



GENERAL RESEARCH OF ELECTRONICS, INC.

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SPECIFICATIONS

SUBJECT: 200 CHANNEL FREQUENCY MEMORIES VHF/UHF PROGRAMMABLE WITH
SKYWARN AND WX SAME AM/FM SCANNING RECEIVER with FM RADIO
MODEL : PSR-200U

1. GENERAL

1.1. Programmable channel : 10 bank 20 channel each plus FM 20channel memory banks
6 pre-programmed band
Tune from the channel frequency
7 WX pre-programmed frequencies
WX alert and SAME receiving with 7 FIPS(Federal Information
Processing Standard) area code memories
1 priority channel
153 preprogrammed frequencies

1.2. Receiving system : PLL synthesizer dual-conversion superheterodyne

1st IF 10.7 MHz : The 1st Local OSC frequency for VHF Low,
FM Radio and Aircraft band employs upper
side of receiving frequency range.
:The 1st Local OSC frequency for VHF High
and UHF Low band employs lower side of
receiving frequency range.

2nd IF 455 kHz : The 2nd Local OSC frequency employs
lower side of 1st IF.

1.3. Frequency range	:	<u>Freq.</u>	<u>Step</u>	<u>Mode</u>
		29.0000-54.0000 MHz	5 kHz	FM
		87.3000-107.9000 MHz	100 kHz	FM
		108.0000-136.99166 MHz	8.33 kHz	AM
		137.0000-143.9875 MHz	12.5 kHz	FM
		144.0000-148.0000 MHz	5 kHz	FM
		148.0125-150.7875 MHz	12.5 kHz	FM
		150.8000-161.9950 MHz	5 kHz	FM
		162.0000-174.0000 MHz	12.5 kHz	FM
		380.0000-512.0000 MHz	12.5 kHz	FM

– Continued –

PRODUCT DEVELOPMENT & MANUFACTURING

- 1.4. 6pre-programmed Banks Search : MAR (Marine band)
FD/PD (Fire and Police department)
AIR (Aircraft band)
HAM (HAM band)
WX (Weather Frequency)
FM(FM Radio)
- 1.5. WX 7 frequencies with alert : 162.400, 162.425, 162.450, 162.475, 162.500, 162.525,
function 162.550 MHz
- 1.6. Scanning rate : 40 channels/sec.
- 1.7. Search rate : 80 steps/sec.
- 1.8. Display : LCD with back-lighting
- 1.9. Speaker : Built-in ϕ 77 mm 8 Ohms dynamic speaker
- 1.10. Audio output : 0.9 Watt
- 1.11. Operating voltage and power : AC 120 Volts, 60 Hz 17 Watts
consumption use: AC-DC adaptor
- 1.12. Dimension : Approx. 210 (W) x 175 (D) x 60 (H) mm
- 1.13. Weight : Approx. 700 g
- 1.14. Accessory : Telescopic antenna, UL listed AC-DC adaptor and
Owner's manual
- 1.15. Memory backup : No battery back-up required, EEPROM used

2. ELECTRICAL

Standard Test Condition

- | | | |
|-----------------------------|---|--|
| (1) Power source voltage | : | AC-DC adaptor (GA-06D-2670) 9 Volts DC, 400 mA |
| (2) Antenna impedance | : | 50 Ohms |
| (3) Test temperature | : | 25 degrees C |
| (4) Standard signal level | : | 100 μ V |
| (5) Modulation frequency | : | 1 kHz |
| (6) Reference FM deviation | : | 3.0 kHz |
| (7) Reference AM modulation | : | 60% |
| (8) Reference audio output | : | 75 mWatts |
| (9) Audio output load | : | 8 Ohm resistive load |

		Nominal	Limit
2.1. Frequency range	: VHF Low		29-54 MHz
	FM Radio		87.3-107.9 MHz
	Aircraft		108-136.99166 MHz
	VHF High		137-174 MHz
	UHF Low		380-512 MHz
2.2. Sensitivity	:		
12 dB SINAD at 3kHz Dev.	VHF Low	0.2 μ V	0.8 μ V
	VHF High	0.3 μ V	1.5 μ V
	UHF Low	0.4 μ V	2.0 μ V
12 dB SINAD at 45kHz Dev.	FM Radio	0.5 μ V	2.0 μ V
12 dB SINAD at 60% Mod.	Aircraft	0.4 μ V	2.0 μ V
2.3. WX alert tone decode sensitivity	: WX	0.3 μ V	1.0 μ V
1050 Hz 3 kHz Dev. at 162.400 MHz			
2.4. WX alert tone decode range	:	1050 $\pm$ 30 Hz	$\pm$ 40 Hz
4 kHz Dev. 1 μ V at 162.400 MHz			
2.5. WX SAME	:	0.7 μ V	2.0 μ V
4 kHz Dev. at 162.4 MHz			
2.6. WX alert tone priority checking time:		3.0 sec.	2–4 sec.
Note: When receiving WX alert in priority operation, the priority sampling time up to 2 sec. is added to this depending on Alert tone transmission timing.			
2.7. CTCSS decode sensitivity	:	0.5 μ V	3 μ V
350 Hz Dev. At 450 MHz			
2.8. DCS decode sensitivity	:	0.5 μ V	3 μ V
350 Hz Dev. At 450 MHz			
2.9. Image ratio	: VHF Low at 41 MHz	40 dB	30 dB
	FM Radio at 98 MHz	18 dB	10 dB
	Aircraft at 124 MHz	15 dB	8 dB
	VHF High at 154 MHz	18 dB	8 dB
	UHF		Not specified
2.10. Squelch sensitivity (Band center)			
Threshold	: AM/FM	0.5 μ V	2.0 μ V
	FM Radio	1.0 μ V	3.0 μ V
Tight: S/N	: AM	20 dB	10 dB
	FM	25 dB	15 dB
	FM Radio	60 dB	50 dB

			Nominal	Limit
2.11. Selectivity	:			
at 154 MHz	–6 dB		±8 kHz	>±5 kHz
	–50 dB		±17 kHz	<±24 kHz
at 98 MHz	–6 dB		±50 kHz	>±35 kHz
	–50 dB		±180 kHz	<±240 kHz
2.12. Spurious rejection	:	VHF Low at 41 MHz	50 dB	30 dB
(Except Primary image)		VHF High at 154 MHz	50 dB	30 dB
		UHF Low		Not specified
2.13. IF rejection	:	10.7 MHz at 154 MHz	70 dB	60 dB
2.11. Acceptable radio frequency displacement at EIA RS-204D	:	VHF 154 MHz	±6 kHz	±3 kHz
2.14. Signal to noise ratio	:			
20 dB S/N at 3kHz Dev.		VHF Low at 41 MHz	50 dB	30 dB
		VHF High at 154 MHz	45 dB	30 dB
		UHF at 450 MHz	35 dB	25 dB
30 dB S/N at 45kHz Dev.		FM Radio at 98 MHz	60 dB	40 dB
20 dB S/N at 60% Mod.		Aircraft at 124 MHz	45 dB	30 dB
2.15. Residual noise	:	at 154 MHz	1 mV	3 mV
Vol. min. and Squelched				
2.16. Scanning rate	:	406-505 MHz (in 1MHz: Intervals)	40 ch/sec.	35–45 ch/sec.
2.17. Search rate	:	162.25-167.25 MHz	80 steps/sec.	75–95 steps/sec.
2.18. Scan and Search delay time	:		2 sec.	1–3 sec.
2.19. Priority sampling	:		2 sec.	1.5–2.5 sec
2.20. Audio output (T.H.D. 10 %)	:	RF input: 100 µV at 154 MHz		
8 Ohms R Load, 1 kHz			0.7 Watt	0.4 Watt
2.21. T.H.D. at 0.5 Watt output	:	RF input: 100 µV at 154 MHz	3 %	8 %
2.22. Audio max. power	:	RF input: 100 µV at 154 MHz		
8 Ohm internal speaker			0.9 Watt	0.7 Watt
32 Ohm at earphone mono/stereo (each phone)			17/10 mWatts	<25 mWatts

		Nominal	Limit
2.23. Audio frequency response at : -6 dB	RF input: 100 μ V at 154 MHz	300 Hz 2.0 kHz	200–400 Hz 1.5–3.0 kHz
	RF input: 100 μ V at 98 MHz	300 Hz 2.0 kHz	200–400 Hz 1.5–3.0 kHz
2.24. Intermediate frequency	: 1 st 10.7 MHz 2 nd 455 kHz		
2.25. Operating voltage and power : consumption	120 Volts AC, 60 Hz	4.5 Watts	5.8 Watts
2.26. Birdies and step frequency : when search	Under discussion		
2.27. Filter	: Monolithic crystal filter for 10.7 MHz and ceramic filter for 455 kHz		
2.28. Antenna impedance	: 50 Ohms		
2.29. Temperature range	: Test to specification between: +18°C – +35°C Operate (Need not meet spec.): 0°C – +43°C		

3. OPERATING CONTROLS AND CONNECTIONS

3.1. Volume control

3.2. Squelch control

3.3. Power switch

3.4. Keyboard (26 keys)

3.5. LCD indicator:

7 digits frequency

3 digits memory channel

FD/PD, AIR, HAM, MAR, WX, FM Radio

10 banks indication

Other indications

SRCH, SCAN, MAN, PGM, DLY, L/O, PRI, ▲, ▼, -b-, -t-, CH, L-r, ALERt,

Error, OFF tonE, on tonE, L-O Fr-Full, -dUPL-, SEndInG, rECd

Lo VHF, Hi VHF, UHF, 10M, 6M, 2M, 70CM, skywarn, **S** ■ ■ ■ ■ ■ ■ ■ ■ ■ ■

3.6. BNC type antenna connector

3.7. 9 Volt DC power jack

3.8. PC Interface and Clone jack(D=3.5mm stereo)

3.9. Earphone/pc jack (D = 3.5 mm stereo)

4. KEY FUNCTION

SCAN, FM Radio, SRCH,
SCAN/MANual, TUNE, WX, skywarn
FUNC, ▲ and ▼, CT/DC, PRiority

10 numeric key/bank selector
Decimal point/DELAY
ENTER
Lock-Out/Lock-Out ReView
PauSE/CLEAR
ENTER
ProGraM

5. FEATURES

5.1. 6 pre-programmed bands (MAR, FD/PD, AIR, HAM, WX, FM Radio)

5.2. CTCSS and DCS receiving system

5.3. 200 channel memories plus FM 20 channel

5.4. 200 channels automatic scanning for VHF to UHF band

5.5. QUICK PROGRAM when receive signals up to 200 channels

5.6. HYPERSCAN, 40 channels/sec. scanning rate and 80 steps/sec. searching rate

5.7. "Zeromatic" tuning system

5.8. 10 digit channel and frequency display with all function indicators

5.9. 100 channels lock-out in scan mode and 50 channels FM Radio mode

5.10. Built-in priority channel

5.11. WX alert and SAME receiving with 7 FIPS(Federal Information Processing Standard) area code memories

5.12. Skywarn function

- 5.13. Lock/Out ReView key to confirm lock out frequency sequentially
- 5.14. Change the direction at the searching by ▲(up) or ▼(down)
- 5.15. 2 second scan and search delay
- 5.16. Manual selection for channel
- 5.17. Scan mode [Cleared channels (000.000 freq.) do not scan.]
- 5.18. Tune from the channel frequency
- 5.19. Program mode
- 5.20. Key tone
- 5.21. LCD back-lighting
- 5.22. Duplicate frequency check system
- 5.23. Clone the memory to the other unit
- 5.24. 153 preprogrammed frequencies

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