

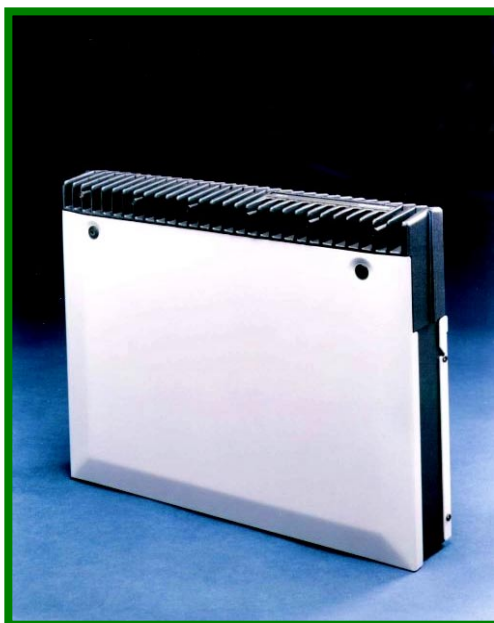
PRF10 ~ VHF/UHF FM BASE STATION

The PRF10 series is a family of microprocessor controlled, fully synthesized, frequency modulated, VHF and UHF base stations. The PRF10 is extensively used world-wide in diverse and exacting applications due to its superior RF and environmental specification, cost effectiveness and Team Simoco after sales support network.

Standard options include AC/DC power supplies with (external) battery backup facilities. The unit can be extensively customised using the PDP, a handheld programmer. All information is held in non-volatile EEPROM.

The sophisticated and versatile high performance PRF10 base station is unobtrusive but attractive in appearance and yet rugged enough to meet the demands of a wide range of environments. The all-metal construction ensures minimum case radiation making the PRF10 ideal for use in crowded communal site applications. A raised lid version is available which permits the inclusion of additional hardware options.

PRF10
Base Station



- High performance base station
- Standard variants for all applications
- Microprocessor controlled-fully programmable
- Comprehensive control facilities
- Internal duplexer, isolator and single antenna working options
- 19" rack or wall mounting options
- Easily customised



TRANSMITTER

The transmitter design is broadband with automatic power circuits to ensure stable RF output over the temperature extremes. The PRF10 is fully protected against excess heatsink temperature by use of progressive power reduction circuits to ensure a predetermined safe area of operation. The power is self-restoring when conditions permit. The RF output power is software controlled.

RECEIVER

The high performance receiver achieves full band performance by employing a self-tracking front-end design.

INTERNAL DUPLEXER AND ISOLATOR

The PRF10 case is designed to accept a wide range of duplexers and isolators. The full band switching capability of the PRF10 is limited only by the switching bandwidth of the duplexer.

The inbuilt isolator is of particular benefit when used in communal sites as a very effective means of reducing interference.

LOCAL/LINE CONTROL

The PRF1060 variant is equipped with versatile "M80" AC signalling. A range of Team Simoco controllers is available with "M80" signalling for use over 2/4 wire 600 ohm or derived circuits permitting Tx key, control of channel change, CTCSS defeat, squelch lift with or without remote supervisorys and many other functions.

BATTERY STANDBY OPERATION

All AC variants of a PRF10 include a 12V float charge battery system. An external sealed lead acid battery is automatically charged and powers the base station should the AC supply fail.

SERVICE AND CUSTOMISATION

Any board within the base station can be quickly removed for service or replacement keeping off-air time to a minimum.

The engineer's handset socket and programming socket are located on the base station motherboard.

The Portable Data Programmer (PDP) allows access to the extensive list of PRF10 customisation parameters. This feature enables the PRF10 to meet a very wide range of communications applications. All customisation is stored on non-volatile EEPROM.



PRF10 VARIANTS

The PRF10 is available as either PRF1050 or PRF1060 variants.

Equipment Variant	PRF1050	PRF1060
Application	Systems	Remote
Control	Local/Extended Parallel wire	Remote FSK M80 format
Programmable	✓	✓
Encode/Decode CTCSS	✓	✓
Internal Duplexer ¹	✓	✓
Internal Isolator	✓	✓
Two Antennae working	✓	✓
Antenna Changeover	✓	✓
GMSK 8kbps.	✓	
EST3000-086 Radio	✓	✓
ETS300-113 Data Signalling	✓	✓
ETS300-279 EMC	✓	✓
M80 Line Signalling		✓
Facilities Connector	✓	
Engineer's Handset Option	✓	✓
Hi-stab. (Special) Option	✓	✓
12V Battery Standby	✓	✓
Trunking Interface Cable	✓	
Equipment Alarms	✓	✓
RFW	✓	✓
Voting Encoder (Special)	✓	✓

¹ Internal duplexer not available for 225-235MHz variants.

TECHNICAL DATA

GENERAL SPECIFICATIONS

Operation	Full duplex, single frequency simplex, two frequency simplex.																		
Modulation	Phase F3E																		
Frequency Bands	<table> <tbody> <tr> <td>E0</td> <td>66-88 MHz:</td> <td>A9</td> <td>148-174 MHz:</td> <td>K1</td> <td>174-208 MHz:</td> </tr> <tr> <td>K8</td> <td>225-235 MHz:</td> <td>TM</td> <td>400-440 MHz:</td> <td>T4</td> <td>425-450 MHz:</td> </tr> <tr> <td>U0</td> <td>440-470 MHz:</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	E0	66-88 MHz:	A9	148-174 MHz:	K1	174-208 MHz:	K8	225-235 MHz:	TM	400-440 MHz:	T4	425-450 MHz:	U0	440-470 MHz:				
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K8	225-235 MHz:	TM	400-440 MHz:	T4	425-450 MHz:														
U0	440-470 MHz:																		
Switching Bandwidth	Full Band – (Restricted only by Duplexer and/or Isolator use)																		
Number Of Channels	15 - Remote (Using M80 Signalling); 100 - Local																		
Channel Spacing	12.5, 20 or 25kHz																		
Temperature Range	-30° C to +60° C (Operational); -40° C to +80° C (Storage)																		
Rf Connectors	Antenna/Transmitter – N-Type; Receiver – N-Type																		
Line I/O Impedance	600Ω Balanced																		
Type Approval	ETS300 086 Radio; ETS300 113 Data Signalling; ETS300 279 EMC; Compliant to Low Voltage Directive																		
Power Supply	Input AC; 115V (+15%, -25%) 230V (+15%, -25%) Input DC; 13.6V Nominal (10.8-15.6V) 27.2V Nominal (21.6–31.2V) External Standby Battery; Typically 12V 24Ah																		
Frequency Stability	VHF 2ppm or 5ppm.; UHF 2ppm																		
Signalling Option	Channel Dependant CTCSS																		
Dimensions	Standard Lid; 88mm(H) X 444mm(W) X 374mm(D) Raised Lid; 134mm(H) X 444mm(W) X 374mm(D)																		
Weight	13kg																		



RECEIVER

Input Impedance	50Ω Nominal
Sensitivity	0.35μVpd for 12dB SINAD; 0.50μVpd for 20dB Quieting
Adjacent Channel Selectivity	>65dB (12.5kHz), >70dB (25kHz) CEPT
Intermodulation Attenuation	76dB CEPT TR24
Spurious Response	>80dB VHF; >85dB UHF
Audio Response	+1dB To -3dB of a 6dB per octave de-emphasis characteristic from 300Hz To 3kHz (2.5kHz for 12.5kHz channel spacing)
Hum And Noise	40dB (Psophometrically Weighted)
Squelch Range	12, 15, 18, 21 and 24dB SINAD, (Factory set to 12dB)
Distortion - 600Ω Output	<5% at 1kHz 60% Deviation
Squelch Rise Time	50ms (for <5ms, visit our website – see below)
Line Output Level	4-Wire, -22dBm to +4dBm; 2-Wire, -16dBm to 0dBm

TRANSMITTER

Output Impedance	50Ω Nominal																								
Power Output	VHF 1-25w, 55° C Continuous UHF 1-15w, 55° C Continuous 1-25w, 55° C Continuous with fan tray																								
Deviation	±2.5kHz For 12.5kHz Channel Spacing ±4.0kHz For 20kHz Channel Spacing ±5.0kHz For 25kHz Channel Spacing																								
Line Input Level	4-Wire, -37dBm to 0dBm; 2-Wire, -16dBm To 0dBm																								
Modulation Distortion	<5% at 1kHz with 60% Deviation																								
Modulation Response	+1dB to -3dB of a 6dB per octave de-emphasis characteristic from 300Hz to 3kHz (2.5kHz for 12.5kHz Channel Spacing)																								
Fm Noise	>40dB																								
Reverse Intermodulation	10dB without isolator; 40dB with isolator																								
Conducted Spurious Emissions	<0.25μW to 1gHz; <1μW to 2gHz																								
Transmitter Rise Time	50ms (for <5ms, visit our website – see below)																								
Duplexer Internally Fitted	<table border="1"> <thead> <tr> <th>Band (MHz)</th> <th>Separation (MHz)</th> <th>Bandwidth (MHz)</th> </tr> </thead> <tbody> <tr> <td>68-88</td> <td>11.5-15</td> <td>0.1</td> </tr> <tr> <td>68-88</td> <td>8-11.5</td> <td>0.1</td> </tr> <tr> <td>68-88</td> <td>4-6</td> <td>0.1</td> </tr> <tr> <td>148-174</td> <td>4-11</td> <td>0.15</td> </tr> <tr> <td>400-425</td> <td>4.5-20</td> <td>0.5</td> </tr> <tr> <td>425-450</td> <td>4.5-20</td> <td>0.5</td> </tr> <tr> <td>450-470</td> <td>4.5-20</td> <td>0.5</td> </tr> </tbody> </table>	Band (MHz)	Separation (MHz)	Bandwidth (MHz)	68-88	11.5-15	0.1	68-88	8-11.5	0.1	68-88	4-6	0.1	148-174	4-11	0.15	400-425	4.5-20	0.5	425-450	4.5-20	0.5	450-470	4.5-20	0.5
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400-425	4.5-20	0.5																							
425-450	4.5-20	0.5																							
450-470	4.5-20	0.5																							

STANDARD OPTIONS AND ANCILLARIES

- Sealed lead acid battery, 12V/24AH (other battery capacities may be used)
- PDP, Portable Data Programmer
- Isolator, duplexer or single antenna
- Isolator retrofit kit
- Engineer's handset and lead
- Rack (slide out) or wall mounting
- Test Box, interface and leads
- Wall mounting fan tray
- Radio despatcher controller repeater in accordance with (UK) Radio Agency (RFW) licence requirements (CTCSS + DTMF)
- Receiver calltone 2970Hz

Note: Typical figures based on normal operating conditions. Not all combinations of frequency bands and options are available for every market area.

For additional information on this or any other Simoco product, visit our web site at: www.simocoradio.com

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