

3.2 T800-22-0000 PCB Information

This section contains the following information on the T800-22-0000 backplane PCB.

Note: The backplane PCB is available separately under the product code T800-50-0000.

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T800-22-0000 Parts List (IPN 220-01409-01 And IPN 220-01409-03)

How To Use This Parts List

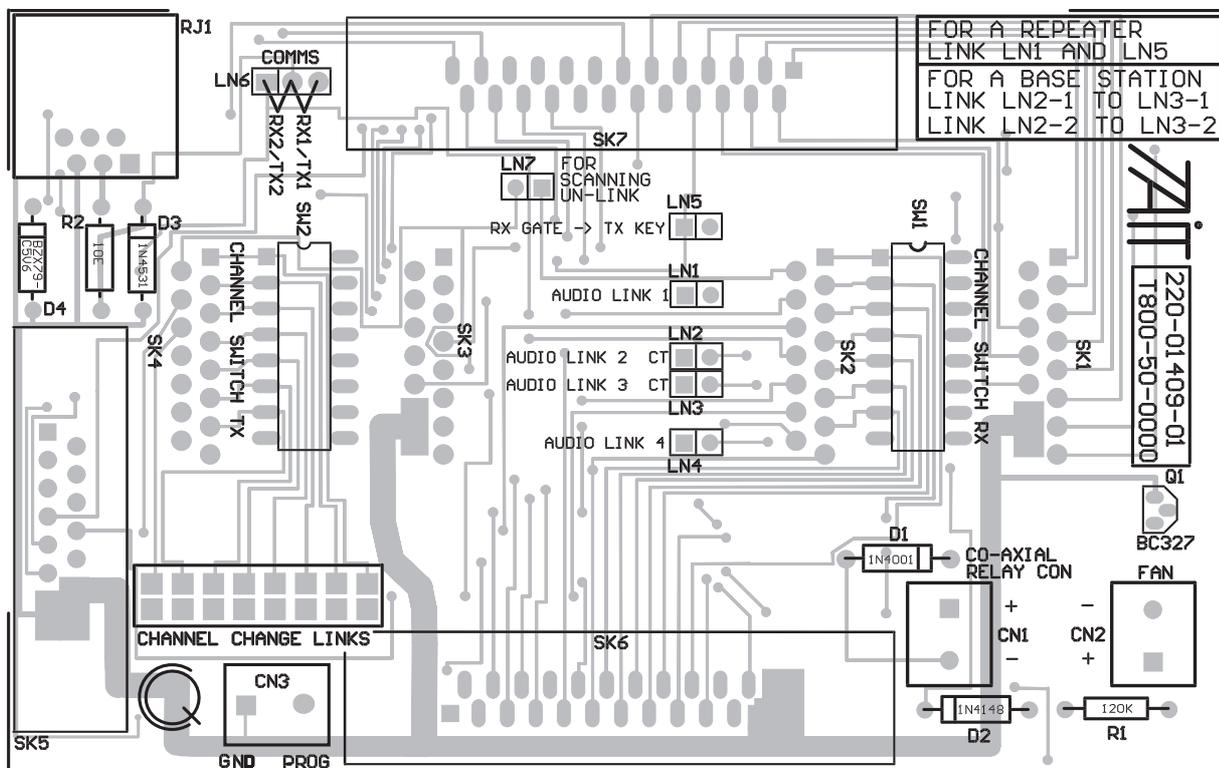
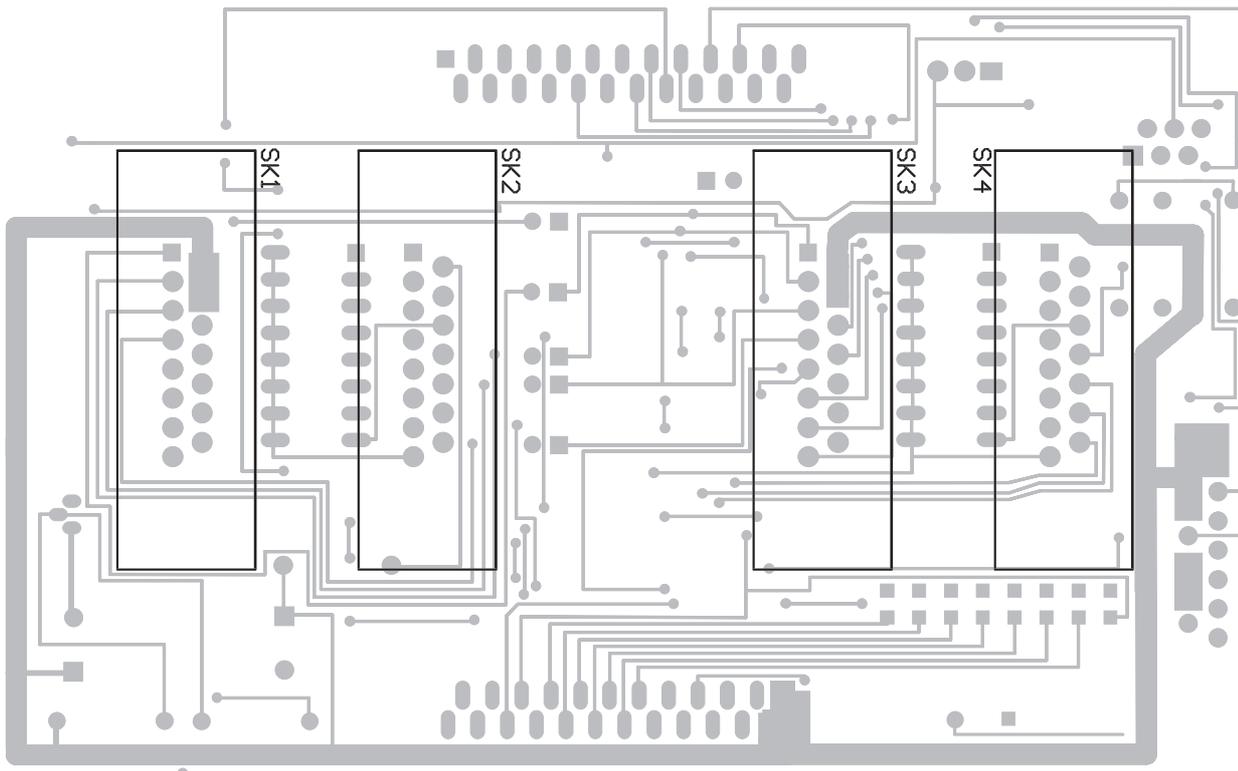
The components listed in this parts list are divided into two main types: those with a circuit reference (e.g. C2, D1, R121, etc.) and those without (miscellaneous and mechanical).

Those with a circuit reference are grouped in alphabetical order and then in numerical order within each group. Each component entry comprises three or four columns: the circuit reference, variant (if applicable), IPN and description. A number in the variant column indicates that this is a variant component which is fitted only to the product type listed.

The miscellaneous and mechanical section lists the variant and common parts in IPN order.

Parts List Amendments

Ref	Var	IPN	Description	IPN	Legend	Description
CN1		240-04030-09	TERMINAL BLK PCB MTG 2W 5MM LS	220-01409-01		PCB BACKPLANE T800-22-000
CN2		240-04030-09	TERMINAL BLK PCB MTG 2W 5MM LS			
CN3		240-04030-09	TERMINAL BLK PCB MTG 2W 5MM LS	220-01409-03		PCB BACKPLANE T800-22-0000
D1		001-00011-70	S) DIODE 1N4001 1A/50V			
D2		001-50012-00	S) DIODE AI 1N4148 SI			
D3		001-50012-05	S) DIODE AI 1N4531 SI S-SIG	240-02020-15		SKT 15 DRANGE PCB PLUS PCB HW SK5
D4		001-00015-19	S) DIODE ZEN 5V6 0.4W 2% BZX79			
LN1		240-00020-68	HEADER 2W PCB MTG STD			
LN2		240-00020-68	HEADER 2W PCB MTG STD	240-02020-20		SKT 25 DRANGE PCB PLUS FULL HW SK6/7
LN3		240-00020-68	HEADER 2W PCB MTG STD			
LN4		240-00020-68	HEADER 2W PCB MTG STD			
LN5		240-00020-68	HEADER 2W PCB MTG STD			
LN6		240-00020-59	HEADER 3W 1R PCB MTG STD	240-04020-62		SKT 2 W RECEP SHORTING LINK Links LN1-8
LN7		240-00020-68	HEADER 2W PCB MTG STD			
LN8		240-00020-59	HEADER 3W 1R PCB MTG STD			
Q1		000-00010-60	S) XSTR BC327 PNP AF PWR TO92			
R1		030-56120-20	RES FILM AI 120K 5% 0.4W 4X1.6			
R2		030-02100-00	RES FILM 10E 5% 0.25W 7X2.5			
RJ1		240-04021-60	SKT P/JACK 6-WAY VER 69254-001			
SW1		230-00010-19	SWITCH*8 SPST DIP PKG			
SW2		230-00010-19	SWITCH*8 SPST DIP PKG			



T800-22-0000 PCB (IPN 220-01409-01) - Bottom And Top Sides

T800 Series II Module Inputs And Outputs

Receiver : Standard Inputs And Outputs

The table below shows standard inputs and outputs for the T800 receiver and corresponding inputs and outputs on the backplane PCB (SK7).

Signal	DR1 Pin	BKPL (SK7)	I/P O/P	Function
Line O/P	1-4	1-4	O/P	Audio output from a 600Ω balanced line transformer. Output level adjustable from -50 to +10dBm via a potentiometer on the front panel. Pins 2 & 3 are usually linked for normal operation.
RSSI	5	5	O/P	Receiver Strength Signal Indicator. Provides a DC voltage proportional to the signal strength of the received signal. Values are: VHF 4.5V @ -100dBm; 1V/15dB (-115 to -70dBm) UHF 2V @ -110dBm; 1V/10dB (-115 to -70dBm). For UHF, optional board must be fitted.
Audio 1	6	6	O/P	Audio 1 allows access to audio before it passes through the squelch circuitry. The output will provide frequencies down to 5Hz when the audio processor is linked for flat response. From Audio 1, audio can be passed to external CTCSS and signalling decoders.
Serial Com/ Audio 2	7	7	I/O	Serial programming input for programming the module. Can be configured as Audio 2 by internal link resistors if required. Audio 2 is an input and when used in conjunction with Audio 1 allows the audio path to be broken so that external audio processing can be used.
Speaker	8	19	O/P	Provides up to 1W into a 4Ω speaker.
Supply Voltage	9-10	-	I/P	DC Supply Voltage input. Nominal 13.8V, can operate from 10.8 to 16V DC.
Gate O/P	11	14	O/P	Pulls low when a signal is received. In a repeater, configuration can be used to key the transmitter by directly connecting it to the Tx Key pin.
Receiver Gate Relay	12 13	15 16	O/P	Relay Common Relay Normally Open A normally open relay contact that closes when a signal is received. The relay will only operate when PL270 is linked.
Ground	14-15	-	I/P	Power supply earth, negative ground.

Receiver : Additional Inputs And Outputs

The table below shows additional inputs and outputs for the T800 receiver and corresponding inputs and outputs on the backplane PCB (SK6).

Signal	DR2 Pin	BKPL (SK6)	I/P O/P	Function
Channel Select 0-6	1	22	I/P	External channel select pins (including Channel Select 7 on pin 11). Normally high, these pins are pulled low to select logic 0. To select a channel the binary equivalent must be applied to the pins. when all pins are left floating (i.e. high) then the selected channel is determined by software (PGM800Win). Note: When using external channel selection, pin 11 must be pulled low.
	2	9		
	3	21		
	4	8		
	5	20		
	6	7		
	7	19		
Ground	8	6	I/P	Power supply earth, negative ground.
Rx Disable	9	18	I/P	When pulled low disables receiver audio output. Usually used in a base station application to ensure there is no interference when the transmitter is operating.
CTCSS Disable	10	5	I/P	Disables CTCSS (Continuous Tone Controlled Squelch System).
Channel Select 7	11	23	I/P	Function as for other channel select lines. Must be pulled low when using external channel selection.
Serial Comm	12	24	I/O	Serial programming input for programming the module. Can be used if it is not possible to program the radio from D-range 1.
Aux-Out 0-2	13	15	O/P	Open drain type; capable of sinking 2.25mA via 2k2Ω; V_{ds} max.=5V. Logic state can change when the channel is changed. User definable by using PGM800Win software.
	14	10		
	15	11		

Transmitter/Exciter : Standard Inputs And Outputs

The table below shows standard inputs and outputs for the T800 transmitter/exciter and corresponding inputs and outputs on the backplane PCB (SK7).

Signal	DR1 Pin	BKPL (SK7)	I/P O/P	Function
Line I/P	1-4	22-25	I/P	Audio input to a 600Ω balanced line transformer. For an unbalanced line connect the line I/P 4 to ground. Accepts audio levels as low as -30 dBm. Pins 2 & 3 are usually linked for normal operation.
Tx Enable	5	21	O/P	Pulls low when the transmitter is keyed. Usually connected directly to Tx Key on the PA to activate the PA alarm circuitry.
Audio 2	6	20	I/P	Audio 2 allows audio to be input to the audio processor bypassing the 600Ω line transformer. Ideal place to re-inject audio such as a voice scrambler after external processing.
Serial Com/ Audio 1	7	7	I/O O/P	Serial programming input for programming the module. Can be configured as Audio 1 by internal link resistors if required. Audio 1 allows access to the audio directly after the 600Ω line transformer. When used in conjunction with Audio 2 it allows the audio path to be broken so that external audio processing can be used.
CTCSS	8	18	I/P	An external input for CTCSS or DCS (Digital Coded Squelch).
Supply Voltage	9-10	-	I/P	DC Supply Voltage input. Nominal 13.8V, can operate from 10.8 to 16V DC.
Opto Keys	11 (+) 12 (-)	9 8	I/P	A high isolation keying option. A DC voltage between 6V and 50V applied to these inputs will key the transmitter. The inputs may be used to key the transmitter via a DC remote.
Tx Key	13	17	I/P	A high impedance input which is pulled low to key the transmitter. Must be <0.7V or connected directly to Ground.
Ground	14-15	-	I/P	Power supply earth, negative ground

Transmitter/Exciter : Additional Inputs And Outputs

The table below shows the additional pin inputs and outputs for the T800 transmitter/exciter and corresponding inputs and outputs on the backplane PCB (SK6).

Signal	DR2 Pin	BKPL (SK6)	I/P O/P	Function
Channel Select 0-6	1 2 3 4 5 6 7	22 9 21 8 20 7 19	I/P	External channel select pins (including Channel Select 7 on pin 11). Normally high, these pins are pulled low to select logic 0. To select a channel the binary equivalent must be applied to the pins. When all pins are left floating (i.e. high) then the selected channel is determined by software (PGM800Win). Note: When using external channel selection, pin 11 must be pulled low.
Ground	8	6	I/P	Power supply earth, negative ground.
Tx Relay Drive	9	18	I/P	Used for coaxial relay switching. Pulls to ground when the transmitter is keyed.
CTCSS Disable	10	17	I/P	Disables CTCSS (Continuous Tone Controlled Squelch System).
Channel Select 7	11	23	I/P	Function as for other channel select lines. Must be pulled low when using external channel selection.
Serial Comm	12	24	I/O	Serial programming input for programming the module. Can be used if it is not possible to program the radio from D-range 1.
Aux-Out 0-2	13 14 15	16 4 3	O/P	Open drain type; capable of sinking 2.25mA via 2k2Ω; V _{ds} max.=5V. Logic state can change when the channel is changed. User definable by using PGM800Win software.

Power Amplifier : Standard Inputs And Outputs

The table below shows the additional pin inputs and outputs for the T800 power amplifier.

Signal	DR1 Pin	BKPL (SK7)	I/P O/P	Function
Supply Voltage	1-2	-	I/P	DC Supply Voltage input. Nominal 13.8V, can operate from 10.8V to 16V DC. Connected to pins 9, 10 and 11.
Forward Power Alarm	3	10	O/P	These are normally low and float if forward power drops below, or reverse power rises above, pre-set limits. They have a 500mA sink capability. A signal is only provided when the Tx Key line on the PA is being pulled low.
Reverse Power Alarm	4	11	O/P	
Forward Power Metering	5	12	O/P	Voltage outputs proportional to the levels of forward and reverse power are available at these pins for metering purposes. There is enough output to drive a coil meter.
Reverse Power Metering	6	13	O/P	
Ground	7-8	-	I/P	Power supply earth, negative ground. Connected to pins 13, 14 and 15.
Supply Voltage	9-11	-	I/P	Function as for Pins 1 and 2.
Tx Key	12	21	I/P	Keys the PA when ground is applied. This line is usually taken to the Tx Enable line on the Exciter.
Ground	13-15	-	O/P	Power supply earth, negative earth.