

A.W. Communication Systems Ltd.

Product Brief DRC-1s

- Motorola Signalling
- Simoco Signalling
- Modem Access
- Speech/data priority setting
- M80 Emulation
- Internal/external microphone
- Internal/external loudspeaker
- Easy to configure
- Rugged metal case
- Separate brick PSU
- Low cost



The DRC-1s has been specifically designed with ease of configuration and, ease of use in mind. The unit employs our own DSP software code providing signal generation and detection, and is housed in a rugged 1mm steel case which is powder coat finished.

The unit offers full control for land-line based remote radio sets via 600 ohm balanced lines. The configurable features include the generation of either Motorola tone remote signalling or Simoco (2970Hz) key tone, M80 emulation, both local and remote, plus many other configurable features.

The unit is eminently suitable for providing dual manual and computer access to, and control of the radio base station over land-line, with configurable signalling format and configurable priority given to either speech dominant or data dominant systems.

The interface connectors are found in a single row to the bottom rear of the case, thus permitting neat wiring to the unit. The front panel has tactile pushbuttons for PTT and TT on/off, plus LED's for DC power, channel busy, TX, and TT state.

The signalling options are selected on a switch field found on the main PCB card, details of which are given below.

The external connectors:

Line Socket	RJ45	for the connection of four-wire land line
Microphone Socket	RJ6	To connect an external microphone if required
Auxiliary Socket	DB9F	For external modem connection
External PTT	2Pin	For connection of a foot switch PTT
External Speaker	3.5mm Socket	for connecting an external speaker if required
Power Connector		for 12v DC power input

Line Interface Connector RJ45

Pin No	Signal	Notes
1	Line input 0	600Ω balanced
2	Line input 1	600Ω balanced
3	Line output 0	600Ω balanced
4		
5		
6	Line output 1	600Ω balanced
7	PTT output	Active low
8	Ground	

Desk Microphone Connector RJ11

Pin No	Signal	Notes
1	Earpiece output	150Ω
2	Ground	
3	Microphone input	Electret biased 10kΩ
4	PTT	Active low
5	External microphone select	Active low
6	Auxiliary +12v DC	Limited to 500mA

Auxiliary Connector DB9F

Pin No	Signal	Notes
1	Auxiliary +12v DC	Limited to 500mA
2	Audio output 0	600Ω balanced
3	Audio input 0	600Ω balanced
4	Auxiliary PTT	Active low
5	Operators busy signal	Active low
6	Loudspeaker Mute	Active low
7	Audio output 1	600Ω balanced
8	Audio input 1	600Ω balanced
9	Ground	

Special note: The auxiliary power supply is fed by an auto-reset fuse. The output from the supply when all of the auxiliary outputs are summed should not exceed 500mA.

The signalling interface which the DRC-1s presents to the outside world is programmable, and set by the internal switch bank (dip switches). The switch bank is constantly read and changes made should be implemented within 200mS.

Switch Bank Settings

SW1

S3	S2	S1	
Off	Off	Off	DRC-1 hardwire PTT
Off	Off	On	DRC-1 2970 Hz PTT
Off	On	Off	M80 Remote emulation
Off	On	On	M80 Local emulation
On	Off	Off	Motorola 2100Hz PTT
On	Off	On	Motorola 2175Hz PTT
On	On	Off	Motorola 2325Hz PTT
On	On	On	As previous (2325Hz)

SW1 continued

Switch	On	Off
S4	1950 Hz channel tone	1850Hz channel tone
S5	Line fail TT On	Line fail TT off
S6	Vox hold time 4 seconds	Vox hold time 2 seconds
S7	LS mute on external microphone select	
S8	Remote TT	Local TT

SW2 (Switch bank 2)

S3	S2	S1	Function
Off	Off	Off	FAC button inoperative
Off	Off	On	FAC button control Talk through
Off	On	Off	FAC button controls squelch defeat
Off	On	On	FAC button controls loudspeaker on / off
On	Off	Off	FAC button selects channel 1/2

S8

Off	Microphone PTT has priority
On	Auxiliary PTT has priority

The unit is fully compatible with our TC-1 remote tone receiver should a non Motorola / Simoco base station be in use, or chosen for a new project.

Further details of the TC-1 together with all of our products can be found on our customer support web site www.toneremote.com

Talk Through Path

The unit is capable of providing talk through in one of two ways. Configuration switch SW1(8) will set either local or remote talk through. In remote talk through, operation of the talk through switch will cause a signal to be transmitted to the base station, which will then engage talk through at the base station, LED is now on. Second operation of the switch will cancel talk through by sending an appropriate signal to the base station. TT LED is now off.

If local talk through is selected, then operation of the talk through switch creates a talk through path within the unit by connecting the input line to the output line, and triggering PTT from the receive vox. The vox hang time prevents syllable loss during speech pauses. No control signals are sent to the base station in this mode of TT generation. The TT LED indicates that TT is on.

Level Setting

The level to line is adjustable by use of the internal potentiometers. The adjustment range is +2dBm to -20dBm. Ex factory the line levels are set to the default standard of -10dBm. Adjustment of the line levels should not be attempted without reference to the manufacturers data sheet.

Auxiliary Connector Notes.

Pin 5 is used to signal to the data computer that the operator has the PTT engaged, i.e. the system is in use. Depending upon the data priority, which has been configured, the computer may or may not seize the radio system to use.

Pin 6. Taking this line low (as part of the computer interface) will cause the loudspeaker to be muted whilst the computer is transmitting data.

In the interests of continued development, A.W. Communications reserve the right to change this specification without notice.

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