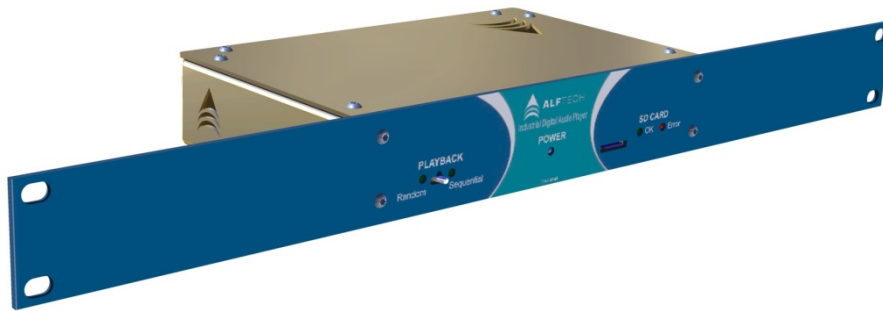


# INDUSTRIAL DIGITAL AUDIO PLAYER

## *Users Guide*



## Contact Information

Alf Electro-Technical Services CC t/a ALFTECH

### Corporate Headquarters

Address (Physical): 30 Irene Ave., Somerset West, 7130, CAPE, South Africa

Address (Postal): PO Box 1718, Somerset West, 7129, CAPE, South Africa

Telephone: +27-21-852-5221

Fax: +27-21-852-8111

E-Mail: info@alftech.com

### Technical Support

Telephone: +27-21-851-7126

Fax: +27-21-852-8111

E-Mail: support@alftech.com

www: www.alftech.com

### Important Safety Instructions

Please follow these precautions when using this product:

Read these instructions. Keep these instructions. Heed all warnings. Follow all instructions.

**WATER AND MOISTURE:** Designed for indoor use only. The product is not protected against liquids. It should not be exposed to dripping or splashing and no objects filled with liquids, shall be placed on the product.

**INSTALLATION:** The player must always be installed by qualified service personnel. Install in accordance with the manufacturer's instructions. Always disconnect the supply power before installing the unit. Do not install near any heat sources such as radiators, heaters, or other apparatus that produce heat.

**POWER SOURCES:** The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.

**SERVICING:** Contains no user serviceable parts. Do not attempt to repair the product, as this will void the warranty. The iDAP-RM1 and external circuitry must only be serviced and maintained by qualified service personnel.

## Product User's Notice

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**Product Name:** iDAP-RM1

the iDAP Hardware

**Printed:** March, 2011

**Product User's Manual**

# Introduction

**Product Overview:**

Industrial Digital Audio Player

## *iDAP-RM1 Industrial Digital Audio Player*

*the iDAP Hardware*

The ALFTECH iDAP-RM1 is an Industrial Digital Audio Player, providing continuous playback of compressed MP3 Audio files such as music, advertisements or announcements. The MP3 Audio Files are stored on a standard microSD Card, inserted into the microSD Card slot on the iDAP-RM1.

When the microSD Card is inserted and valid MP3 files are detected, playback will start automatically. There is no playback or stop buttons as the iDAP-RM1 plays continuously whenever valid MP3 files are available.

Sequential or random playback can be selected via a front-panel switch.

The iDAP-RM1 is AC powered, via a standard power connector and cable. Playback resumes automatically when the power has been restored if the external power has been interrupted.

Example of MP3 Audio Compression Ratios:

microSD Card	Low Quality, i.e. Telephones (40kbits/s)	High Quality, i.e. Background Music (128kbits/s)
1 GByte	58 hours	18 hours
2 GByte	116 hours	36 hours

## *iDAP-RM1 Operation*

If the iDAP is properly installed, connected and powered, playback will commence as soon as a microSD Card with correctly stored MP3 audio files is inserted into the microSD Card on the iDAP-RM1.

POWER	LED Status	Description
DC	ON	The iDAP is externally powered.
	OFF	The iDAP <b>is not powered externally</b> , or the internal fuse has blown.
PLAYBACK	LED Status	Description
Random	ON	The iDAP is running audio file playback randomly.
Sequential	ON	The iDAP is running audio file playback sequentially, sorted alphabetically by folder name, and then by MP3 file name.
Random AND Seq.	OFF	No valid MP3 Audio files detected.
SD Card	LED Status	Description
OK	ON	The iDAP is accessing and reading the microSD Card successfully.
Error	ON	Access to, or accessing, or reading the microSD Card has failed. <b>Ensure that the microSD card is properly inserted into the microSD Card slot, and that at least one MP3 file is stored on the memory card for playback.</b>

## *microSD Card MP3 File Structure*

Only use the microSD Card as sold with the iDAP-RM1 product – not all microSD Cards are equal. The microSD Card included with the iDAP-RM1 has been tested to be compatible with the iDAP-RM1 hardware and reliable.

Please contact us for replacement or alternative 2 GByte microSD Cards.

MP3 files can be stored on the SD Card root, or in 1<sup>st</sup> level folders on the microSD Card root.

**Do not use subfolders, the iDAP cannot read into 2<sup>nd</sup> level folders!**

No sub-folders within these folder(s) on the root folder are supported.

It is preferable to format the new microSD Card disk before use using the FAT32 file system (a quick format can be performed). Other "non-MP3" files and folders may be stored on the microSD Card, but will be ignored for the operation of the iDAP. The iDAP will only read .MP3 files. Storing other files and multiple folders (as well as sub-folders) which are not used for audio will cause "detectable audio delays" between file playback, as all the folders must first be read to find all the .MP3 files.

**The iDAP does NOT support microSDHC cards.**

### ***Audio Compression Quality***

The table provided below displays Audio Compression Settings suggested for MP3 audio files. For telephone background music you can compress the MP3 files into mono, and double the playback duration compared to stereo files maintaining the same audio quality.

The ALFTECH iDAP-RM1 can play almost any MPEG 1, layer 2 or 3 (MP3), and MPEG 2, layer 2 or 3 compatible audio files.

Example of MP3 Audio Compression Ratios:

<b>microSD Card</b>	<b>Low Quality, i.e. Telephones (40 kbits/s)</b>	<b>High Quality, i.e. Background Music (128 kbits/s)</b>
<b>1 GByte</b>	58 hours	18 hours
<b>2 GByte</b>	116 hours	36 hours

### **Commonly Used Compression Settings**

<b>AUDIO Quality</b>	<b>Sample Rate (Hz)</b>	<b>Bit Rate (kbit/s)</b>	<b>Approx. time (for 1 GByte)</b>
Near CD	44100 (stereo)	160	15 hours
Near CD	44100 (stereo)	128	18 hours
Telephone: music	44100 (mono)	64	36 hours
Telephone: voice	22050 (mono)	32	72 hours

The sample rate will mostly determine the quality of the playback audio.

### **Supported Sample Rates (Hz)**

	<b>Sample Rate</b>	<b>Supported</b>
1	48000	<b>Yes</b>
2	44100	<b>Yes</b>
3	32000	<b>Yes</b>
4	24000	<b>Yes</b>
5	22050	<b>Yes</b>
6	16000	<b>Yes</b>

The bit rate is the amount of bits per second used to record the audio signal. The standard for near CD quality audio is 160 kbit/s at a 44100 Hz sample rate. The available options are listed below.

### **Bit Rates Supported (kbit/s)**

32,40,48,56,64,80,96,112,128,160,192,224,246,320

## iDAP-RM1 Hardware Features

### Hardware Features

- 1U Rack-Mount form factor
- AC powered
- Supports all MP3 file formats
- Balanced and unbalanced stereo audio line-out
- microSD card storage up to 2GByte, supplied with 2GB microSD Card
- microSD card file access for 300 folders and 800 MP3 files/folder
- Random or Sequential file playback option

### Hardware Connections

- 230 VAC IEC power socket
- RCA unbalanced audio Line-Outs
- 5-way terminal balanced audio Line-Outs
- microSD (Secure Digital) Card slot

### Hardware Indicator LED's

- Power LED
- PLAY: Random vs. Sequential
- SD Card: Read OK vs. File Error

### *iDAP-RM1 Electrical Specifications*

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT	NOTES
Power Consumption	230VAC, normal operation		2		W	
Audio Output Level RCA	0 dBFS digital		-10		dBu	
Audio Output Level terminals	0 dBFS digital		-4		dBu	1
Audio Output Impedance	Hot to Gnd & Cold to Gnd		22		$\Omega$	
Frequency Response	20 Hz to 18 kHz		$\pm 1$		dB	2
Signal-to-Noise Ratio	-3 dBFS digital			84	dB	2
Total Harmonic Distortion	-3 dBFS digital			0.004	%	2

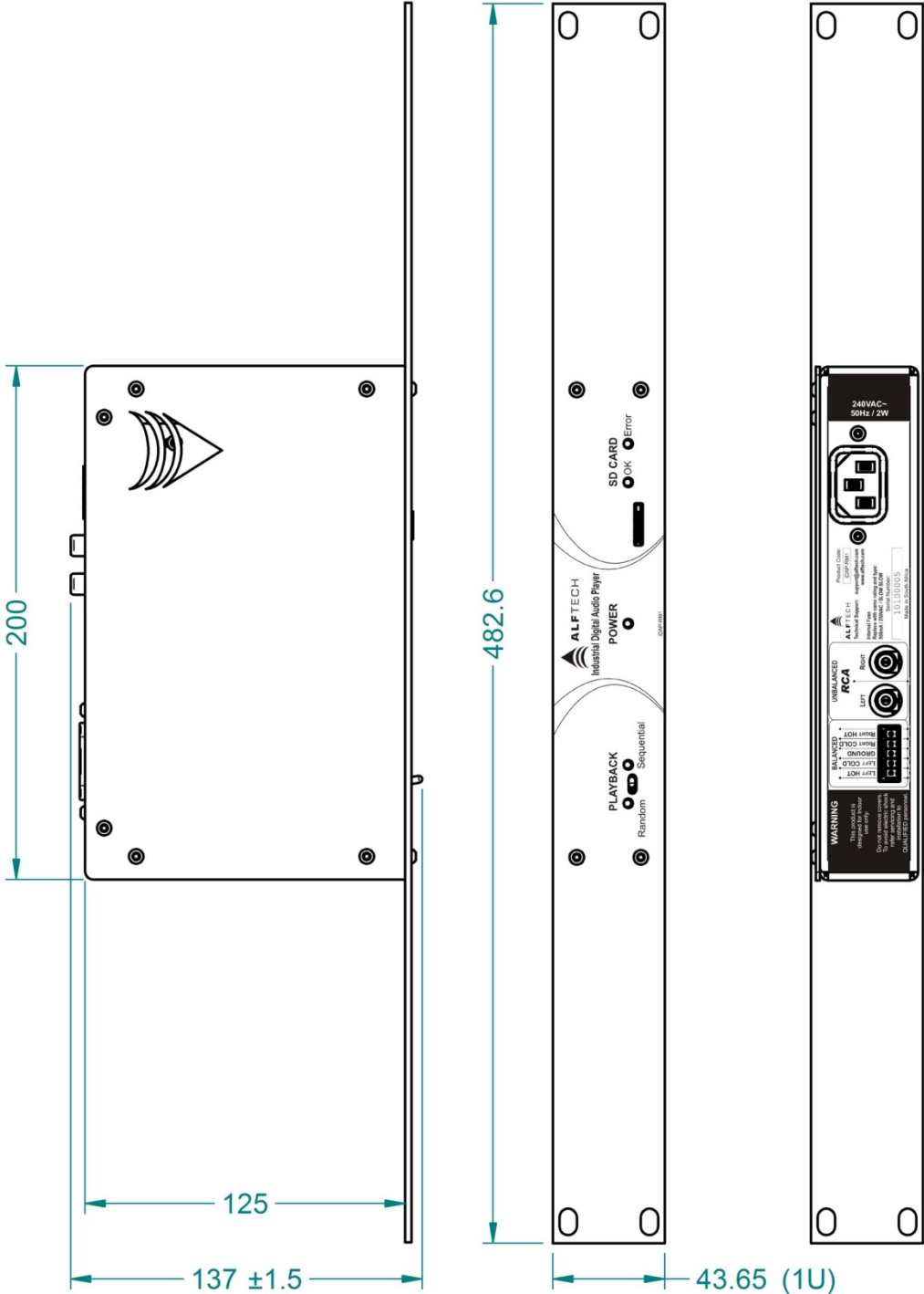
#### Notes

1. The output level is between the hot and cold terminals, balanced.
2. Tested with 44100 Hz sample rate, 16 bits and 192 kbps data rate.

# Physical Layout and Dimensions

## iDAP-RM1

all Dimensions in mm



## Limited Warranty

**No warranty registration is necessary to obtain warranty on ALFTECH products. Please save your proof of purchase receipt. If you do not provide proof of the initial purchase date at the time warranty service is requested, the manufacturing date of the product will be used to determine the warranty period.**

1. ALFTECH will repair or replace free of charge, any part or parts of the Product that are defective, but subject to the following conditions:
  - 1.1 Transportation charges on equipment and/or parts submitted for repair or replacement under this warranty must be borne by the Purchaser, Distributor, Reseller and/or End user;
  - 1.2 The warranty period begins on the date of purchase by the first retail consumer or commercial end user and continues for the period of two (2) years from that date;
  - 1.3 ALFTECH shall have the sole discretion whether to replace or repair the Product, and the replacement Product shall be of equivalent or better specifications, relative to the defective product but need not be identical.
2. The warranty does not extend to repairs required because of:
  - 2.1 Problems caused by parts or systems that do not form an integral part of the Products;
  - 2.2 Equipment control, use, maintenance or installations that are not in accordance with instructions and manuals provided by ALFTECH for the product;
  - 2.3 the product is repaired, modified or altered, unless such repair, modification is authorized in writing by ALFTECH; or
  - 2.4 the product serial number is defaced or missing;
  - 2.5 Normal use which has exhausted the life of the product.
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