

## Dual Port Adapter for AM/FM and DAB3 Broadcast Signals with Resistive DC Loads

### Features

- splits a common signal into 2 channels
- DC loads in each channel
- optical indication of phantom voltage
- direct fakra connection to (DUT)

### Applications

- AM, FM, DAB
- automotive infotainment test
- R&D
- production



### At a Glance

FDML from Becker Nachrichtentechnik is a compact dual port adapter as table top unit in 50 Ohm technology. The FDML splits one common multiplex signal into two channels. The channel ports have a coded Fakra connector, that have become standard in automobile infotainment, for the direct connection to device under test (DUT). Each channel has an integrated DC load for the emulation of active antennas. Thus the DUT has the full RF and DC environment for ready to use operation in laboratories.

The presence of phantom voltages coming from the DUT is indicated by a LED on the front. With help of the FDML cost efficient solutions for multi signal distribution in R&D and factory buildings can be realized using only one common coaxial cable for transmission of AM, FM and DAB broadcast signals to the test setups.

### Special Features

The FDML unit enables plug and play solution for the RF connection of car infotainment components. FDML has dual ports for "analogue" AM/FM" and digital "DAB3" radio signals. Both RF ports features resistive DC loads for the phantom supplies in the DUTs.

A dual Fakra cable with cable length 1 m is part of the product package.

### Rugged Design

The FDML unit is built in a milled aluminum case to give best shielding for avoiding EMI influences caused by radio signals coming from the environment. The RF connector for the multi signal input is N female.

**RF Specification**

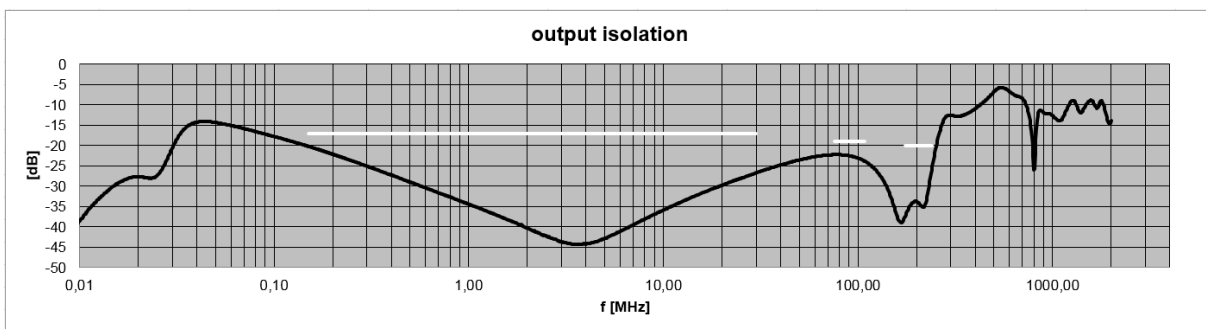
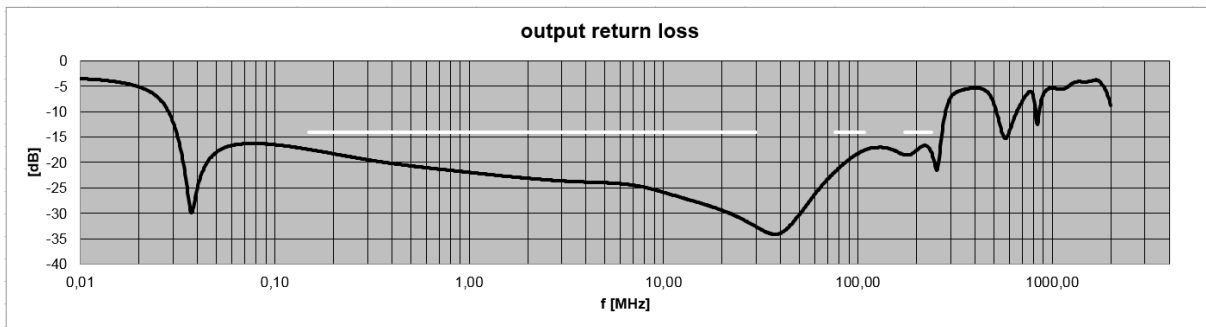
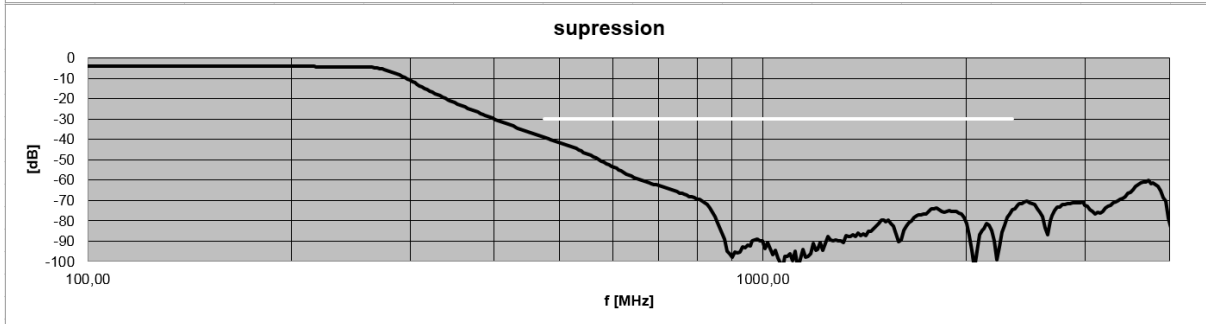
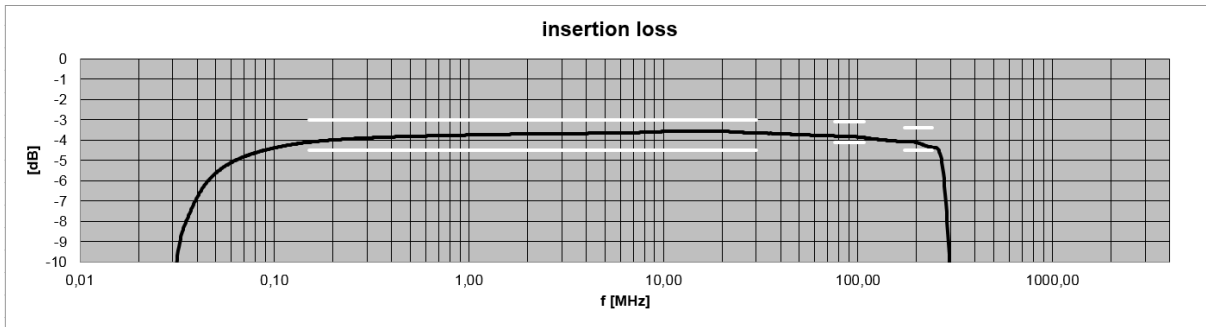
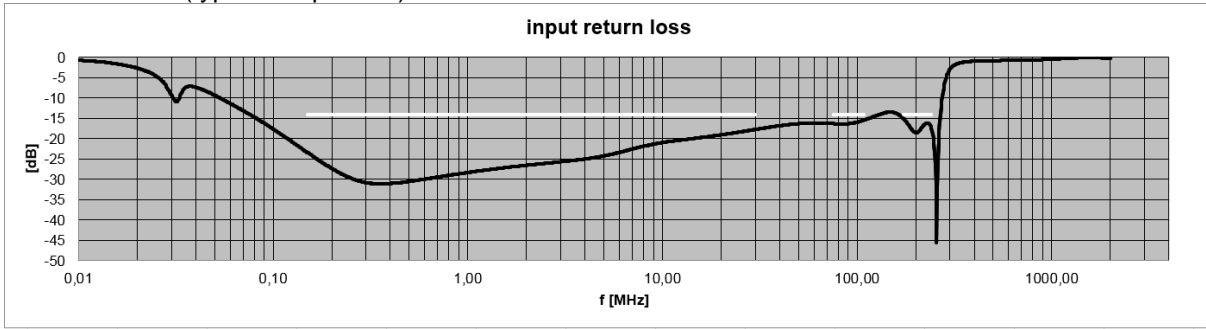
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	$Z_{in} / Z_{out}$		50		Ohm	
<b>RF COM port</b>						
RF input power	$P_{in}$			+10	dBm	
maximum DC Voltage	$U_{DC}$			20	V	
ESD discharge resistor	$R_{ESD}$		4.7		k $\Omega$	
connector	$X_{COM}$	N female				
<b>Dual AM/FM/DAB</b>						
AM low frequency	$f_{AMmin}$		50	150	kHz	
AM high frequency	$f_{AMmax}$	30			MHz	
FM frequency range	$f_{FM}$	76		108	MHz	
DAB3 frequency range	$f_{DAB3}$	174		240	MHz	
return loss	$S_{11}, S_{22}$		-17	-14	dB	
insertion loss	$S_{21}$	-4.5	-3.5	-3.0	dB	AM
	$S_{21}$	-4.1	-3.6	-3.1	dB	FM
	$S_{21}$	-4.5	-4.0	-3.4	dB	DAB
output isolation	$S_{23}$		-20	-17	dB	AM
	$S_{23}$		-21	-19	dB	FM
	$S_{23}$		-29	-20	dB	DAB
suppression	$a_{DVB-T}$		-80	-30	dBr	474 MHz $\leq$ f $\leq$ 2345 MHz
RF power	$P_{in}$			+10	dBm	
DC load	$I_{DC}$	32	35	38	mA	$U_{DC} = 8.5$ V
	$U_{DC}$	0	8.5	10.0	V	$R_L = 248 \Omega$ , 400 mW max.
connector	$X_{AMFMDAB}$	Dual Fakra B plug (white, male)				

**Common Specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
dimensions	W x H x D	approx. 59 x 36 x 120			mm	without connectors
weight	m		0.7		kg	
operating temp. range	$T_o$	+5		+40	$^{\circ}$ C	housing surface
storage temp. range	$T_s$	-40		+70	$^{\circ}$ C	
ordering information	FDML		P/N: 1310.6103.2		dual Fakra cable is part of product package	



## S-Parameters (typical responses)



## Appearances

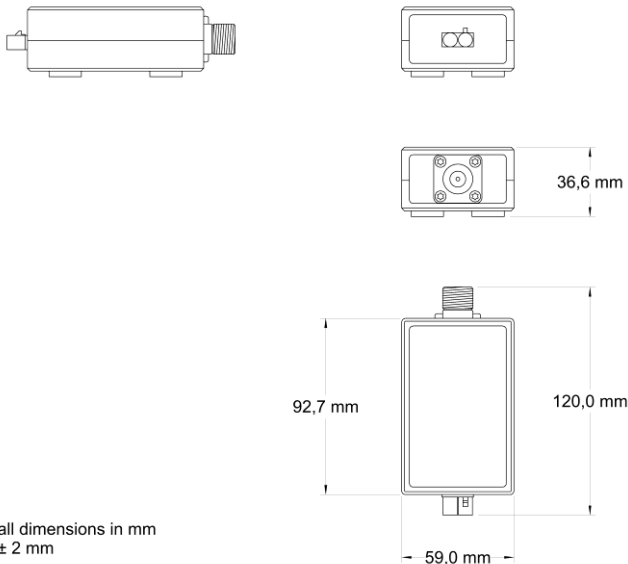


Front side



Rear Side

## Dimensions



all dimensions in mm  
± 2 mm

## Related Products

Product	Description	P/N
FDMX	De-Multiplexer for Broadcast and Navigation Signals with Resistive DC Loads. Dual (AM/FM), DAB3/DAB-L, DVB-T, GNSS, SAT (SDARS)	1310.6003.1
FDMX-PT	De-Multiplexer for Broadcast and Navigation Signals with Programmable DC Loads 0 ... 300 mA. Dual (AM/FM), DAB3/DAB-L, DVB-T, GNSS, SAT (SDARS)	1310.6003.2
FDMX2	De-Multiplexer for Broadcast and Navigation Signals with Resistive DC Loads. Dual (AM/FM/DAB3), DVB-T, GNSS, SAT (SDARS)	1809.6003.1
FDMX2-PT	De-Multiplexer for Broadcast and Navigation Signals with Programmable DC Loads 0 ... 300 mA. Dual (AM/FM/DAB3), DVB-T, GNSS, SAT (SDARS)	1809.6003.2
FDML	Dual Port Adapter for AM/FM and DAB3 Broadcast Signals with Resistive DC Loads	1310.6103.2
FDMX-CS	Fakra Cable Set, length 1 m. Includes 4 RF cables with 1 dual RF cable	1310.0107.1
FDMX-AA	AC/DC Wall Wart Power Adpater for USB	1310.0108.1

