

FM Generator Module Specification

<p>PTX-50 FM Generator Module</p>	 <p>SOLD OUT Support and servicing parts still available.</p>
<p>PTX-10 FM Generator Module</p>	 <p>SOLD OUT Support and servicing parts still available.</p>
<p>PTX-02 FM Generator Module</p>	 <p>SOLD OUT Support and servicing parts still available.</p>
<p>PTX-LCD Display</p>	 <p>SOLD OUT Support and servicing parts still available.</p>

Features

- Compact no-tune design
- Digital tuning with in-lock indication
- Separate input for RDS or SCA
- BNC connectors
- LCD display (optional, sold separately)
- Stereo encoder not included
- Fixed output power

Typical Applications

- RDS/RBDS testing and development
- Low power FM broadcasting

Technical Specifications

	PTX-50	PTX-10	PTX-02
Output power	4 W	1 W	200 mW ¹⁾
Output stage transistor	2SC1971	2N3553	BFG135
Supply current	0.8 A	0.4 A	0.15 A
Supply voltage	11.0-13.0 V (stabilized or from a battery)		
Polarity protection	Yes (30 sec., max. 2 A)		
Standard frequency range	87.5-107.9 MHz		
Standard tuning step	0.1 MHz		
PLL lock time	2 sec.		
Lock indication delay	1 min.		
Audio/MPX input sensitivity	3 V pp (for 75 kHz freq. deviation, see graph)		
RDS/SCA input sensitivity	0.3 V pp (for 7.5 kHz freq. deviation, see graph)		
S/N ratio	>60 dB		
Signal I/O connectors	Unbalanced, BNC (50 Ω)		
Output load impedance	50-75 Ω		
Audio/MPX input impedance	20 kΩ		
RDS/SCA input impedance	600 Ω		
LCD connector	Standard HD44780		
Power supply connector	2.1 mm, central pin is positive (+)		
Board dimensions	109 x 54 mm		

Notes:

Typical values shown.

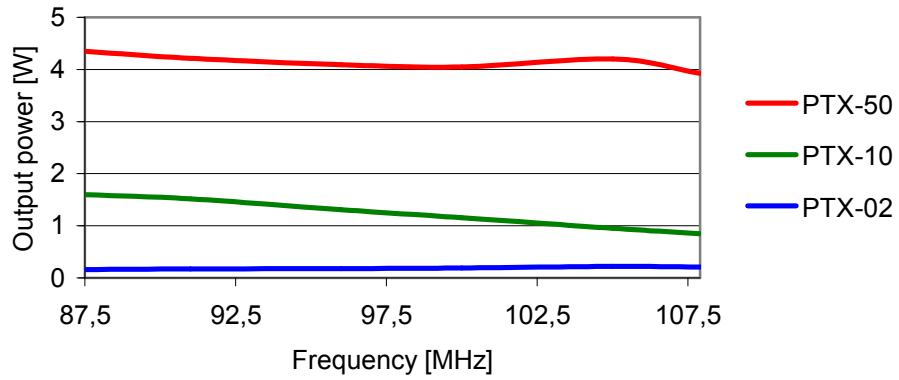
The modules are not intended for resell purposes and are not available in large quantity.

1) On request the output power can be fixed to any value in range 10 to 200 mW.

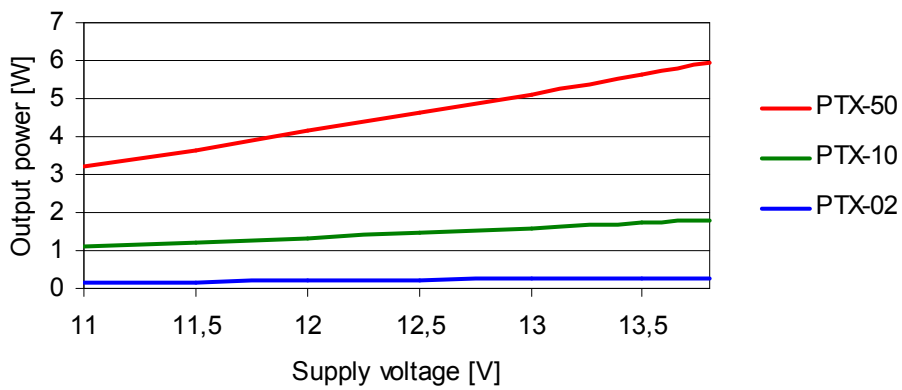
The module cannot be modified for higher output power.

Typical Performance Characteristics

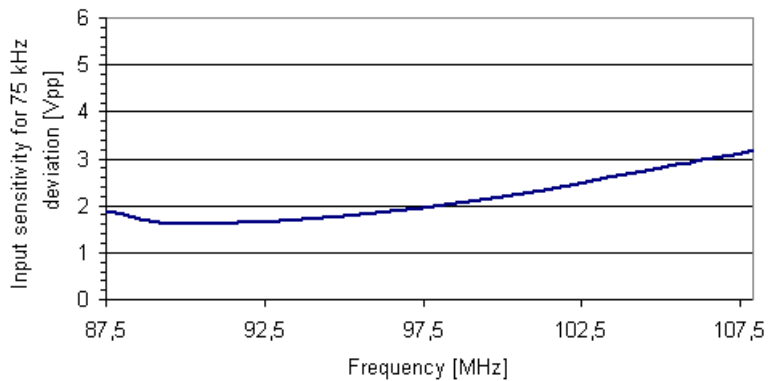
Output power vs. Frequency; 12 V, 50 Ohms, no tune



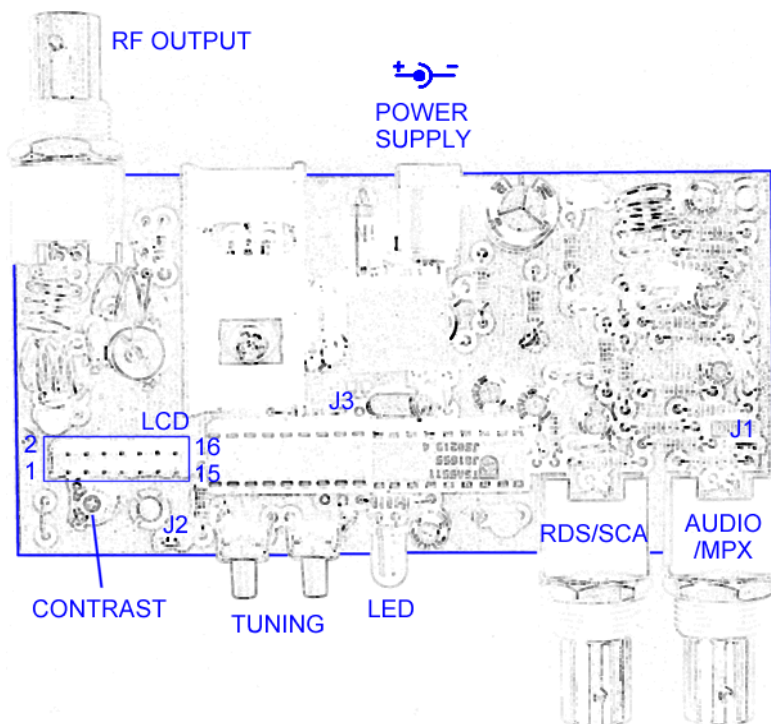
Output power vs. Supply voltage; 50 Ohms, 98 MHz



Input sensitivity for 75 kHz deviation vs. Frequency, no preemphasis



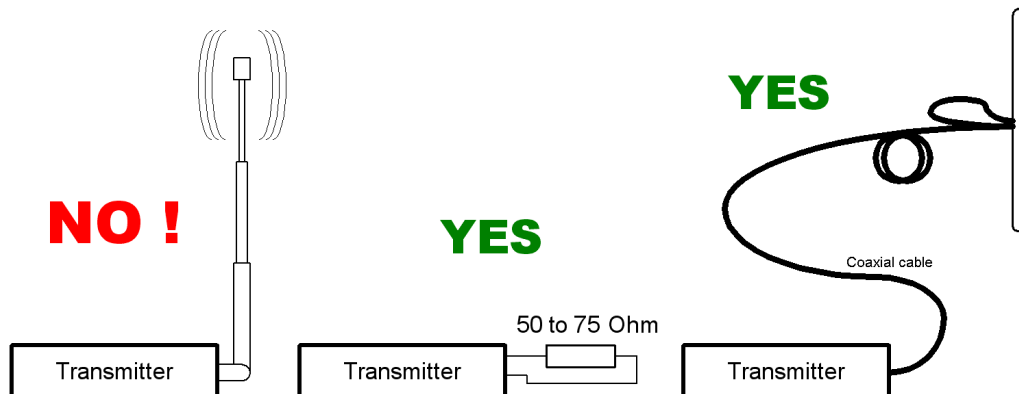
Layout



- J1 - Pre-emphasis jumper (open = off, close = on)
- J2 - LCD backlight jumper
- J3 - PLL in-lock status output (5 V = in lock)

Operating Instructions

1. Connect dummy load or matched antenna via coaxial cable to the output. Do not connect power supply if there is nothing plugged in the rf output connector!
2. Connect RDS encoder.
3. If required, connect monaural audio or stereo MPX source (stereo encoder).
4. Turn on power supply and tune the desired frequency using the buttons.
5. After a few seconds of idle the frequency is tuned and stored to EEPROM (icon of diskette). Finally the buttons are locked (icon of key) to avoid unwanted frequency changes. Unlock by pressing any button for a longer time.
6. The display and LED indicate PLL in-lock state (the indication may be delayed for up to two minutes although the frequency is already tuned and stable). This state is also provided at J3.
7. Set right RDS signal and audio level.



Important!



- Do not operate on higher power supply voltage than specified!
- Do not touch the inductors!
- Do not operate without antenna!
- Do not short circuit the output!
- Use current limited power supply or insert a fuse to the power supply path!
- Assure good air ventilation! (Active cooling is not required.)
- The heatsink temperature may exceed 60 °C/140 °F! (Does not apply to PTX-02.)

Troubleshooting

Problem	Solution
The unit does not work; the LED/LCD does not indicate anything.	Check power supply.
The output transistor is warm but the coverage range is very poor.	Check antenna cable and the antenna.
Can't see anything on the LCD.	Adjust right LCD contrast, check the flat cable connection.
There is only silence on the frequency tuned.	Audio source or connection problem.
There are a lot of trebles in audio.	Turn off the pre-emphasis.
There are no trebles in audio.	Turn on the pre-emphasis.
There is hum in audio.	Power supply problem or double grounding or antenna problem (a piece of wire or a telescopic aerial is not the antenna suitable for FM broadcasting).
The audio is distorted.	Decrease the audio level. Use any FM analyzer to set right audio level precisely. Make sure the PTX pre-emphasis is turned off when stereo encoder is used.

Contact, Support and Servicing

<http://pira.cz>
mail@pira.cz

The equipment has been thoroughly tested and found to be in proper operating condition when shipped. The manufacturer is not liable for any damages, including but not limited to, lost profits, lost savings, or other incidental or consequential damages arising out of the use of this product.

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