

RADIO BOARD

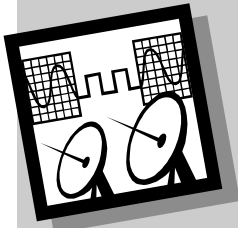
Type 4070

**Front view of the
RADIO BOARD**

- Complete radio trainer in one Board
- All the important signals tappable at measuring points
- With built-in AM and FM tuner
- With stereo decoder and integrated loudspeakers
- With built-in sinewave generator
- Also available in the handy hps box
- Plug-in field for FM/AM Transmitter (Type 4070.2)

Possible experiments with the RADIO BOARD

- Experiment with the Tone Control
- Experiments with the AM
 - Generation of an AM Signal with the FM/AM Transmitter
 - Measuring the AM Antenna Signal
 - Determination of the Oscillator Frequency
 - Measurements at the AM Mixer
 - Measurements at the IF Stage and at the Demodulator
 - Automatic Gain Control AGC
- Experiments with the FM
 - Measuring the Adjustable Oscillator Frequency
 - Measurements in the IF Stage
 - Measuring at the Demodulator Output with Mono Reception
 - Measuring at the Demodulator Output at Stereo Reception
 - Measurements in the Stereo Decoder
 - Behaviour with and without DE-Emphasis



RADIO BOARD

Type 4070

Communications / Radio Engineering

Accessories Recommended

- Set of Accessories (Type 4070.1), consisting of connecting leads (2 mm) and plugs (2 mm)
- FM/AM Transmitter (Type 4070.2)

FM / AM Transmitter (Type 4070.2)



The „FM/AM Transmitter“ is a module for generation of a FM and AM signal.

Technical data

- Modulation input:
 $u_{e\text{ss}} = 700\text{ mV}$
- Modulation output:
AM signal: carrier 1 MHz
FM signal: carrier 100 MHz
- Supply voltage: 9 V DC
- Dimensions / weights
75 x 56 x 35 mm (w x h x d);
weight: approx. 0.1 kg

Technical Data

Mains connection

- Mains voltage:
230 V AC / 115 V AC (110 V AC); 50 ... 60 Hz; 10 VA

AM unit

- Ferrite antenna at the input circuit
- Frequency range: 540 ... 1600 kHz, tunable by LC input circuit, consisting of capacitance diodes
- HF amplifier
- Oscillator for generating the IF frequency by means of a mixer, oscillator frequency: approx. 900 Hz ... 2 MHz
- IF circuit with filter (455 kHz), IF amplifier and AGC

FM unit

- Antenna input for throw antenna
- Input circuit with LC element, tunable with capacitance diodes
- Frequency range: 88 ... 108 MHz
- HF amplifier
- Oscillator for generating the IF frequency by means of a mixer
- IF amplifier with level detector output
- Demodulator for generating the MPX signal
- PLL demodulator with mono/stereo switching and deemphasis inputs

Sound adjuster

- 2 inputs: right channel / left channel
- Adjustable: volume, treble, bass and balance

2 AF amplifiers

- Output power: 3 W

Sinewave generator

- 5 frequency ranges: 300 Hz ... 34 kHz, stepless adjustable
- Output voltage: $U_{pp} = 500\text{ mV}$

Mechanical data

The front panel of the RADIO BOARD is made of 5 mm thick Laminat, matt blue in colour with white engraving representing the built-in function groups. The rear of the Board is protected with a grey plastic cover. Its shape allows the Board to be placed at an ergonomically favourable angle for example on a table. The RADIO BOARD can be converted into a portable training unit by simply screwing it into a Box: All the experiments can be conducted directly in the Box. Dust-free storage and protection against transport damages are further advantages of the Box version.

Dimensions and weights

- RADIO BOARD (Type 4070):
532 x 297 x 110 mm (w x h x d); weight: 3.2 kg
- Box version, consisting of:
RADIO BOARD (Type 4070) and Box (Type 4070.20):
580 x 450 x 155 mm; total weight: 6.4 kg

Subject to technical modifications.