

# Super Bit Mapping Adaptor

## Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

## Mode d'emploi

Avant d'utiliser l'appareil, veuillez lire attentivement ce manuel ; conservez-le pour une référence ultérieure.

EN

F

**SBM**  
Super Bit Mapping

**SBM-1**

## WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

## Owner's Record

The model number is located on the bottom of the unit, and serial number is located inside the battery compartment.

Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. SBM-1 \_\_\_\_\_

Serial No. \_\_\_\_\_

## For Customers in the USA

### WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the

receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

---

## Welcome!

---

Thank you for purchasing the Sony Super Bit Mapping Adaptor. Here are some of the capabilities and features you'll discover with the Super Bit Mapping Adaptor.

### Super bit mapping function

With this function, digital recording with higher quality sound can be obtained. (p.13)

### High-precision pulse A/D converter

You can digitize delicate analog sound with this converter.

### Excellent sound quality

A digital recording is made with a lower distortion rate (LINE input: less than 0.008 %) and a superb signal-to-noise ratio (MIC input: more than 60 dB, LINE input: more than 90 dB).

### A variety of input/output jacks

- Phone jacks or stereo minijack are selectable for MIC input
- Gold plated phono jacks for LINE input
- Special digital I/O cable and digital I/O jack are equipped for digital input/output

# Table of Contents

## Accessories for outdoor use

Higher sound digital recording is also possible outdoors with the supplied carrying case and battery pack (not supplied).

### Note

Before you record one-time events, you may want to make a trial recording to make sure that the SBM-1 is working properly.

This unit is not designed for business or commercial use. Never attempt to modify or tamper the unit so that it can be connected to other business or commercial equipment. Do not use this unit for recording computer data etc. either.

## Basic Operations

Recording through a Microphone to a Portable DAT .....	4
--	---


## Advanced Operations

Using Optional Components .....	8
Using House Current .....	11

## For your Information

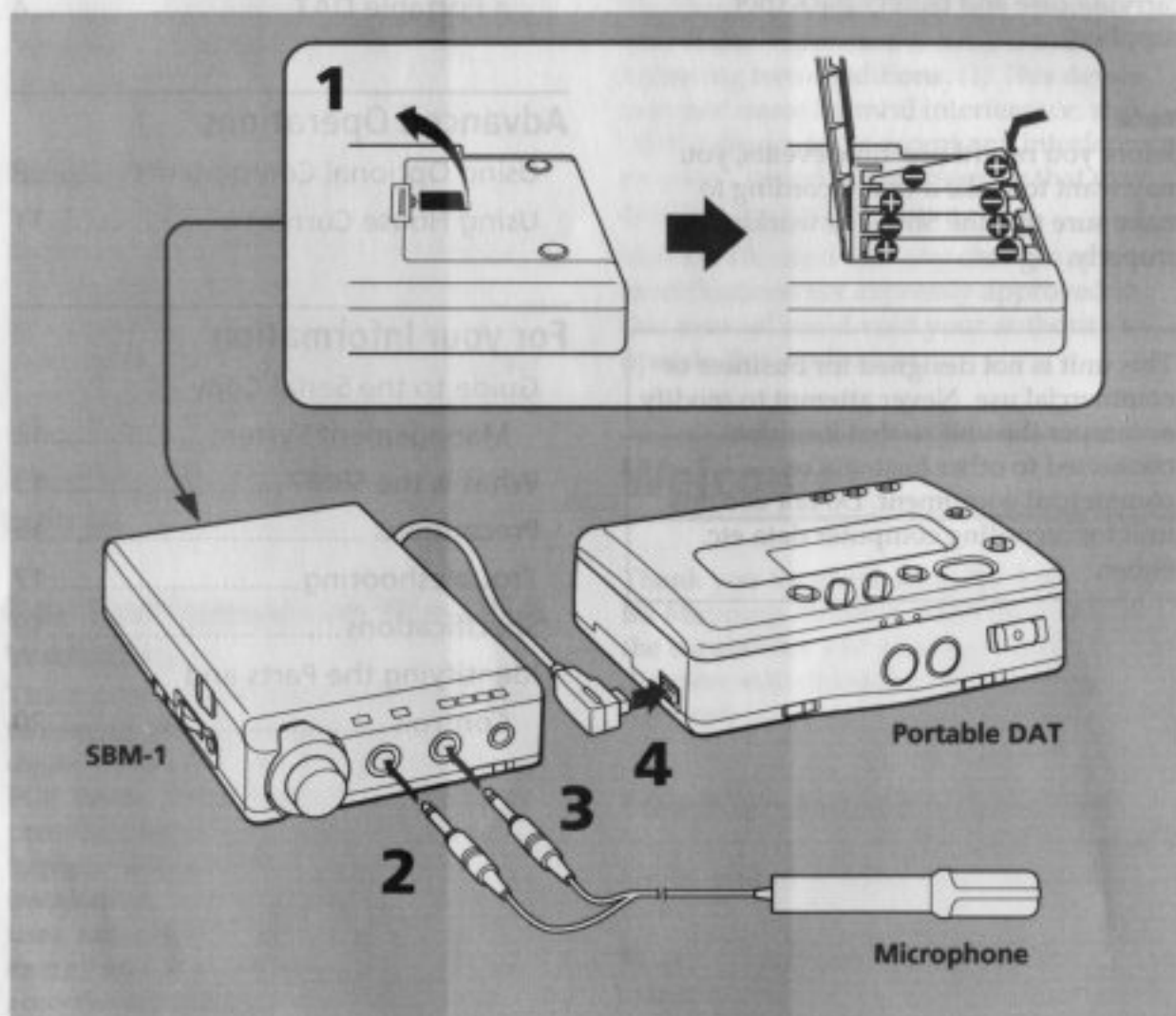
Guide to the Serial Copy Management System .....	12
What is the SBM? .....	13
Precautions .....	15
Troubleshooting .....	17
Specifications .....	18
Identifying the Parts and Controls .....	20

EN

In this manual the icon  is used, which indicated hints and tips for making the task easier.

# Recording through a Microphone to a Portable DAT

## Setting up



**1** Insert four size AA(R6) alkaline batteries with the correct polarity.

**2** Connect a microphone.

If the microphone has a power switch, turn it on. Hum or noise may be generated or recorded on your tape if the power is turned off.

**3** Set MIC/LINE IN switch to MIC.

**4** Connect a portable DAT.



The recording characteristics are affected by the type of microphone you use.

For a high quality recording, use the ECM-999/-959A (optional).

#### Note

When you record muting, record with REC LEVEL set to 0, not with the microphone turned off.

#### Notes

- The batteries may become hot if you record 2 hours continuously, but this is not a malfunction. However, take care because the heat of the batteries may discolor the table, carpet, or other surface on which you have placed the unit.
- You cannot use the RMT-D7 remote commander (optional) when the TCD-D7 portable DAT recorder (optional) is connected.

## Connecting another microphone

### When you connect a monaural microphone with phone plug:

Connect the microphone to MIC L/MONO. Input sound is recorded on both L and R sides.

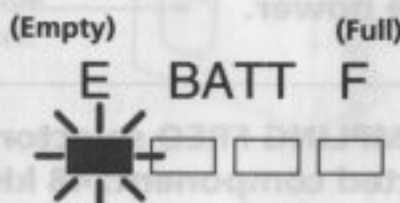
### When you connect a microphone with stereo mini-plug:

- Connect the microphone to MIC PLUG IN POWER jack.
- Be sure to disconnect the microphone from MIC L/MONO and MIC R jacks, for these jacks has priority over MIC PLUG IN POWER jack.
- When you connect a microphone with plug-in-power, you don't need to supply any power sources. The power is supplied from SBM-1 through the plug.

## When using on dry batteries

Battery life is approximately 2 hours when recording continuously.

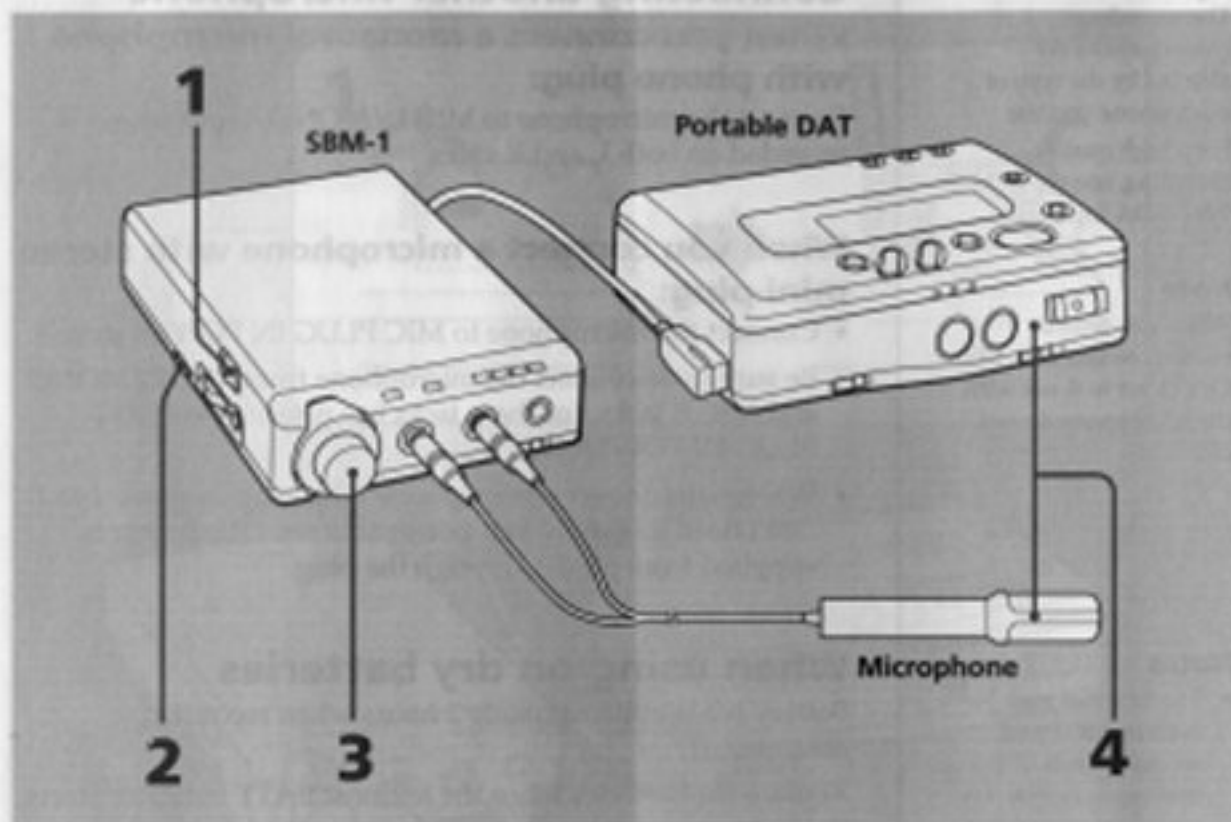
Replace the batteries when the leftmost BATT indicator starts flashing.





## → Recording through a Microphone to a Portable DAT

### Recording



- 1 Turn on the power.**
- 2 Set the SAMPLING FREQ selector to the same frequency as the connected component: 48 kHz, 44.1 kHz or 32 kHz\*.**  
(Sampling frequency → p.14)  
\* SBM process does not work if you select 32 kHz.
- 3 Turn REC LEVEL L/R so that the volume of output equipment is about -12dB.**  
Turn it down when OVER L/R indicator of SBM-1 lights up.
- 4 Start recording.**



When recording relatively quiet sound, lower the recording level and move the microphone as close as possible to the source. You should be able to make a clear recording with the least amount of noise.



When you record with long play mode, it is useful to set the sampling frequency to 32 kHz. In this case, even though the SBM (super bit mapping) process does not work, you can use the SBM-1 as a microphone amplifier.

## Other operations

### To turn off the power

Keep sliding POWER until BATT indicator goes off.

### When OVER L/R indicator lights up

The recording level is set too high. Lower the level in order to avoid distortion of the recorded sound. When you record loud sound, turn MIC ATT (microphone attenuator) switch to 20 dB. Normally set the switch to 0 dB.

### To monitor the sound

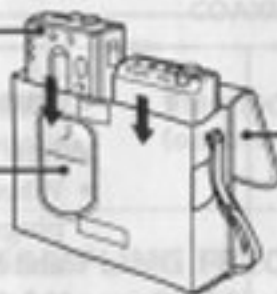
Connect headphones to REC MONITOR jack. You can monitor the sound output from the SBM-1. You cannot monitor the sound being recorded.

### Using supplied carrying case

Insert each piece of equipment as illustrated below.

Portable DAT

Operate from the window.

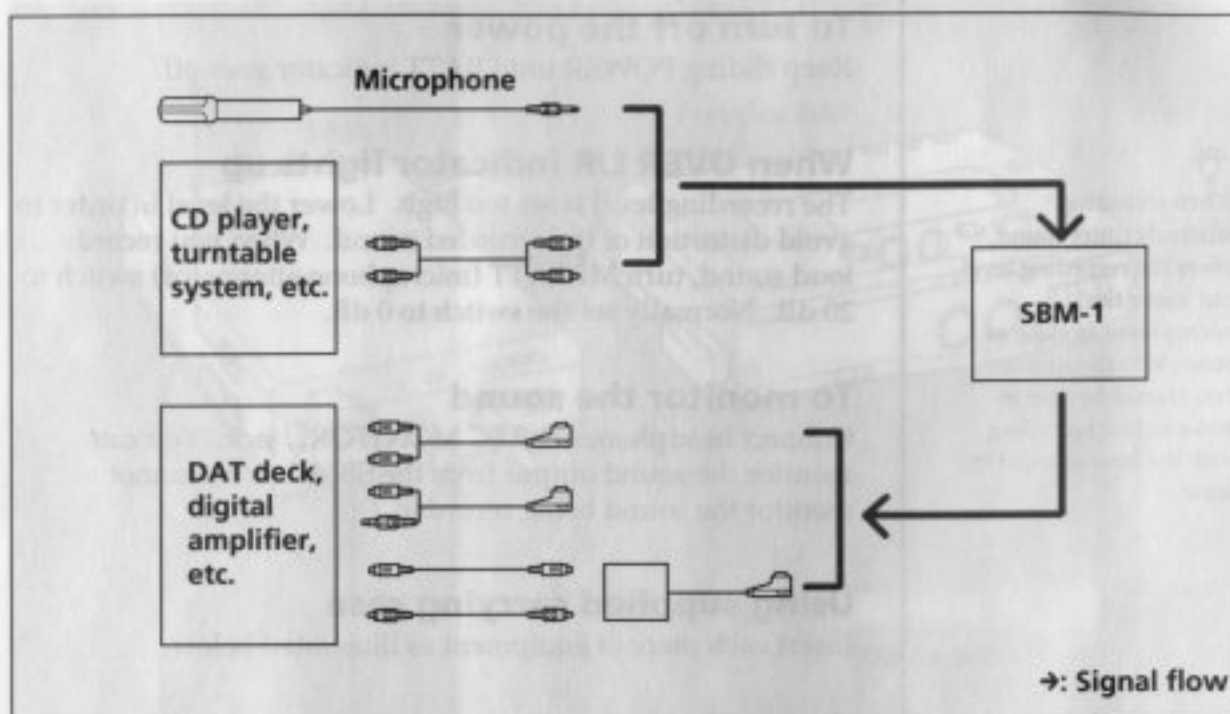


Operate the SBM-1 with the cover open

## Using Optional Components

You can also record to a DAT deck, etc.

Connect it to DIGITAL I/O jack on the side of SBM-1 with a digital cable or adaptor kit.



### Note

When both MIC L/MONO and MIC R jacks, and MIC PLUG IN POWER jack are connected, the former has priority over the latter.



When you connect the microphone with plug-in-power, you don't need to supply any power sources. The power is supplied from SBM-1 through the plug.

## 1

### Connect an input source to SBM-1.

#### When you connect a microphone

- When you connect a stereo microphone with phone plugs, connect the microphone to MIC L/MONO and MIC R. For monaural recording, connect the microphone to MIC L/MONO.
- When you connect a microphone with stereo mini-plug (ECM-959A, ECM-737, etc, optional), connect the microphone to MIC PLUG IN POWER.
- Turn on the power of the microphone if it has a power switch.
- Set MIC/LINE IN switch to MIC on the side of SBM-1.

#### When you connect audio equipment

- Connect the equipment to LINE IN on the rear of SBM-1 (using with RK-C710HS (1m, optional), etc.).
- Set MIC/LINE IN switch to LINE IN on the side of SBM-1.



**Notes**

- Connect the input/output jacks of the POC-DA12/-DA12M optional cable to the output equipment with the correct jack, for each jack is a different shape.
- Make sure that the switch on the connecting cable is set to DIGITAL position before you start recording.



By connecting the adaptor kit RM-D3K, you can use cables that have rectangular optical jacks, or coaxial-digital phono jacks on both ends. You can also remotely control the equipment with the remote controller supplied with RM-D3K.

**Note**

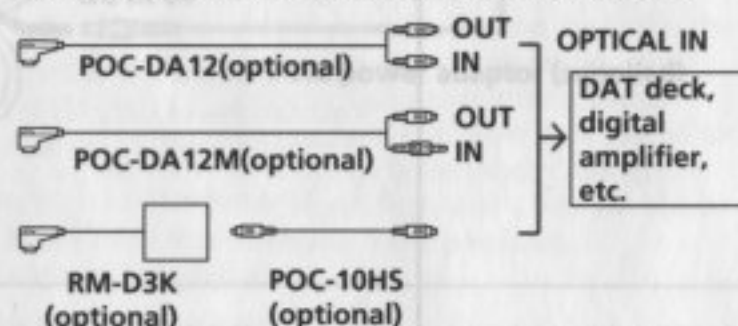
Be sure not to change the SAMPLING FREQ selector setting during recording. Otherwise, noise may be generated or recorded on your tape.

- SBM (super bit mapping) process does not work if you select 32 kHz. In this case, you can use the SBM-1 only as microphone amplifier.

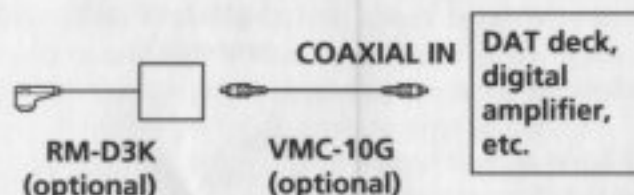
## 2 Choose the cable according to the jack type of the output equipment as listed below, and connect it to SBM-1.

**Rectangular optical jack:**

Connect the cable to the OPTICAL IN (optical input) jack of a DAT deck, digital amplifier, etc.

**Phono jack with coaxial digital:**

Connect the cable to the COAXIAL IN (digital input) jack of a DAT deck, digital amplifier, etc.



## 3 Set the SAMPLING FREQ selector to 48 kHz, 44.1 kHz or 32 kHz\*.

## 4 Turn on the power.

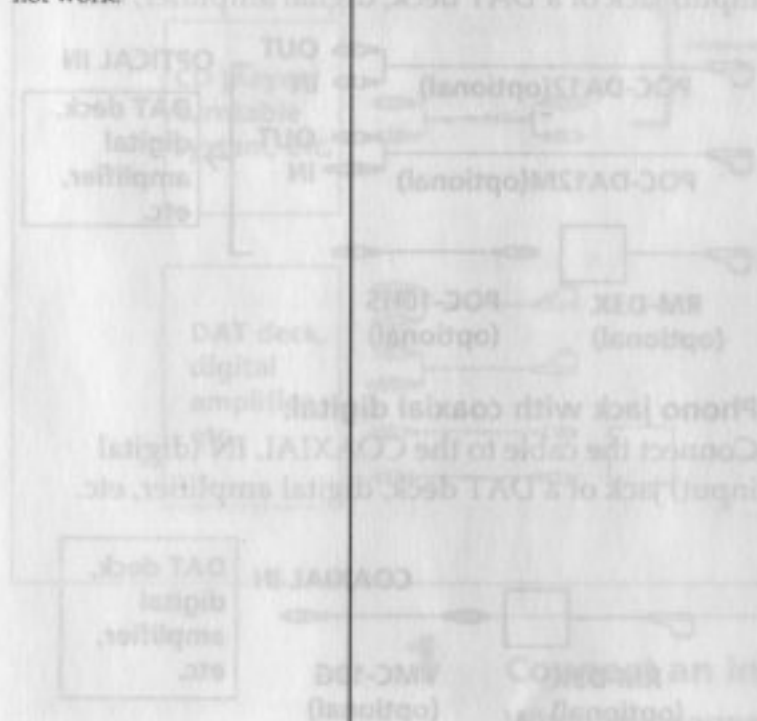
## 5 Turn REC LEVEL L/R so that the volume of output equipment will usually be around -12dB, and not exceed 0 dB even if loud sound is input.

To adjust the recording level, refer to the OVER L/R indicator on the SBM-1 because the OVER L/R indicator of output equipment may not lights even if loud sound is input.

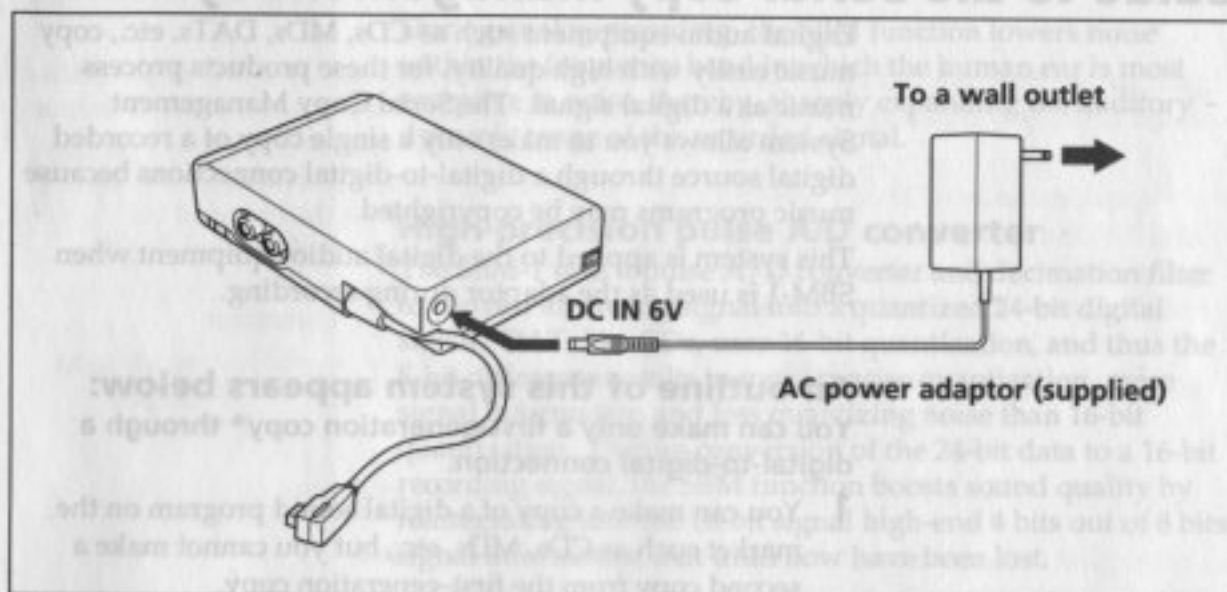


If you use SBM-1 with the power turned off, the input digital sound is output to the recording components directly. In this case, SBM (super bit mapping) process does not work.

## 6 Start recording.



# Using House Current



## Note

Use only the supplied AC power adaptor or the AC-E60AM AC power adaptor (not supplied). Do not use any other AC power adaptor.

## Polarity of the plug



Connect the supplied AC power adaptor to the DC IN 6V jack of the SBM-1 and a wall outlet.

EN

## **Guide to the Serial Copy Management System**

Digital audio equipment such as CDs, MDs, DATs, etc., copy music easily with high quality, for these products process music as a digital signal. The Serial Copy Management System allows you to make only a single copy of a recorded digital source through a digital-to-digital connections because music programs may be copyrighted.

This system is applied to the digital audio equipment when SBM-1 is used as the adaptor during recording.

### **An outline of this system appears below:**

**You can make only a first-generation copy\* through a digital-to-digital connection.**

- 1** You can make a copy of a digital sound program on the market such as CDs, MDs, etc., but you cannot make a second copy from the first-generation copy.
  - 2** You can make a copy of a digital signal, which is a digitally recorded analog sound program on the market such as analog record, music cassette tape, etc., or digital satellite broadcasts, but you cannot make a second copy.
- \* Copy is a digital recording of a digital signal made on digital audio equipment through a digital-to-digital connection.

### **Note**

No restrictions apply when a digital signal is recorded as an analog signal through an analog-to-analog connection on digital audio equipment.

# What is the SBM?

During analog recording, the SBM function lowers noise within the frequency band in which the human ear is most receptive to noise, thereby, sharply expanding the auditory dynamic range of the recorded signal.

## High-precision pulse A/D converter

The SBM-1 uses a pulse A/D converter and decimation filter to convert an analog signal into a quantized 24-bit digital signal. DAT, like CDs, uses 16-bit quantization, and thus the 8-bit difference results in more precise quantization, more signal information and less quantizing noise than 16-bit quantization. During conversion of the 24-bit data to a 16-bit recording signal, the SBM function boosts sound quality by reintegrating into the 16-bit signal high-end 4 bits out of 8 bits signal information that until now have been lost.

## Applying the principle of human hearing

The SBM function applies the principle of human hearing in the reintegration of signal information. The auditory range of the human ear is generally considered to be 20 Hz to 20 kHz; hearing sensitivity, however, shows greater sensitivity to the range between 3 kHz and 4 kHz, and lower sensitivity to frequencies above and below this range (see Fig.A). This principle applies also to quantizing noise as well. By reducing quantizing noise in this particular range, signals can be recorded to produce more expansive sound than is possible by a uniform reduction of noise over the entire audible range.

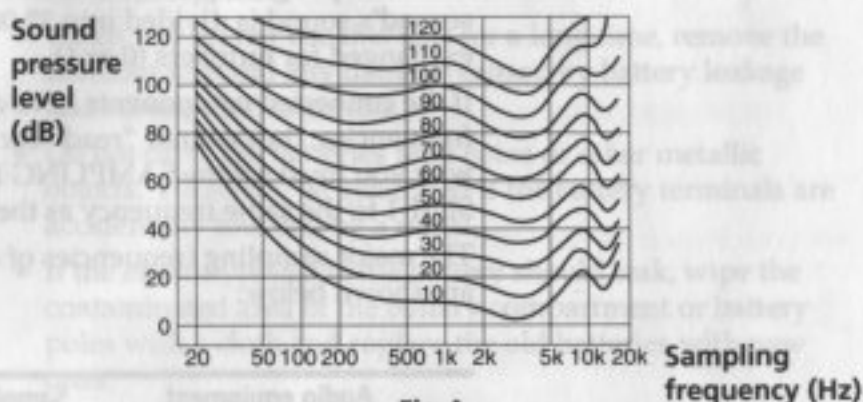


Fig.A



# Guide to the Serial Copy Management System

## Noise-shaping filter

The SBM function uses a noise-shaping filter (see Fig.B) with a frequency response similar to that of the human ear to reduce quantizing noise within the most sensitive frequency range, and to feed back the quantizing error (that is normally lost) back to the input signal, re-integrating the low-end bit information with the high-end bit information (see Fig.B).

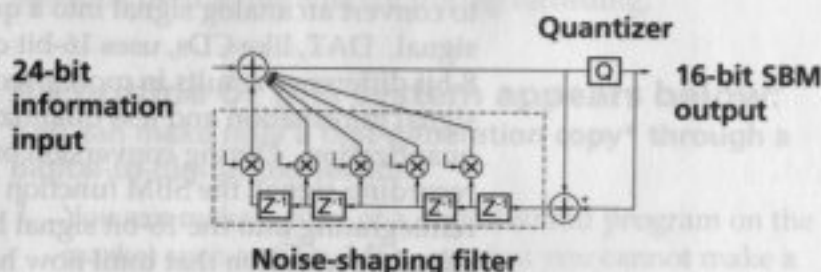


Fig.B

The improvement in noise level for frequency range lower than 3 kHz exceeds 10 dB when the SBM is activated.

The SBM function operates only when recording analog sound. The function does not operate when digital sound is input.

## What is the sampling frequency?

Digital audio equipment exchanges the input sound for numbers (0 or 1), and records the numbers as input data. Sampling frequency is the rule for the exchange. For example, if the sampling frequency is 32 kHz, it means that one second's sound is divided into 32,000, then each sound is exchanged for numbers (0 or 1).

If the connected components have different sampling frequencies, they cannot "read" each other's data. That is why you must set the SAMPLING FREQ selector on the SBM-1 to the same frequency as the connected recorder.

The major sampling frequencies of digital audio equipment are shown below:

Audio equipment	Sampling frequency
DAT recorder	48 kHz, 44.1 kHz or 32 kHz*
CD player	44.1 kHz
MD recorder	44.1 kHz
NT recorder	32 kHz*

\* SBM (super bit mapping) process does not work at 32 kHz.

# Precautions

## On safety

- Should any solid object or liquid fall into the unit, unplug the unit and have it checked by qualified personnel before operating it any further.
- After operating the unit with the AC power adaptor, unplug the AC power adaptor from the wall outlet if it is not to be used for an extended period of time. To unplug the cord, pull it out by grasping the plug. Never pull the cord itself.
- Do not put any foreign object into the DC IN 6V (external power input) jack.

## On power sources

- For AC operation, use only the recommended AC power adaptor. Do not use any other AC power adaptor as it may damage the unit.
- When the unit is not to be used for an extended period of time, be sure to disconnect the power source (batteries, AC power adaptor, etc.) from the unit. To disconnect the cord, pull it out by the plug; never pull the cord itself.

## Note on batteries

- Insert alkaline batteries by matching the + and - on the batteries to the + and - in the battery compartment.
- Do not charge dry batteries.
- Do not use old batteries with new ones or different types of batteries together.
- When you do not use this unit for a long time, remove the batteries to avoid any damage caused by battery leakage and subsequent corrosion.
- Do not carry the batteries with coins or other metallic objects. Heat may be generated if the battery terminals are accidentally touched by a metal.
- If the electrolyte inside the battery should leak, wipe the contaminated area of the battery compartment or battery poles with a cloth and replace the old batteries with new ones.
- Use only alkaline batteries.
- When low temperatures the battery capacity decreases and battery life becomes shorter.
- You may use rechargeable size AA batteries, but the battery capacity may be smaller and battery life may be shorter.

## On installation

- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

## On cleaning

Clean the cabinet, and controls with a soft cloth slightly moistened with a mild detergent solution.

Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

## On power sources

When using AC operation, use only the recommended AC power adapter. Do not use any other AC power adapter as it may damage the unit.

When the unit is not to be used for an extended period of time, disconnect the power source (battery, AC power adapter, etc.) from the unit. To disconnect the cord, pull it out by the plug, never pull the cord itself.

## Note on batteries

- Insert alkaline batteries by matching the + and - on the batteries to the + and - in the battery compartment. Do not change dry batteries.
- When you use a new one or different type of battery, the exchange. For example, if you use 2 x AA batteries, it means that one is shown as 2 x AA.
- When you do not use the unit for a long time, remove the batteries to avoid any damage caused by battery leakage.
- Do not carry the batteries with coins or other metallic objects. They may be damaged if the battery terminals are accidentally touched by a metal.
- If the electrolyte liquid in the battery should leak, wipe the contaminated area of the battery compartment or battery poles with a cloth and replace the old batteries with new ones.

Power source	Power source
1 x AA	1 x AA
2 x AA	2 x AA
4 x AA	4 x AA
8 x AA	8 x AA
16 x AA	16 x AA
32 x AA	32 x AA
64 x AA	64 x AA
128 x AA	128 x AA
256 x AA	256 x AA
512 x AA	512 x AA
1024 x AA	1024 x AA
2048 x AA	2048 x AA
4096 x AA	4096 x AA
8192 x AA	8192 x AA
16384 x AA	16384 x AA
32768 x AA	32768 x AA
65536 x AA	65536 x AA
131072 x AA	131072 x AA
262144 x AA	262144 x AA
524288 x AA	524288 x AA
1048576 x AA	1048576 x AA
2097152 x AA	2097152 x AA
4194304 x AA	4194304 x AA
8388608 x AA	8388608 x AA
16777216 x AA	16777216 x AA
33554432 x AA	33554432 x AA
67108864 x AA	67108864 x AA
134217728 x AA	134217728 x AA
268435456 x AA	268435456 x AA
536870912 x AA	536870912 x AA
1073741824 x AA	1073741824 x AA
2147483648 x AA	2147483648 x AA
4294967296 x AA	4294967296 x AA
8589934592 x AA	8589934592 x AA
17179869184 x AA	17179869184 x AA
34359738368 x AA	34359738368 x AA
68719476736 x AA	68719476736 x AA
137438953472 x AA	137438953472 x AA
274877906944 x AA	274877906944 x AA
549755813888 x AA	549755813888 x AA
1099511627776 x AA	1099511627776 x AA
2199023255552 x AA	2199023255552 x AA
4398046511104 x AA	4398046511104 x AA
8796093022208 x AA	8796093022208 x AA
17592186044416 x AA	17592186044416 x AA
35184372088832 x AA	35184372088832 x AA
70368744177664 x AA	70368744177664 x AA
140737488355328 x AA	140737488355328 x AA
281474976710656 x AA	281474976710656 x AA
562949953421312 x AA	562949953421312 x AA
1125899906842624 x AA	1125899906842624 x AA
2251799813685248 x AA	2251799813685248 x AA
4503599627370496 x AA	4503599627370496 x AA
9007199254740992 x AA	9007199254740992 x AA
18014398509481984 x AA	18014398509481984 x AA
36028797018963968 x AA	36028797018963968 x AA
72057594037927936 x AA	72057594037927936 x AA
144115188075855872 x AA	144115188075855872 x AA
288230376151711744 x AA	288230376151711744 x AA
576460752303423488 x AA	576460752303423488 x AA
1152921504606846976 x AA	1152921504606846976 x AA
2305843009213693952 x AA	2305843009213693952 x AA
4611686018427387904 x AA	4611686018427387904 x AA
9223372036854775808 x AA	9223372036854775808 x AA
18446744073709551616 x AA	18446744073709551616 x AA
36893488147419103232 x AA	36893488147419103232 x AA
73786976294838206464 x AA	73786976294838206464 x AA
147573952589676412928 x AA	147573952589676412928 x AA
295147905179352825856 x AA	295147905179352825856 x AA
590295810358705651712 x AA	590295810358705651712 x AA
1180591620717411303424 x AA	1180591620717411303424 x AA
2361183241434822606848 x AA	2361183241434822606848 x AA
4722366482869645213696 x AA	4722366482869645213696 x AA
9444732965739290427392 x AA	9444732965739290427392 x AA
18889465931478580854784 x AA	18889465931478580854784 x AA
37778931862957161709568 x AA	37778931862957161709568 x AA
75557863725914323419136 x AA	75557863725914323419136 x AA
151115727451828646838272 x AA	151115727451828646838272 x AA
302231454903657293676544 x AA	302231454903657293676544 x AA
604462909807314587353088 x AA	604462909807314587353088 x AA
1208925819614629174706176 x AA	1208925819614629174706176 x AA
2417851639229258349412352 x AA	2417851639229258349412352 x AA
4835703278458516698824704 x AA	4835703278458516698824704 x AA
9671406556917033397649408 x AA	9671406556917033397649408 x AA
19342813113834066795298816 x AA	19342813113834066795298816 x AA
38685626227668133590597632 x AA	38685626227668133590597632 x AA
77371252455336267181195264 x AA	77371252455336267181195264 x AA
154742504910672534362390528 x AA	154742504910672534362390528 x AA
309485009821345068724781056 x AA	309485009821345068724781056 x AA
618970019642690137449562112 x AA	618970019642690137449562112 x AA
1237940039285380274899124224 x AA	1237940039285380274899124224 x AA
2475880078570760549798248448 x AA	2475880078570760549798248448 x AA
4951760157141521099596496896 x AA	4951760157141521099596496896 x AA
9903520314283042199192993792 x AA	9903520314283042199192993792 x AA
19807040628566084398385987584 x AA	19807040628566084398385987584 x AA
39614081257132168796771975168 x AA	39614081257132168796771975168 x AA
79228162514264337593543950336 x AA	79228162514264337593543950336 x AA
158456325028528675187087900672 x AA	158456325028528675187087900672 x AA
316912650057057350374175801344 x AA	316912650057057350374175801344 x AA
633825300114114700748351602688 x AA	633825300114114700748351602688 x AA
1267650600228229401496703205376 x AA	1267650600228229401496703205376 x AA
2535301200456458802993406410752 x AA	2535301200456458802993406410752 x AA
5070602400912917605986812821504 x AA	5070602400912917605986812821504 x AA
10141204801825835211973625643008 x AA	10141204801825835211973625643008 x AA
20282409603651670423947251286016 x AA	20282409603651670423947251286016 x AA
40564819207303340847894502572032 x AA	40564819207303340847894502572032 x AA
81129638414606681695789005144064 x AA	81129638414606681695789005144064 x AA
162259276829213363391578010288128 x AA	162259276829213363391578010288128 x AA
324518553658426726783156020576256 x AA	324518553658426726783156020576256 x AA
649037107316853453566312041152512 x AA	649037107316853453566312041152512 x AA
1298074214633706907132624082305024 x AA	1298074214633706907132624082305024 x AA
2596148429267413814265248164610048 x AA	2596148429267413814265248164610048 x AA
5192296858534827628530496329220096 x AA	5192296858534827628530496329220096 x AA
10384593717069655257060992658440192 x AA	10384593717069655257060992658440192 x AA
20769187434139310514121985316880384 x AA	20769187434139310514121985316880384 x AA
41538374868278621028243970633760768 x AA	41538374868278621028243970633760768 x AA
83076749736557242056487941267521536 x AA	83076749736557242056487941267521536 x AA
166153499473114484112975882535043072 x AA	166153499473114484112975882535043072 x AA
332306998946228968225951765070086144 x AA	332306998946228968225951765070086144 x AA
664613997892457936451903530140172288 x AA	664613997892457936451903530140172288 x AA
1329227995784915872903807060280344576 x AA	1329227995784915872903807060280344576 x AA
2658455991569831745807614120560689152 x AA	2658455991569831745807614120560689152 x AA
5316911983139663491615228241121378304 x AA	5316911983139663491615228241121378304 x AA
10633823966279326983230456482242756608 x AA	10633823966279326983230456482242756608 x AA
21267647932558653966460912964485513216 x AA	21267647932558653966460912964485513216 x AA
42535295865117307932921825928971026432 x AA	42535295865117307932921825928971026432 x AA
85070591730234615865843651857942052864 x AA	85070591730234615865843651857942052864 x AA
170141183460469231731687303715884105728 x AA	170141183460469231731687303715884105728 x AA
340282366920938463463374607431768211456 x AA	340282366920938463463374607431768211456 x AA
680564733841876926926749214863536422912 x AA	680564733841876926926749214863536422912 x AA
1361129467683753853853498429727072845824 x AA	1361129467683753853853498429727072845824 x AA
2722258935367507707706996859454145691648 x AA	2722258935367507707706996859454145691648 x AA
5444517870735015415413993718908291383296 x AA	5444517870735015415413993718908291383296 x AA
10889035741470030830827987437816582766592 x AA	10889035741470030830827987437816582766592 x AA
21778071482940061661655974875633165533184 x AA	21778071482940061661655974875633165533184 x AA
43556142965880123323311949751266331066368 x AA	43556142965880123323311949751266331066368 x AA
87112285931760246646623899502532662132736 x AA	87112285931760246646623899502532662132736 x AA
174224571863520493293247799005065324265472 x AA	174224571863520493293247799005065324265472 x AA
348449143727040986586495598010130648530944 x AA	348449143727040986586495598010130648530944 x AA
696898287454081973172991196020261297061888 x AA	696898287454081973172991196020261297061888 x AA
1393796574908163946345982392040522594123776 x AA	1393796574908163946345982392040522594123776 x AA
2787593149816327892691964784081045188247552 x AA	2787593149816327892691964784081045188247552 x AA
5575186299632655785383929568162090376495104 x AA	5575186299632655785383929568162090376495104 x AA
11150372599265311570767859136324180752990208 x AA	11150372599265311570767859136324180752990208 x AA
22300745198530623141535718272648361505980416 x AA	22300745198530623141535718272648361505980416 x AA
44601490397061246283071436545296723011960832 x AA	44601490397061246283071436545296723011960832 x AA
89202980794122492566142873090593446023921664 x AA	89202980794122492566142873090593446023921664 x AA
178405961588244985132285746181186892047843328 x AA	178405961588244985132285746181186892047843328 x AA
356811923176489970264571492362373784095686656 x AA	356811923176489970264571492362373784095686656 x AA
713623846352979940529142984724747568191373312 x AA	713623846352979940529142984724747568191373312 x AA
1427247692705959881058285969449495136382746624 x AA	1427247692705959881058285969449495136382746624 x AA
2854495385411919762116571938898990272765493248 x AA	2854495385411919762116571938898990272765493248 x AA
5708990770823839524233143877797980545530986496 x AA	5708990770823839524233143877797980545530986496 x AA
11417981541647679048466287755595961091061972992 x AA	11417981541647679048466287755595961091061972992 x AA
22835963083295358096932575511191922182123945984 x AA	22835963083295358096932575511191922182123945984 x AA
45671926166590716193865151022383844364247891968 x AA	45671926166590716193865151022383844364247891968 x AA
91343852333181432387730302044767688728495783936 x AA	91343852333181432387730302044767688728495783936 x AA
182687704666362864775460604089535377456991567872 x AA	182687704666362864775460604089535377456991567872 x AA
365375409332725729550921208179070754913983135744 x AA	365375409332725729550921208179070754913983135744 x AA
730750818665451459101842416358141509827966271488 x AA	730750818665451459101842416358141509827966271488 x AA
1461501637330902918203684832716283019655932542976 x AA	1461501637330902918203684832716283019655932542976 x AA
2923003274661805836407369665432566039311865085952 x AA	2923003274661805836407369665432566039311865085952 x AA
5846006549323611672814739330865132078623730171904 x AA	5846006549323611672814739330865132078623730171904 x AA
11692013098647223345629478661730264157247460343808 x AA	11692013098647223345629478661730264157247460343808 x AA
23384026197294446691258957323460528314494920687616 x AA	233

# Troubleshooting

If you experience any of the following difficulties while using your adaptor, use this troubleshooting guide to help you remedy the problem. If the problem persists, consult your nearest Sony service facility.

Symptom	Cause and solution
The adaptor does not operate or the power does not go on.	<ul style="list-style-type: none"><li>• The dry batteries are inserted with the incorrect polarity. → Insert the batteries with the correct polarity.</li><li>• The dry batteries are weak. → Check BATT indicator. Insert new ones when the leftmost BATT indicator is flashing or goes off.</li><li>• The AC power adaptor is connected incorrectly. → Connect the AC power adaptor correctly.</li></ul>
Recording cannot be made.	<ul style="list-style-type: none"><li>• Incorrect connection. → Check the connection.</li><li>• While recording from microphone with stereo mini-plug, another microphone with MIC L/MONO and MIC R jacks is also connected. → Disconnect the microphone from MIC L/MONO and MIC R jacks.</li><li>• MIC LINE IN switch is set incorrectly. → Set it correctly.</li><li>• SAMPLING FREQ selector is set incorrectly. → Set it correctly.</li></ul>
SBM process does not work.	<ul style="list-style-type: none"><li>• SAMPLING FREQ selector is set to 32 kHz. → SBM process does not work with 32 kHz. Set the selector to 48 kHz or 44.1 kHz.</li></ul>
No sound comes through the headphones.	<ul style="list-style-type: none"><li>• The headphones plug is not firmly connected to REC MONITOR.</li><li>→ Connect it firmly.</li><li>• Input level is too low. → Increase the volume by turning REC MONITOR · VOL control up.</li></ul>
The recorded sound is too low.	<ul style="list-style-type: none"><li>• Recording level was too low. → Increase the volume by turning REC LEVEL control up or set MIC ATT switch to 0 dB.</li></ul>
The recorded sound cracks.	<ul style="list-style-type: none"><li>• Recording level was too loud. → Decrease the volume by turning REC LEVEL control down while monitoring OVER indicator (p.7).</li></ul>

# Specifications

---

## System

Super bit mapping system

---

## Sampling frequency

48 kHz, 44.1 kHz, 32 kHz\*  
(selectable)

\* SBM (super bit mapping) process  
does not work at 32 kHz.

---

## Total signal-to-noise-ratio (1 kHz IHF-A, $F_s = 48$ kHz)

MIC (Phone plug):

more than 60 dB (MIC: -60 dBs /  
TCD-D7 LINE OUT: +8.2 dBs)

LINE:

more than 90 dB (LINE IN: -3.8 dBs  
/ TCD-D7 LINE OUT: +8.2 dBs)  
(0 dBs = 0.775 V)

---

## Total harmonic distortion (1 kHz, 22 kHz LPF, $F_s = 48$ kHz)

MIC (Phone plug):

less than 0.16 % (MIC: -60 dBs /  
TCD-D7 LINE OUT: +8.2 dBs)

LINE:

less than 0.008 % (LINE IN: -3.8 dBs  
/ TCD-D7 LINE OUT: +8.2 dBs)

---

## Frequency response

MIC (Phone plug):

$F_s$  48 kHz 60 — 22,000 Hz ( $\pm 1.5$  dB)

$F_s$  44.1 kHz 60 — 20,000 Hz  
( $\pm 1.5$  dB)

$F_s$  32 kHz 60 — 14,500 Hz ( $\pm 1.5$  dB)

LINE IN:

$F_s$  48 kHz 20 — 22,000 Hz ( $\pm 1.0$  dB)

$F_s$  44.1 kHz 20 — 20,000 Hz  
( $\pm 1.0$  dB)

$F_s$  32 kHz 20 — 14,500 Hz ( $\pm 1.0$  dB)

---

## Outputs

REC MONITOR (Stereo minijack)

Impedance: 32 ohms

Maximum output level:

5 mW + 5 mW

DIGITAL OUT (Special 7-pin cable,  
special 7-pin jack)

---

## Inputs

MIC (Phone plug)

Rated input: -60 dBs (0.775 mV)

Minimum input: -75 dBs (0.14 mV)

MIC (Stereo minijack)

Rated input: -60 dBs (0.775 mV)

Minimum input: -73 dBs (0.17 mV)

LINE IN (Phono jack)

Rated input: -3.8 dBs (500 mV)

Minimum input: -22 dBs (62 mV)

Impedance: 47 kilohms

DIGITAL IN (Special 7-pin cable, special  
7-pin jack)

---

## General

Power requirements

DC 6 V four size AA (LR6) batteries

AC power adaptor for use on 120 V  
AC, 60 Hz (for USA and Canadian  
models) / for use on 240 V AC, 50  
Hz (for UK model)

Battery life (measured at 20 °C)

Approx. 2 hours (Sony dry batteries  
LR6/AM3(N))



## Power consumption

2 W

## Dimension

Approx.

136 × 29.4 × 89 mm (5 <sup>3</sup>/<sub>8</sub> × 1 <sup>3</sup>/<sub>16</sub> × 3 <sup>5</sup>/<sub>8</sub> in.)

(w/h/d) incl. projecting parts and controls, not incl. cables

## Mass

Approx.

200 g (7 oz.)

280 g (10 oz.) incl. batteries

## Accessories supplied

Carrying case (1)

AC power adaptor (1)

Operating instructions (1)

Design and specifications are subject to change without notice.

## Accessories (optional)

AC power adaptor

AC-E60AM

Audio connecting cord

RK-C710HS

Digital cable

POC-DA12 (Special 7-pin plug ↔ rectangular optical plug input/output),

POC-DA12M (Special 7-pin plug ↔ optical miniplug input / rectangular optical plug output),

POC-10HS (Rectangular optical plug ↔ rectangular-shaped optical plug, using with RM-D3K),

VMC-10G (Phono jack ↔ phono jack with coaxial digital, using with RM-D3K)

RK-DA10 (Special 7-pin plug ↔ phono jack with coaxial digital)

System adaptor kit

RM-D3K

Stereo microphone

ECM-999, ECM-959A, ECM-737, ECM-727P(plug-in power system)

Stereo headphones

MDR-D77, MDR-D55

EN

# Identifying the Parts and Controls

