

DATA SHEET

OM5608

Multimedia radio tuner

Preliminary specification
File under Integrated Circuits, IC01

1995 Oct 17

Multimedia radio tuner

OM5608

FEATURES

- Local/DX switching to improve large signal handling on FM when an outdoor antenna or cable network is connected
- Local/DX function provides different search levels which are useful for spectrum analyser functions
- Three extra I/O expander ports are available for general purpose (I²C-bus only)
- MPX signal available
- The module meets the "FCC regulations"
- The OM5608 operates in accordance with "CENELEC EN55022" and "CENELEC EN50082-1".



ANTENNA CONNECTOR

RF connector

- RF-connection: F-connector (FM input impedance = 75 Ω).

GENERAL DESCRIPTION

The OM5608 is an FM-radio tuner which includes a brand new concept in tuning techniques. The new tuning concept combines the advantages of hand tuning together with electronic facilities and features. The tuner is I²C-bus controlled and designed for the Japanese FM-band.



MBG196

Fig.1 F-connector.

ORDERING INFORMATION

UNIT	FREQUENCY (MHz)	BUS	RF CONNECTOR
FM I ² C-bus	76 to 90	I ² C-bus	F-connector

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PINNING

PIN	DESCRIPTION
1	port 5 PCF8574A (I ² C-bus)
2	port 6 PCF8574A (I ² C-bus)
3	port 7 PCF8574A (I ² C-bus)
4	SCL; serial clock input ⁽¹⁾
5	stereo indicator
6	SDA; serial data input/output ⁽¹⁾
7	supply voltage (+5 V)
8	supply voltage (+12 V)
9	audio right output
10	ground
11	audio left output
12	MPX signal

Note

- See "The I²C-bus and how to use it" (ordering number 9398 393 40011).

LIMITING VALUES

IEC publication 68-1; full specification; EMC behaviour: the module is designed to be FCC friendly (part 15).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
T	temperature		15	35	°C
RH	relative humidity		25	85	%
T _{amb}	operating ambient temperature	functional operation	-10	+60	°C
T _{stg}	storage temperature		-20	+70	°C
V _{esd(pc)}	electrostatic handling for pin connector	note 1	-	2	kV
		note 2	-	300	V
V _{esd(RFc)}	electrostatic handling for RF-connector	note 3	-	4	kV
		note 4	-	500	V

Notes

- Class B: human body model (1.5 k Ω , 100 pF).
- Class B: charge device model (0 Ω , 200 pF).
- Class A: human body model (1.5 k Ω , 100 pF).
- Class A: charge device model (0 Ω , 200 pF).

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CHARACTERISTICS

Direct coaxial feed to 75 Ω RF-connector with coax; signal generator impedance = 75 Ω ; RF levels are EMF/2; $\Delta f = 75$ kHz; $f_i = 85$ MHz; $f_{mod} = 1$ kHz; left and right audio output; $R_L = 600$ Ω ; audio filter = 22 Hz to 15 kHz; temperature range = 15 to 35 $^{\circ}$ C.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
FM mono						
Φ_{lim}	3 dB limiting sensitivity	$V_{11,12} = -3$ dB; $V_{11,12} = 0$ dB at $V_{FMi} > 100$ μ V	–	3.5	5	μ V
Φ_{RF}	RF sensitivity	$(S + N)/N = 26$ dB	–	2.2	4	μ V
S/N	signal-to-noise ratio	$V_{FMi} = 1$ mV	–	71	–	dB
f_L	lower audio frequency bandwidth limit	pre-emphasis 75 μ s; measured lower limit (-3 dB); $f_{ref} = 1$ kHz	–	40	70	Hz
f_H	upper audio frequency bandwidth limit	pre-emphasis 75 μ s; measured upper limit (-3 dB); $f_{ref} = 1$ kHz	12.5	14	–	kHz
α_{AM}	AM suppression	AM modulation $m = 30\%$; $f_{AF} = 1$ kHz	40	58	–	dB
THD	total harmonic distortion		–	1.5	3	%
V_{FMi}	search sensitivity	search stop bits 17 and 16 = 0	–	12	36	μ V
V_{FMi}	large signal handling	DX mode; measured distortion = 10%	–	1000	–	mV
att_{RF}	RF attenuation in local mode		15	20	30	dB
V_{FM}	audio output voltage level	$V_{FMi} = 1$ mV; $\Delta f = 75$ kHz; $f_{AF} = 400$ Hz	700	850	–	mV
FM stereo						
S/N	signal-to-noise ratio	$V_{FMi} = 1$ mV	60	63	–	dB
α_{cs}	channel separation	$f_{AF} = 1$ kHz; $V_{FMi} = 1$ mV	22	28	–	dB
$ \Delta I_O $	channel imbalance	$f_{AF} = 1$ kHz; $V_{FMi} = 1$ mV	–	0.5	3	dB
α_{19}	carrier and harmonic suppression		25	26	–	dB
α_{38}	carrier and harmonic suppression		25	27	–	dB
α	stereo blend function	$V_{FMi} = 100$ μ V	5	10	–	dB
THD	total harmonic distortion		–	–	3	%

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PACKAGE OUTLINE

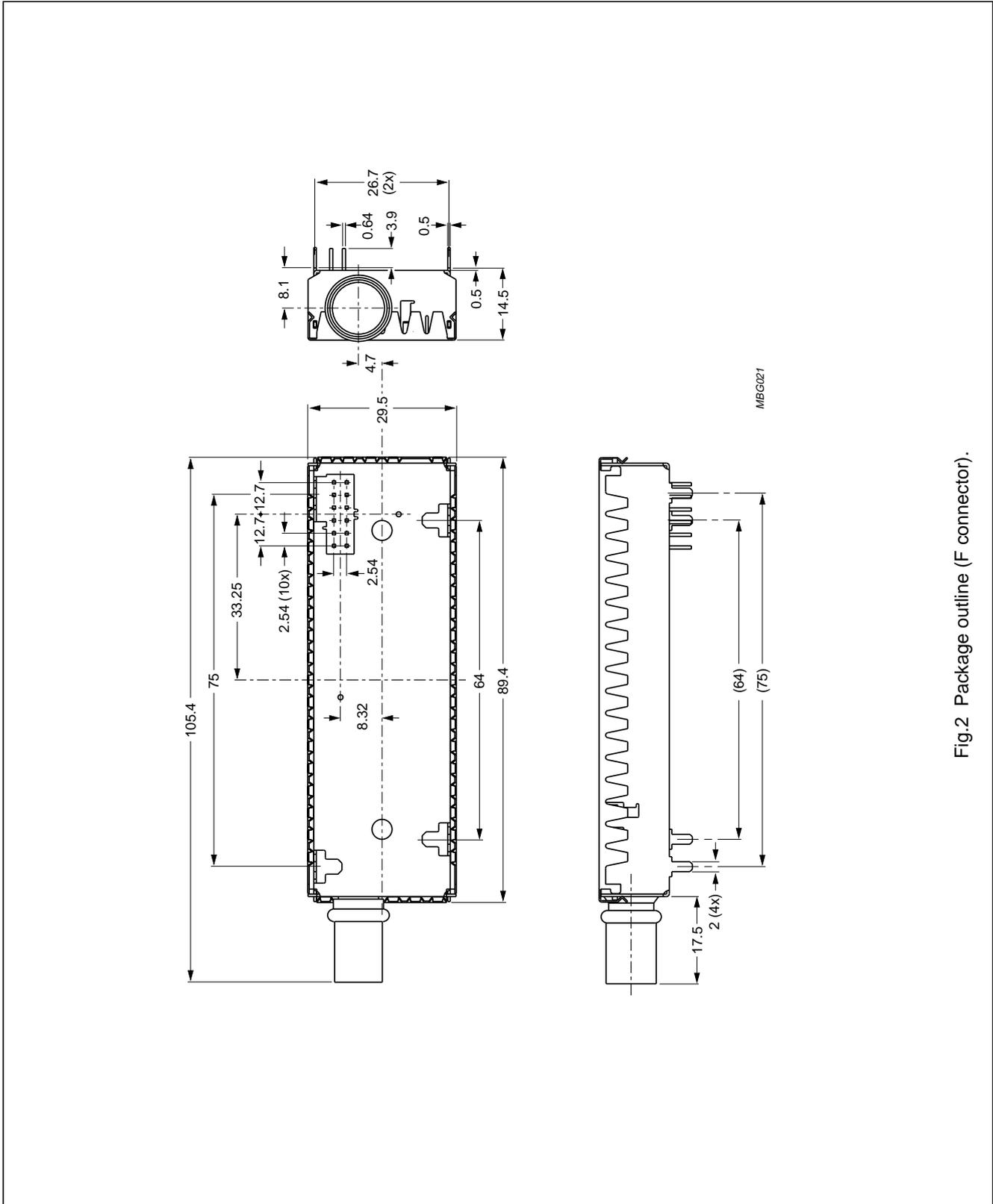


Fig.2 Package outline (F connector).

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DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

PURCHASE OF PHILIPS I²C COMPONENTS



Purchase of Philips I²C components conveys a license under the Philips' I²C patent to use the components in the I²C system provided the system conforms to the I²C specification defined by Philips. This specification can be ordered using the code 9398 393 40011.

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NOTES

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