

DFS1000 Series
Digital Audio FM Transmitter Adapter
USER'S Manual

P/N : OPI -D06003RA

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Picture of DFS1000 Series Model

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Precautions

WARING

DO not dismantle the housing or modify the module

Dismantling the case or modifying the module may result in electrical shock or burn.

Refer all servicing to qualified service personnel

Do not attempt to service this product yourself as opening or removing case may expose you to dangerous voltage or other hazards.

Keep the away from liquids

Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls/spills into the housing, unplug the module immediately. Have the module checked by a qualified service engineer before using it again.

Do not touch the powered DFS1000R and DFS1000T at the same time.

This module is designed for long distance connection, so the DFS1000R and DFS1000T are isolated electrically. Touching the powered transmitter and powered receiver at the same time may result in electrical shock.

Do not touch the module with wet hands

Touching the housing and plug with wet hands is dangerous and can cause electrical shock.

Safety and EMI

Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

NOTE: 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.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Warranty

1(One) Year Warranty

Warranty Limitation and Exclusion

OptiPlus shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other then by OptiPlus or its authorized agents, causes other then from ordinary use or failure to properly use the product in the application for which said product is intended,

Professional Installation:

These systems cannot be sold retail to the general public or by mail order. It is sold to dealers and professionally installed.

Installation of FM transmitter antenna shall be done by the authorized personal that are trained and qualified.

- Installation must be controlled
- Installed by licensed professionals (the system sold to dealer who hire installers)
- Installation requires special training (special programming access to keypad, field strength measurements made)
- The FM transmitter and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter

Chapter 1 Introduction

1.1 About This Manual

This manual is part of basic Model guide reference documents that provides information necessary to incorporate the **FMextender™** DFS1000 series digital audio interface FM transmitter and receiver for high speed data transmission interface controller system. And this document covers spec of the **FMextender**.

The manual will be updated periodically to include latest component revisions and respective specification changes. Please contact OptiPlus to obtain information on how to support all of OPI's optical display interface.

1.2 Introduction

The **FMextender™** audio converter and FM transmitter are FM radio transmitter communication interface for audio applications. The interface extends the base technology of SPDIF audio and FM radio to provide a specification more useful for audio applications.

Chapter 2 Audio converter system Descriptions

2.1 Feature Summary

The DFS1000R System is a complete analog-to-digital converter for digital audio systems. It performs sampling, analog to digital conversion, and anti-alias filtering, generating 24-bit values for both left and right inputs in serial form at sample rates up to 200 kHz per channel.

The DFS1000R System uses a 5th-order, multi-bit Delta-Sigma modulator followed by digital filtering and decimation, which removes the need for an external anti-alias filter. The DFS1000R is ideal for audio systems requiring wide dynamic range, negligible distortion and low noise, such as set-top boxes, DVD-karaoke players, DVD recorders, A/V receivers, and automotive applications.

2.2 Identification of control

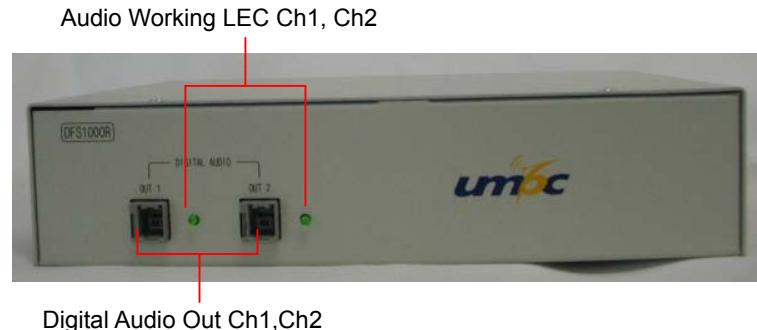


Figure 2.2.1 Picture of Front Side

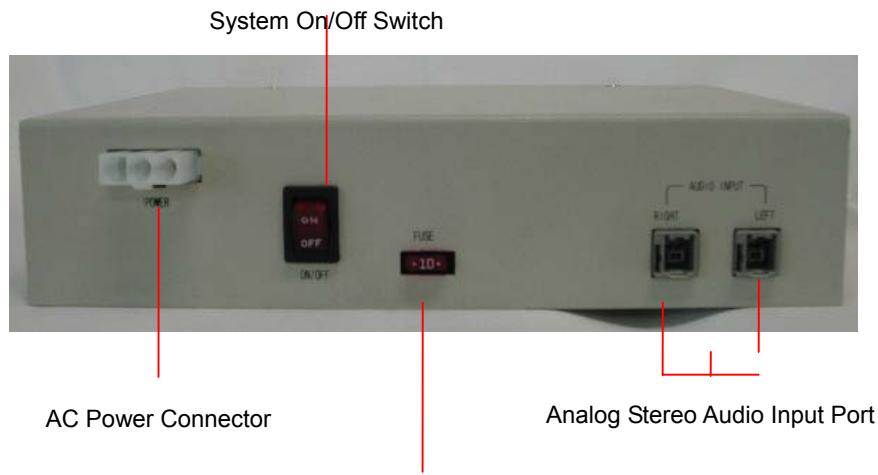


Figure 2.2.2 Picture of Rear Side

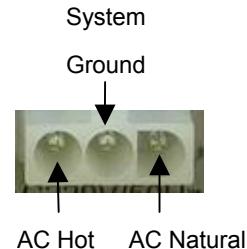


Figure 2.2.3 Picture of Power Inlet

2.3 Port Definition Summary

Parameter	Specification
Audio Input Port	Analog Max 1.0Vp-p Stereo Input Port
Audio Output Port	Digital Serial out 2Port

Table 2-1 In / Out Port Configuration

2.4 Electrical Characteristics

Parameter	Min.	Typ.	Max.	Unit
Input Supply Voltage	AC90		AC260	V
Power Dissipation				
Storage Temperature	-65		+150	°C
Operating Temperature	-40		+85	°C
Humidity	10		80	%
Support Distance(Output)	1		50	m

Chapter 3 Audio FM Transmitter system Descriptions

2.5 Physical Dimensions

The DFS1000R converter contains printed circuit boards mounted with electronic components and analog audio -to-digital audio logic. The physical dimensions are shown in the diagram below and depict the expected final dimensions for the conversion box.

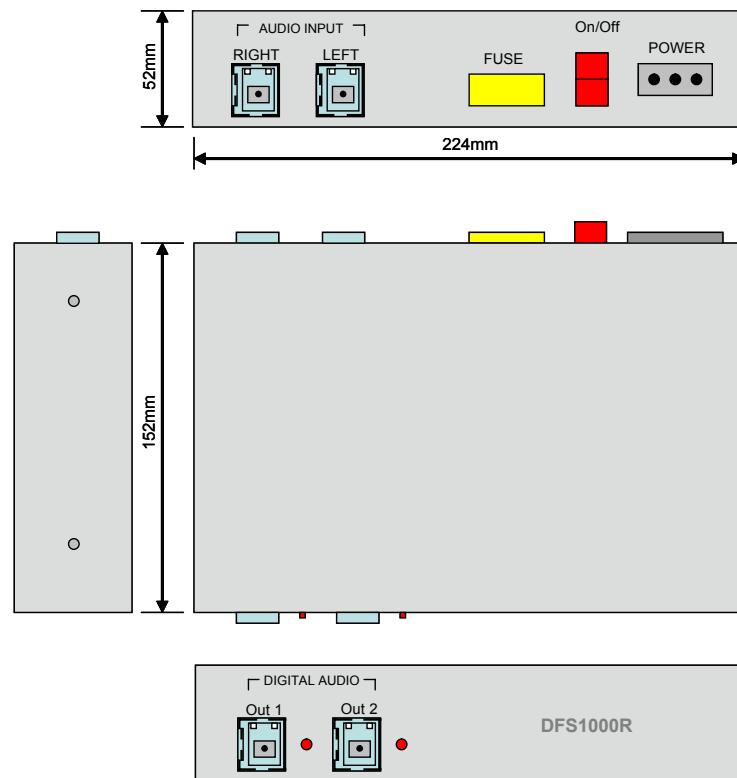


Figure 2.5.1 . DFS1000R Physical Dimension

3.1 Feature Summary

- Complete S/PDIF-Compatible Receiver
- 32 kHz to 192 kHz Sample Frequency Range
- Low-Jitter Clock Recovery
- On-Chip Channel Status Data Buffer Memories
- Auto-Detection of Compressed Audio Input Streams
- Carrier Frequency : Ch1 : 88.1MHz / 88.5MHz , Ch2 : 88.1MHz / 88.5MHz

The DFS100T System is converter for FM Broadcasting.

This system is a receives and decodes one of 1 stereo pairs of digital audio data according to the IEC60958, S/PDIF, EIAJ CP1201, or AES3 interface standards. The DFS100T System has serial digital audio input port and comprehensive control ability through a selectable control port in Hardware Mode.

A low-jitter clock recovery mechanism yields a very clean recovered clock from the incoming AES3 stream.

Stand-alone operation allows systems with no microcontroller to operate the DFS100T System with dedicated output port for FM Broadcasting.

3.2 Identification of control

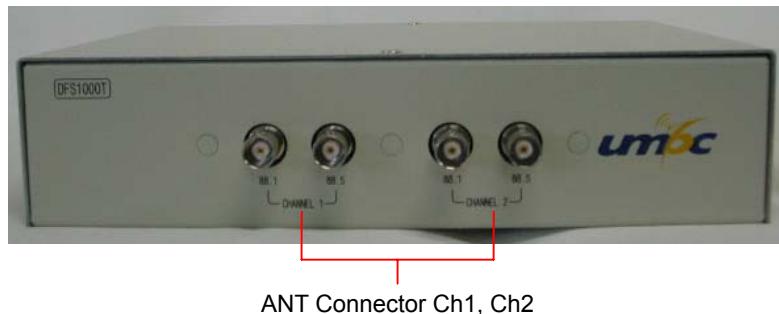


Figure 3.2.1 Picture of Front Side

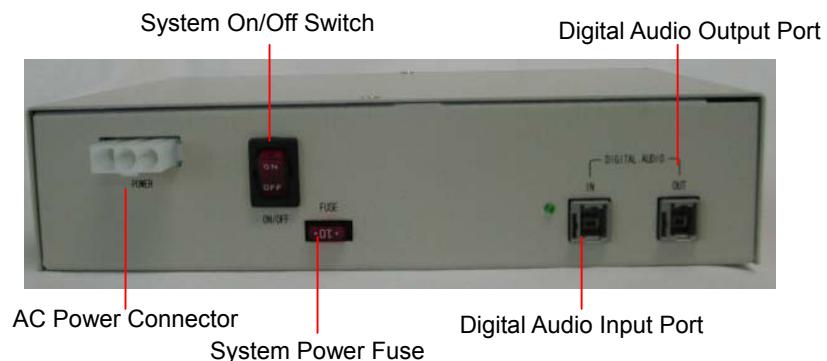


Figure 3.2.2 Picture of Rear Side

3.3 Port Definition Summary

Parameter	Specification
Audio Input Port	Digital Serial Input Port
Audio Output Port	Digital Serial out 2Port
Channel Frequency	PLL Synthesizer System Support simultaneously 2Ch
Carrier Frequency	Ch1 : 88.1MHz / 88.5MHz Ch2 : 88.1MHz / 88.5MHz

Table 2-1 In / Out Port Configuration

3.4 Electrical Characteristics

Parameter	Min.	Typ.	Max.	Unit
Input Supply Voltage	AC90		AC260	V
Power Dissipation				
Storage Temperature	-65		+150	°C
Operating Temperature	-40		+85	°C
Humidity	10		80	%
Support Distance(Output)	1		50	m

3.5 Physical Dimensions

The DFS1000T converter contains printed circuit boards mounted with electronic components and DIGITAL AUDIO -to- FM transmitter logic. The physical dimensions are shown in the diagram below and depict the expected final dimensions for the conversion box.

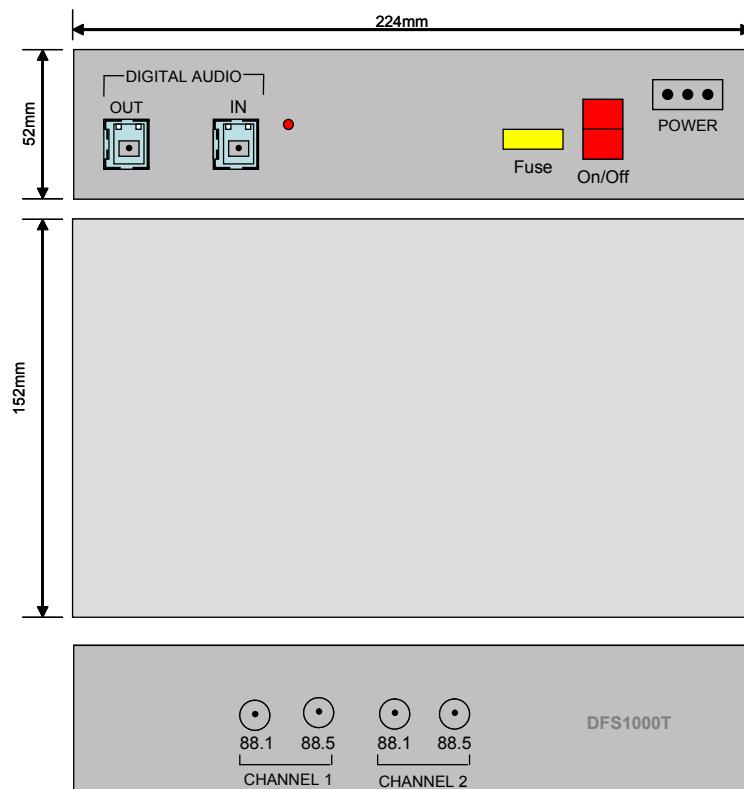


Figure 3.5.1 . DFS1000T Physical Dimension

Support

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