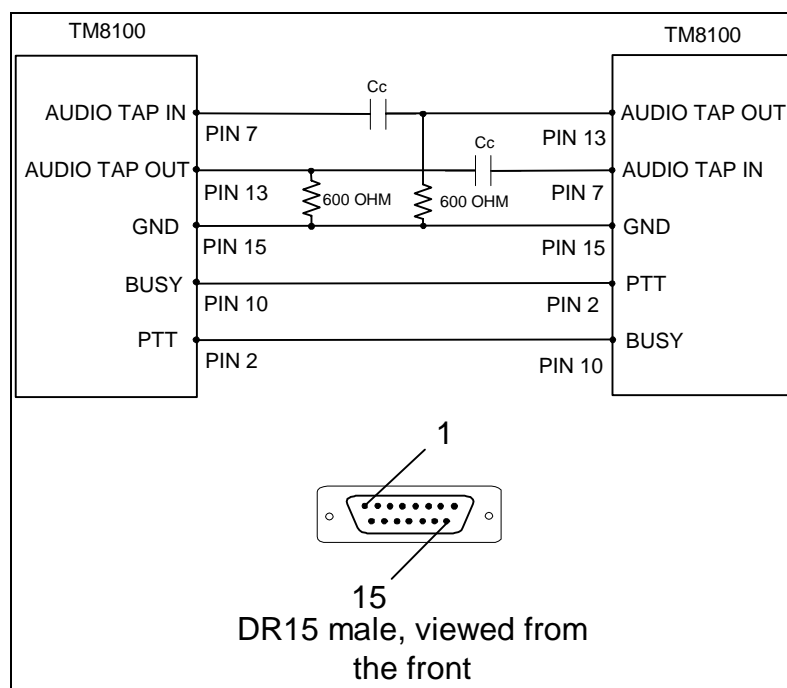


This technical note explains how to configure the TM8100 radio for Audio Linking operation either as Back-to-Back or Cross Band Repeater.

CROSS BAND INTERCONNECT LEAD



For voice applications the value of C_c should be at least 100nF.

For high-speed (baseband) data applications then the recommended value for C_c is 4.7 μ F. The capacitor needs to be non-polarised type.

The simplest way to create a 600-Ohm resistor is by using 2 x 1k2 resistors in parallel.

RADIO PROGRAMMING

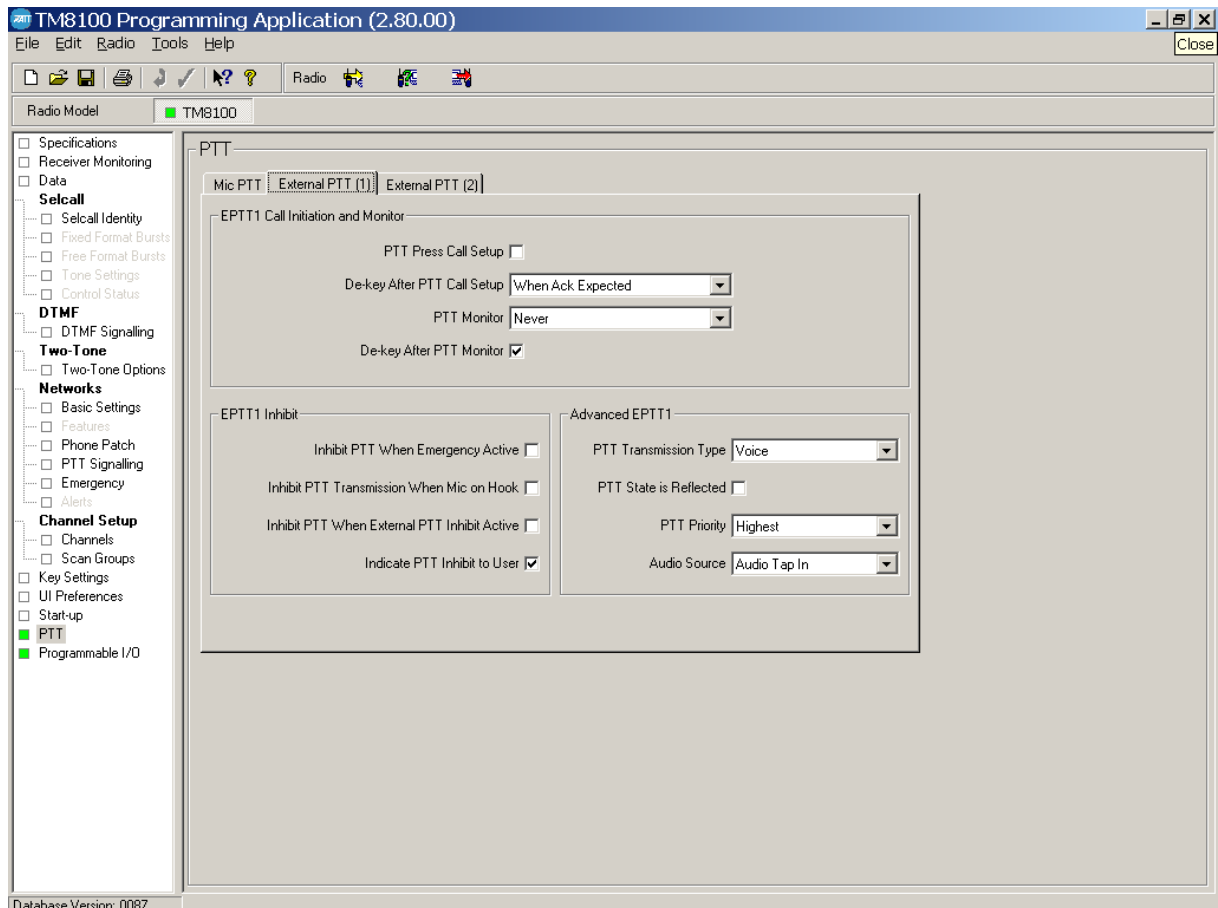
The settings below need to be programmed into both radios to enable cross band operation.

PTT: External PTT 1

PTT Transmission Type = Voice.

PTT Priority = Highest

Audio Source = Audio Tap In.



Programmable I/O = Digital I/O Settings

	AUX_GPI04	AUX_GPI05
Direction	Output	Input
Label	Busy	PTT
Action	Signalling Audio Mute Status	External PTT 1
Active	Active High	Active High
Debounce	None	10
Signal State	None	None
Mirrored To	None	None

TM8100 Programming Application (2.80.00)

File Edit Radio Tools Help

Radio Model: TM8100

Specifications
 Receiver Monitoring
 Data
Selcall
 Selcall Identity
 Fixed Format Bursts
 Free Format Bursts
 Tone Settings
 Control Status
DTMF
 DTMF Signalling
Two-Tone
 Two-Tone Options
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 UI Preferences
 Start-up
 PTT
 Programmable I/O

Programmable I/O

Digital | Audio | BCD

Pin	Direction	Label	Action	Active	Debounce	Signal State	Mirrored
AUX_GPI1	None	PIN_12	No Action	None	None	None	None
AUX_GPI2	None	PIN_5	No Action	None	None	None	None
AUX_GPI3	None	PIN_4	No Action	None	None	None	None
AUX_GPI04	Output	BUSY	Signalling Audio Mute Status	High	None	None	None
AUX_GPI05	Input	PTT	External PTT 1	High	10	None	None
AUX_GPI06	None	PIN_9	No Action	None	None	None	None
AUX_GPI07	None	PIN_1	No Action	None	None	None	None
IOP_GPI01	None	PIN_9	No Action	None	None	None	None
IOP_GPI02	None	PIN_10	No Action	None	None	None	None
IOP_GPI03	None	PIN_11	No Action	None	None	None	None
IOP_GPI04	None	PIN_12	No Action	None	None	None	None
IOP_GPI05	None	PIN_13	No Action	None	None	None	None
IOP_GPI06	None	PIN_14	No Action	None	None	None	None
IOP_GPI07	None	PIN_15	No Action	None	None	None	None
CH_GPI01	None	C_HEAD	No Action	None	None	None	None

Action Parameters:

Emergency Mode: Stealth | Unmute Audio Output: Speaker Audio Path

Mute Audio Input: Audio Tap In | Home Channel: 1

Mute Audio Output: Speaker Audio Path | Preset Channel: 1

Database Version: 0087

Audio I/O Settings

Rx/PTT Type	RX	EPTT1
Tap Out	R2	None
Tap Out Type	D - Split	C - Bypass Out
Tap Out Unmute	Busy Detect + Subaudible	On PTT
Tap in	None	T12
Tap in Type	A - Bypass In	A - Bypass In
Tap in Unmute	On PTT	On PTT

TM8100 Programming Application (2.80.00)

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PTT
Programmable I/O

Programmable I/O

Digital Audio BCD

Rx/PTT Type	Tap In	Tap In Type	Tap In Unmute	Tap Out	Tap Out Type	Tap Out Unmute
Rx	None	A - Bypass In	On PTT	R2	D - Split	Busy Detect + Subaud
Mic PTT	None	A - Bypass In	On PTT	None	C - Bypass O	On PTT
EPTT1	T12	A - Bypass In	On PTT	None	C - Bypass O	On PTT
EPTT2	None	A - Bypass In	On PTT	None	C - Bypass O	On PTT

Database Version: 0087

CROSSBAND OPERATION

1. Inject into the receiving radio an on channel RF signal of – 70dBm with a 1 kHz tone and the deviation set to either 3 kHz Wide Band or 1.5 kHz Narrow Band.
2. Check the transmit deviation on the radio that is transmitting the deviation should be 3 kHz Wide Band (+/- 200Hz) or 1.5 kHz Narrow Band (+/- 200 Hz).
3. If the radio is being used in a cross band application. For example linking a VHF channel to UHF channel then both audio path directions will need to be checked.

If you require any clarification or further information please contact the National Support Centre on 0800 MOBILE (0800 662453).

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