdolap>

<http://www.panasonic.hu/ugyfelszolgalat/>

<http://www.philips.hu/http://>

<http://www.sennheiser.hu/>

<http://www.sony.co.uk/section/home>

<http://www2.panasonic.com/consumer-electronics/shop/Audio>

<http://www.philips.co.uk/>

http://www.sennheiser.com/sennheiser/home_en.nsf

<http://www.dolby.com/consumer/index.html>

Házimozi – enciklopédia

Kossuth Kiadó, 2005

Komáromi Zsombor: A házimozi

Kossuth Kiadó, 2003

AJÁNLOTT IRODALOM

[1]ACC/A CD-lejátszók, music centerek és discmanek csoportosítása, főbb jellemzői, minőségi követelményei

Dr. Kovács K-Fabula L: Áruismeret II. Szaktudás Kiadó Ház, Budapest, 2003. 247–252.o.

[1]ACC/Az MP3 és MP4 készülékek csoportosítása, főbb jellemzői, minőségi követelményei

Fabula László: Műszaki cikkek eladásával kapcsolatos követelmények. Duál Budapest Bt, Budapest, 2009.

ACC/Az erősítők csoportosítása, főbb jellemzői, minőségi követelményei

Dr. Kovács K-Fabula : Áruismeret II. Szaktudás Kiadó Ház, Budapest, 2003.

ACC/A hangszórók csoportosítása, főbb jellemzői, minőségi követelményei

Dr. Kovács K–Fabula L: Áruismeret II. Szaktudás Kiadó Ház, Budapest, 2003.

<http://www.sony.hu/section/kezdolap>

<http://www.panasonic.hu/ugyfelszolgalat/>

<http://www.philips.hu/http:/>

<http://www.sennheiser.hu/>

<http://www.sony.co.uk/section/home>

<http://www2.panasonic.com/consumer-electronics/shop/Audio>

<http://www.philips.co.uk/>

http://www.sennheiser.com/sennheiser/home_en.nsf

<http://www.dolby.com/consumer/index.html>

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Kossuth Kiadó, 2003

A(z) 0123-06 modul a36-os szakmai tankönyvi tartalomeleme felhasználható az alábbi szakképesítésekhez:

A szakképesítés OKJ azonosító száma:	A szakképesítés megnevezése
31 341 01 0010 31 03	Műszakicikk eladó
51 341 01 0000 00 00	Műszakicikk-kereskedő

A szakmai tankönyvi tartalomelem feldolgozásához ajánlott óraszám:
15 óra

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A kiadvány az Új Magyarország Fejlesztési Terv
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Kiadja a Nemzeti Szakképzési és Felnőttképzési Intézet
1085 Budapest, Baross u. 52.
Telefon: (1) 210–1065, Fax: (1) 210–1063

Felelős kiadó:
Nagy László főigazgató