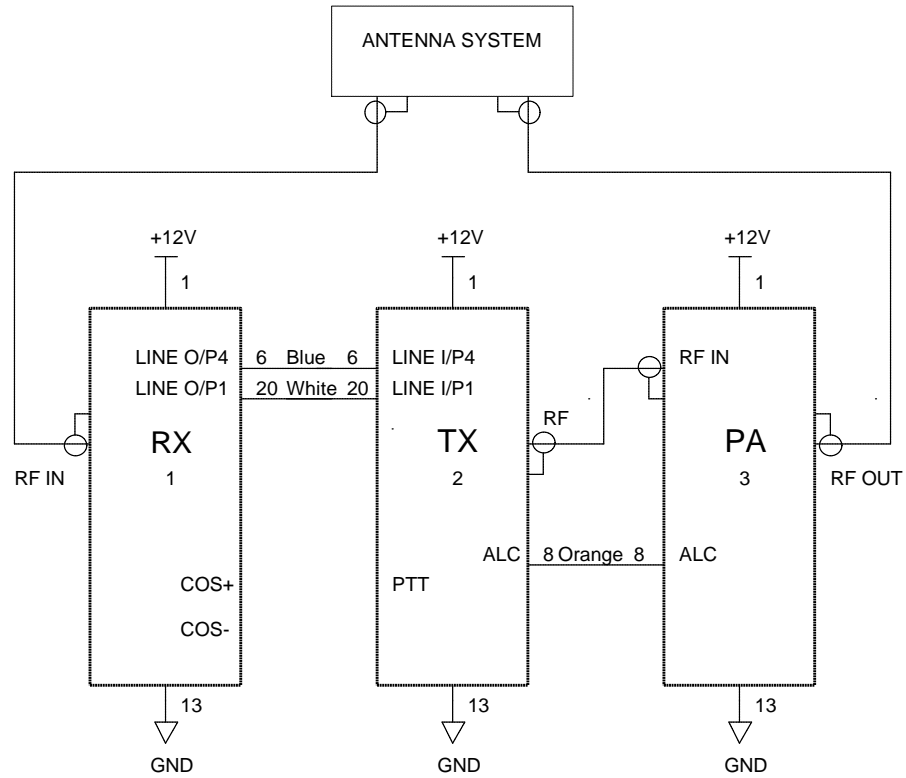


Audio and Control Interconnections

Eclipse - Typical Systems Configuration

- 1 TTR (Talk Through Repeater)
- 2 TTR with CTCSS Tone passed
- 3 Link Controlled Base
- 4 Link Controls Repeater
- 5 Repeater Controls Link
- 5A Repeater Controls Link using ATI connection
- 5AB Repeater & Link using ATI with Audio Bridge control
- 6 Repeater with Link Access
- 7 Repeater with Dual Link Access
- 8 Repeater with Link Access and Heart Beat Timer
- 9 Remote Site with Voting System
- 10 Cross Band Repeater
- 11 Simplex Remote Base with T/R Switch
- 12 Shared Repeater with Third Party Tone Panel
- 13 Shared 1U Repeater with Third Party Tone Panel
- 14 Microwave with 4 wire + E & M



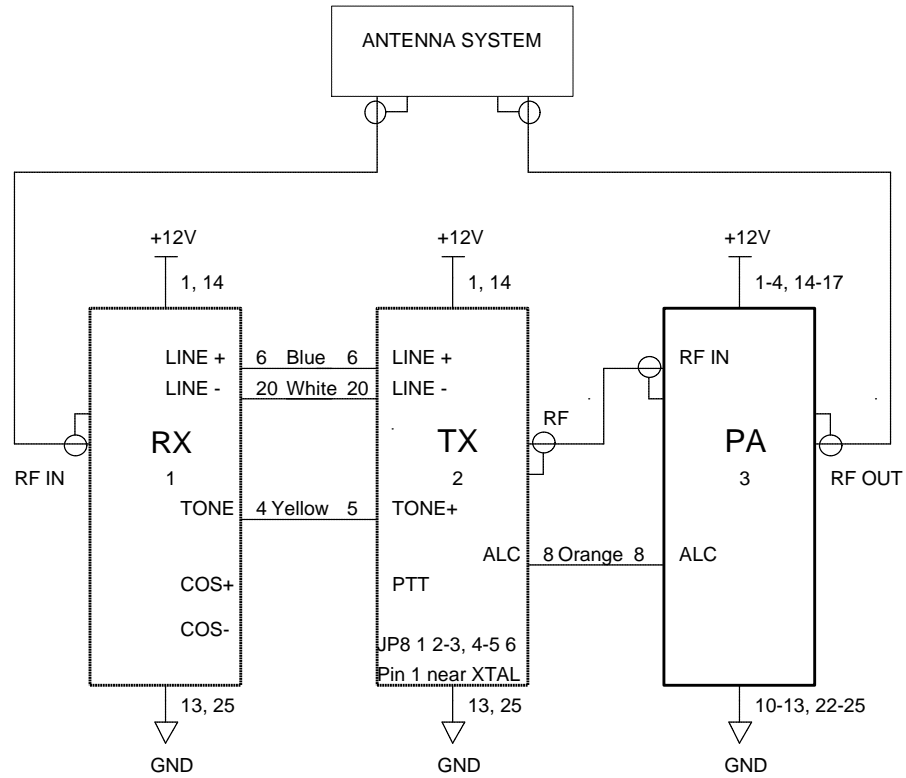
CH0 Default

REPEATER

DC Loop to key up Transmitter

BP2	BP2	RX 1	TX 2	PA 3	SMPS
-----	-----	---------	---------	---------	------

Title Repeater		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN1_TTR_~1.DSN	Document	
Revision 1.0	Date 14 June 2005	Sheets 1 of 1



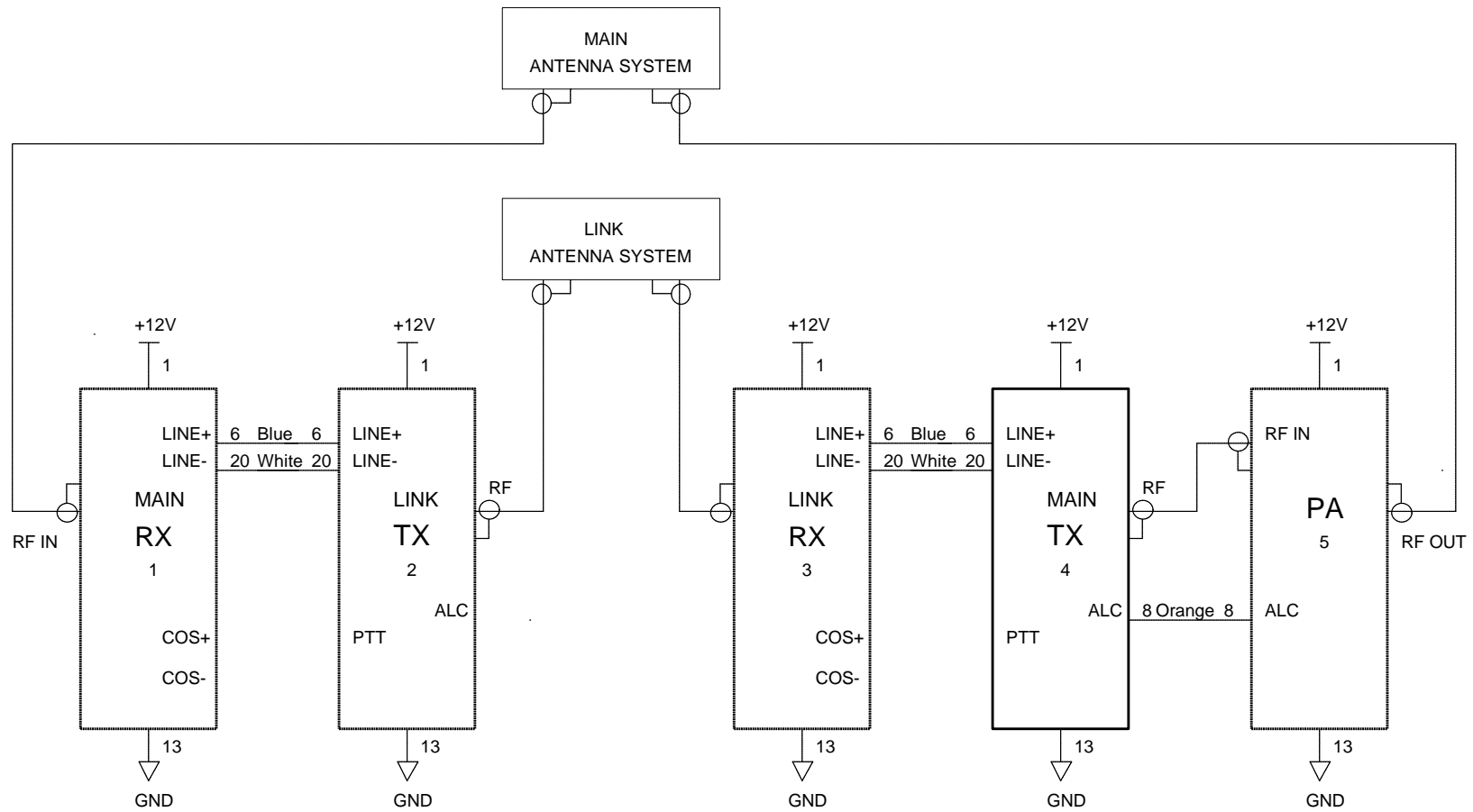
CH0 Default

REPEATER

DC Loop to key up Transmitter
Ext CTCSS & DPL tones etc passed through

BP2	BP2	RX 1	TX 2	PA 3	SMPS
-----	-----	---------	---------	---------	------

Title Repeater passing CTCSS		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN2_TTR_~1.DSN	Document	
Revision 1.0	Date 14 June 2005	Sheets 1 of 1



LINK CONTROLLED BASE STATION

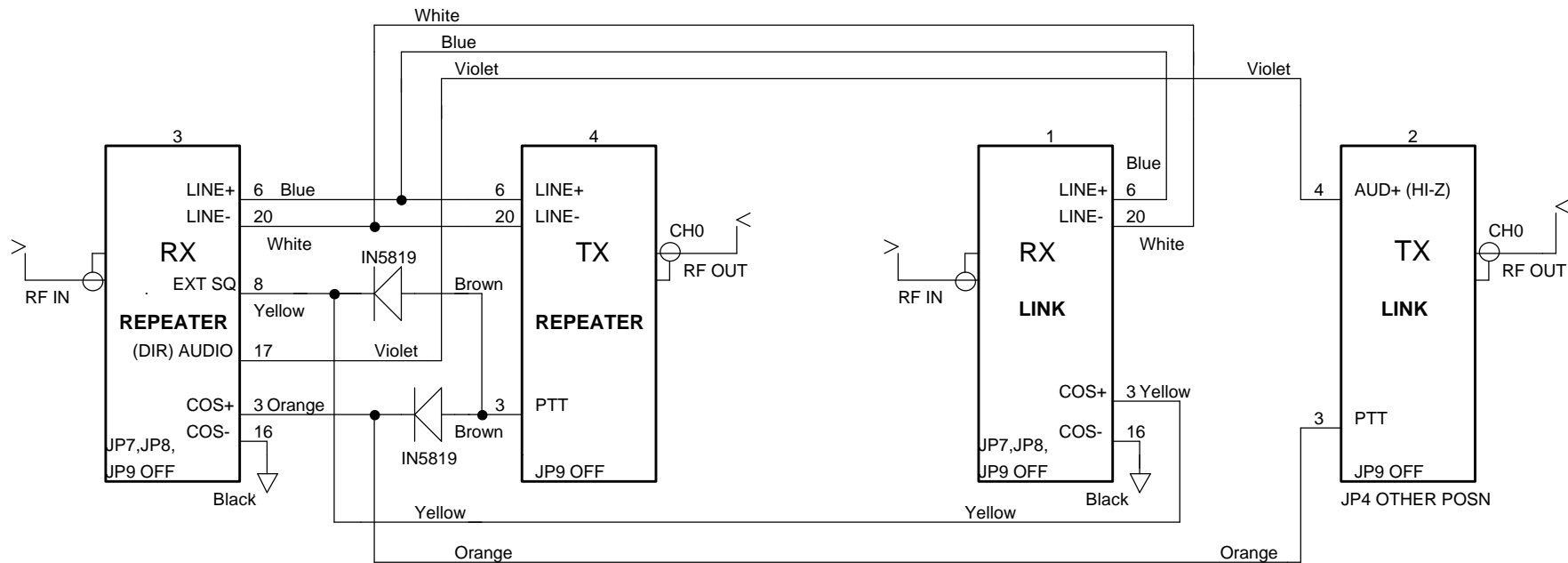
DC Loop to key up Transmitter

CH0 Default

MAIN RX 1	LINK TX 2	LINK RX 3	MAIN TX 4	PA 5	SMPS
-----------------	-----------------	-----------------	-----------------	---------	------

Title Link Controlled Base Station		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\3_LINK~1.DSN	Document	
Revision 1.0	Date 14 June 2005	Sheets 1 of 1

APPLY RF SIGNAL TO REPEATER RX
 ADJUST THE LINE LEVELS ON REPEATER TX AND LINK TX FOR 3.0KHZ DEVIATION
 APPLY RF SIGNAL TO LINK RX - ADJUST LINK RX LINE LEVEL
 SO THAT REPEATER TX DEVIATION IS 3.0KHZ

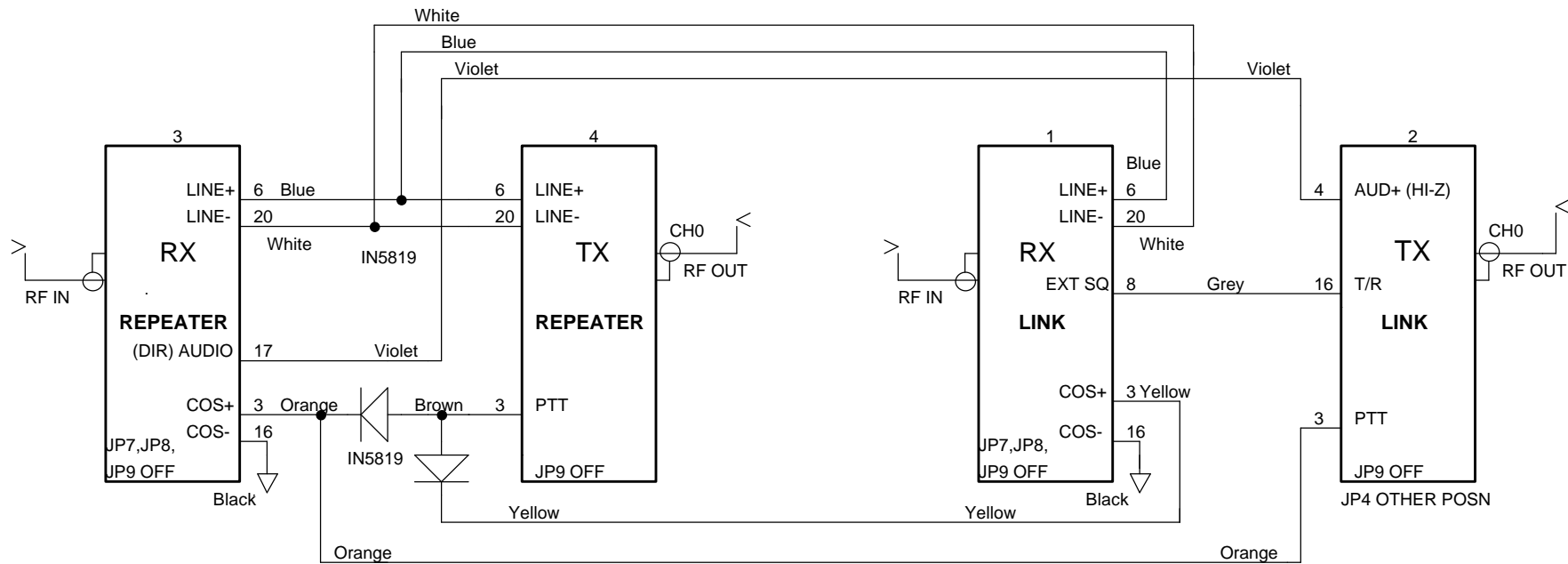


LINK CONTROLS REPEATER

LINK RX keys up REPEATER TX only AND Squelches REPEATER RX
 REPEATER RX keys up REPEATER TX and LINK TX
 THE LINK RECEIVER AUDIO IS NOT ECHOED BACK THROUGH THE LINK TRANSMITTER
 Repeater still operates if Link is disabled

Title Link controls Repeater		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN4_LINK~2.DSN		Document
Revision 1.0	Date 25 November 2005	Sheets 1 of 1

APPLY RF SIGNAL TO REPEATER RX
 ADJUST THE LINE LEVELS ON REPEATER TX AND LINK TX FOR 3.0KHZ DEVIATION
 APPLY RF SIGNAL TO LINK RX - ADJUST LINK RX LINE LEVEL
 SO THAT REPEATER TX DEVIATION IS 3.0KHZ

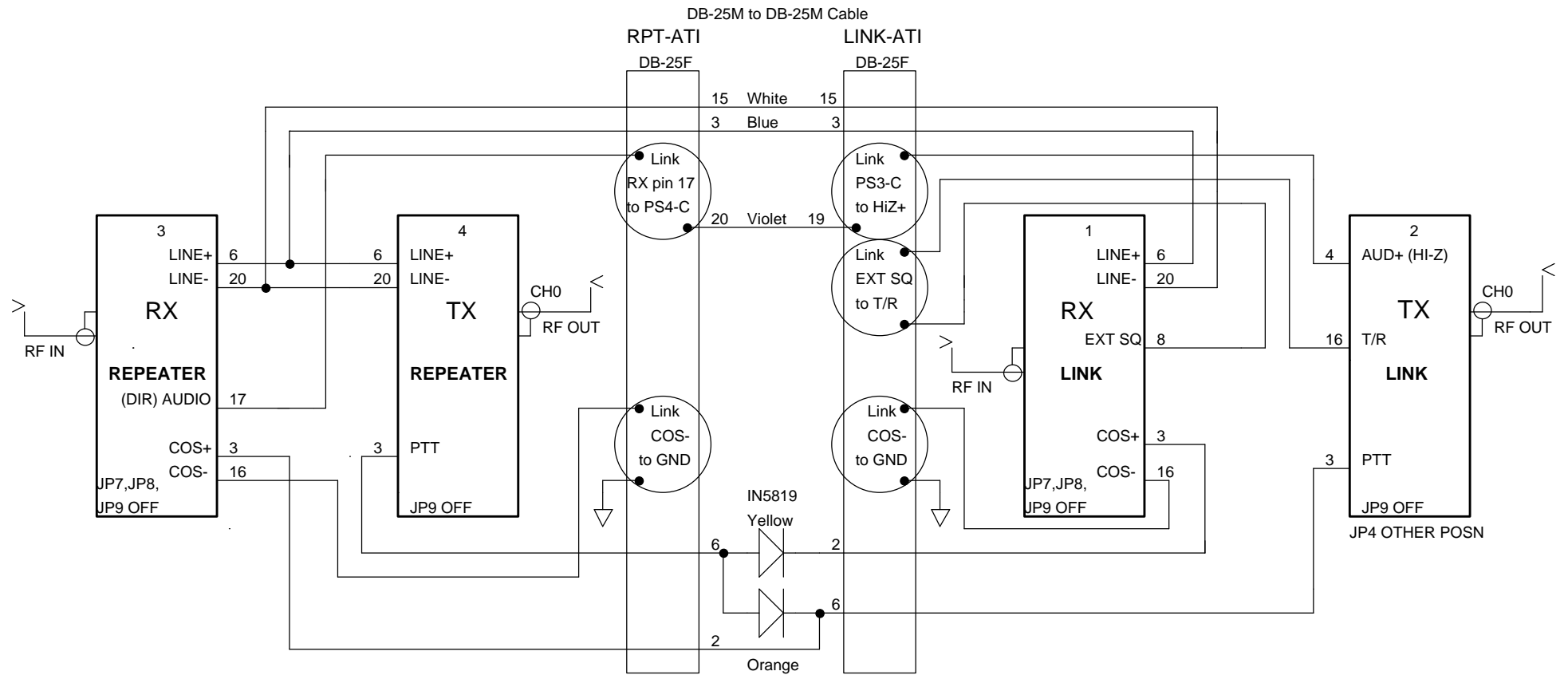


REPEATER CONTROLS LINK

LINK RX keys up REPEATER TX only
 REPEATER RX keys up REPEATER TX and LINK TX and Squelches LINK RX
 THE LINK RECEIVER AUDIO IS NOT ECHOED BACK THROUGH THE LINK TRANSMITTER
 Repeater still operates if Link is disabled

Title Repeater controls Link		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\5_RPT_~3.DSN	Document	
Revision 1.0	Date 25 November 2005	Sheets 1 of 1

APPLY RF SIGNAL TO REPEATER RX
 ADJUST THE LINE LEVELS ON REPEATER TX AND LINK TX FOR 3.0KHZ DEVIATION
 APPLY RF SIGNAL TO LINK RX - ADJUST LINK RX LINE LEVEL
 SO THAT REPEATER TX DEVIATION IS 3.0KHZ



REPEATER CONTROLS LINK (using 2 x ATI)

LINK RX keys up REPEATER TX only

REPEATER RX keys up REPEATER TX and LINK TX and Squelches LINK RX

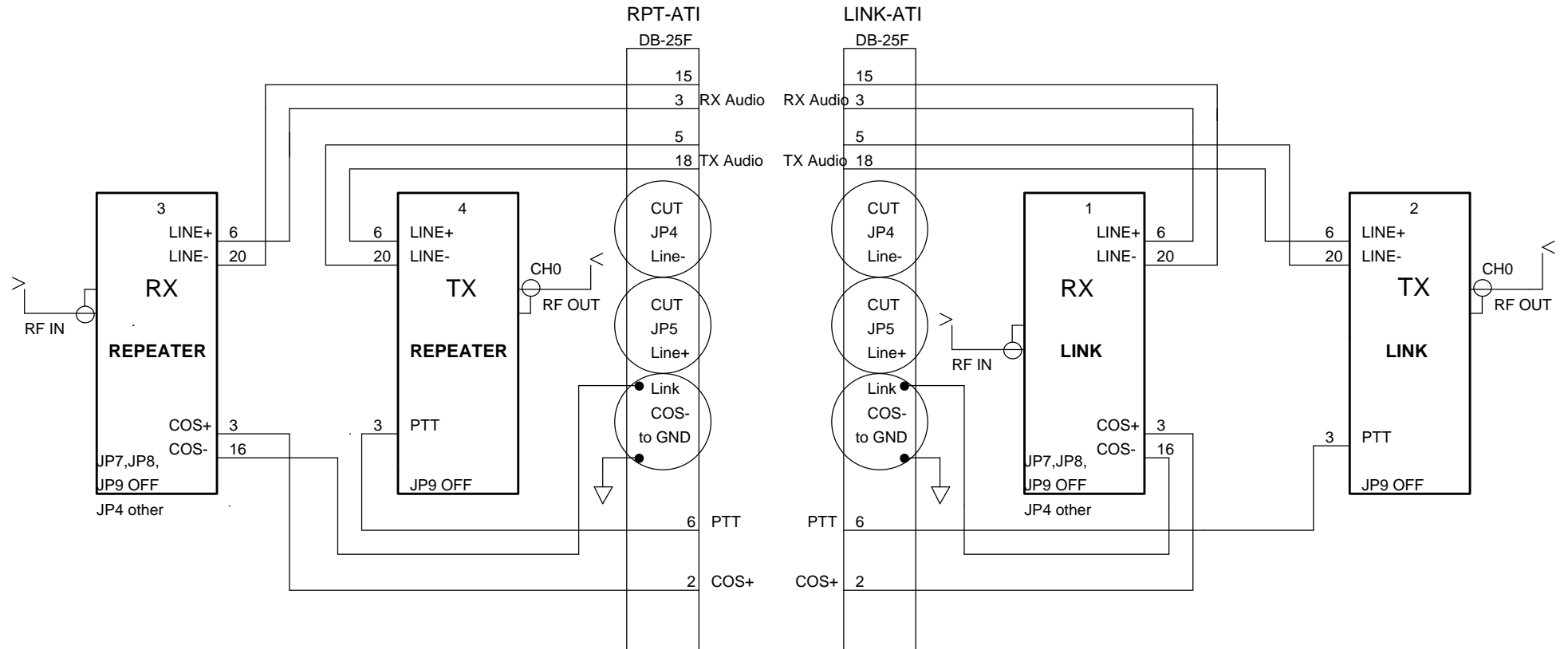
THE LINK RECEIVER AUDIO IS NOT ECHOED BACK THROUGH THE LINK TRANSMITTER

Repeater still operates if Link is disabled

Title Repeater controls Link		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\RPTCLK~1.DSN	Document	
Revision 1.0	Date 28 November 2005	Sheets 1 of 1

Both REPEATER and LINK are installed with ALARM TRUNKING INTERFACE for AUDIO BRIDGE connection
Receiver and Transmitter LINE AUDIO are accessed through the ATI DB-25F connector

CUT JP4 (LINE-) and JP5 (LINE+) links to separate the Receiver and Transmitter Audio signals
Solder Link GND to COS- for Receiver Open Squelch/ COS+ Active LOW operation

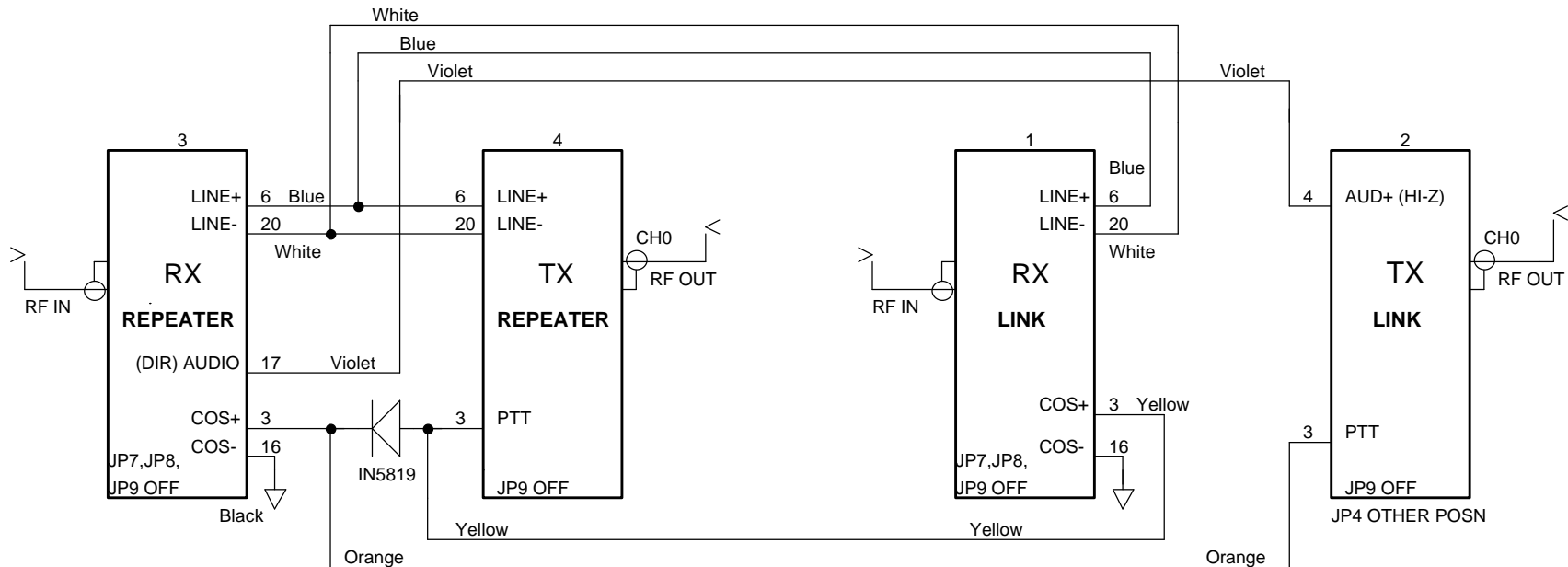


REPEATER and LINK (using 2 x ATI for Audio Bridge Control)

Note changed internal jumper link positions for Receivers and Transmitters

Title Repeater controls Link		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\RPT_LI~1.DSN	Document	
Revision 1.0	Date 06 December 2005	Sheets 1 of 1

APPLY RF SIGNAL TO REPEATER RX
 ADJUST THE LINE LEVELS ON REPEATER TX AND LINK TX FOR 3.0KHZ DEVIATION
 APPLY RF SIGNAL TO LINK RX - ADJUST LINK RX LINE LEVEL
 SO THAT REPEATER TX DEVIATION IS 3.0KHZ



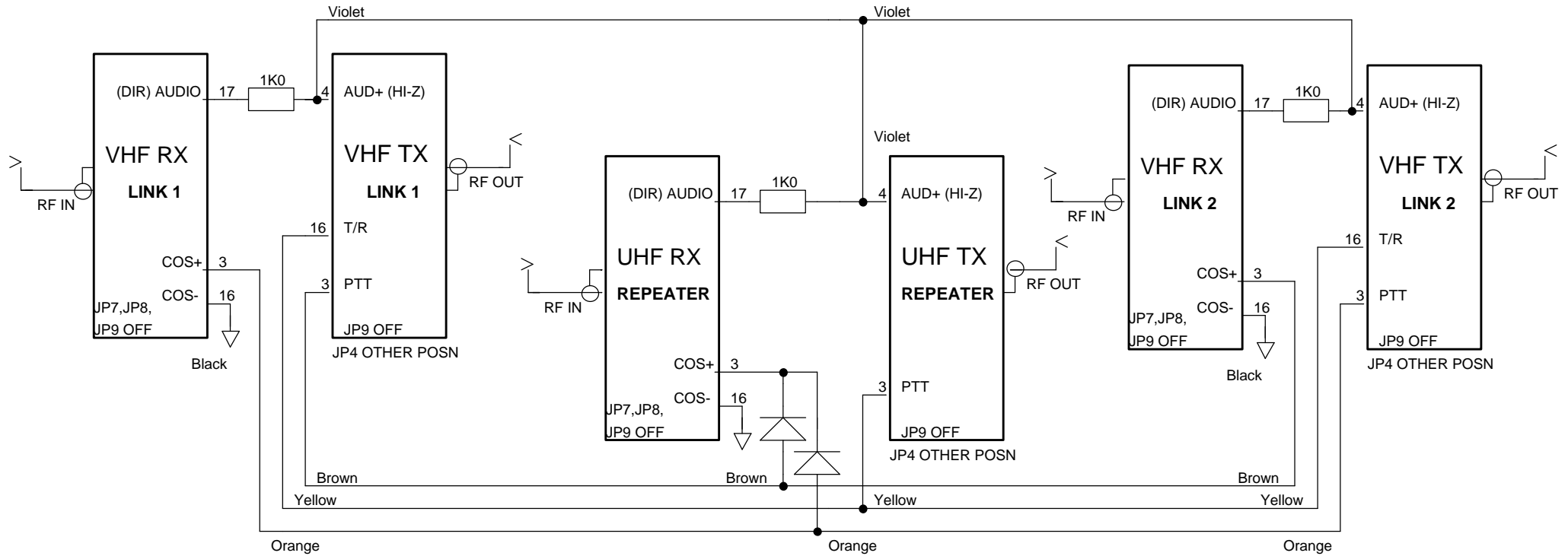
REPEATER WITH LINK ACCESS

LINK RX keys up REPEATER TX only
 REPEATER RX keys up REPEATER TX and LINK TX
 THE LINK RECEIVER AUDIO IS NOT ECHOED BACK THROUGH THE LINK TRANSMITTER
 Repeater still operates if Link is disabled

Title Repeater with Link access		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN6_RPT_~2.DSN		Document
Revision 1.0	Date 25 November 2005	Sheets 1 of 1

THE LINE OUTPUT LEVELS OF REPEATER RX AND LINK RX1 AND LINK RX2
 ARE ADJUSTED TO PRODUCE EQUAL DEVIATION OF REPEATER TX

THE LINE INPUTS OF LINK TX1 AND LINK TX2
 MAY THEN BE ADJUSTED
 TO OBTAIN THE REQUIRED DEVIATION



2 x IN5819 Schottky diodes
 (low forward voltage drop)

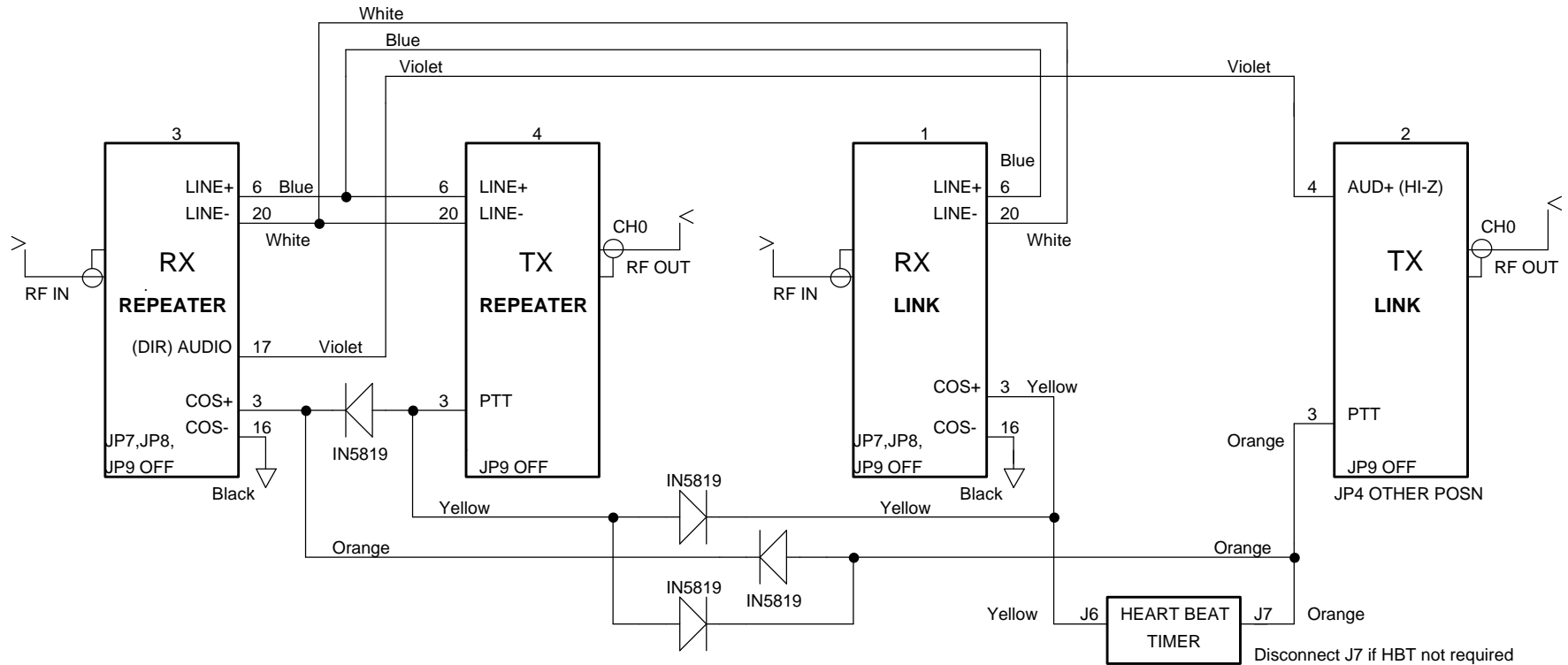
REPEATER WITH 2 LINKS ACCESS

LINK1 RX keys up LINK2 TX and REPEATER TX
 LINK2 RX keys up LINK1 TX and REPEATER TX
 REPEATER RX keys up LINK TX and REPEATER TX

THE LINK RECEIVER AUDIO IS NOT ECHOED BACK THROUGH IT'S LINK TRANSMITTER

Title Repeater with 2 Links access		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN7_RPT_~1.DSN		Document
Revision 1.0	Date 25 November 2005	Sheets 1 of 1

APPLY RF SIGNAL TO REPEATER RX
 ADJUST THE LINE LEVELS ON REPEATER TX AND LINK TX FOR 3.0KHZ DEVIATION
 APPLY RF SIGNAL TO LINK RX - ADJUST LINK RX LINE LEVEL
 SO THAT REPEATER TX DEVIATION IS 3.0KHZ



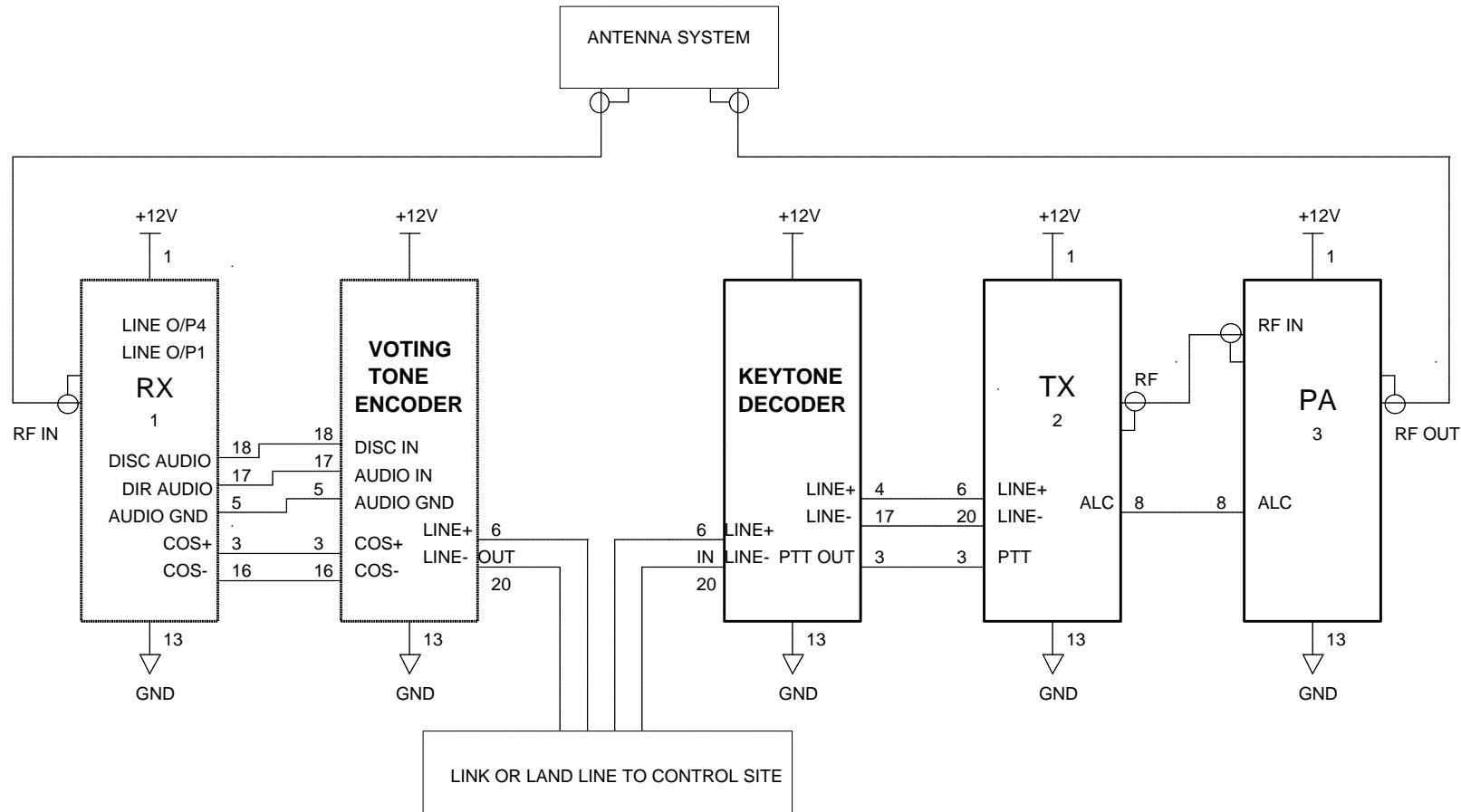
REPEATER WITH LINK ACCESS and HEART BEAT TIMER

LINK RX keys up REPEATER TX only
 REPEATER RX keys up REPEATER TX and LINK TX

The LINK RECEIVER AUDIO is not echoed back through the LINK TRANSMITTER
 The HEART BEAT TIMER is disabled while the LINK RX and REPEATER TX are active
 This is to prevent the LINK TX keying up

Repeater still operates if Link is disabled

Title Repeater - Link access & HBT		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\8_RPT_~1.DSN	Document	
Revision 1.0	Date 25 November 2005	Sheets 1 of 1



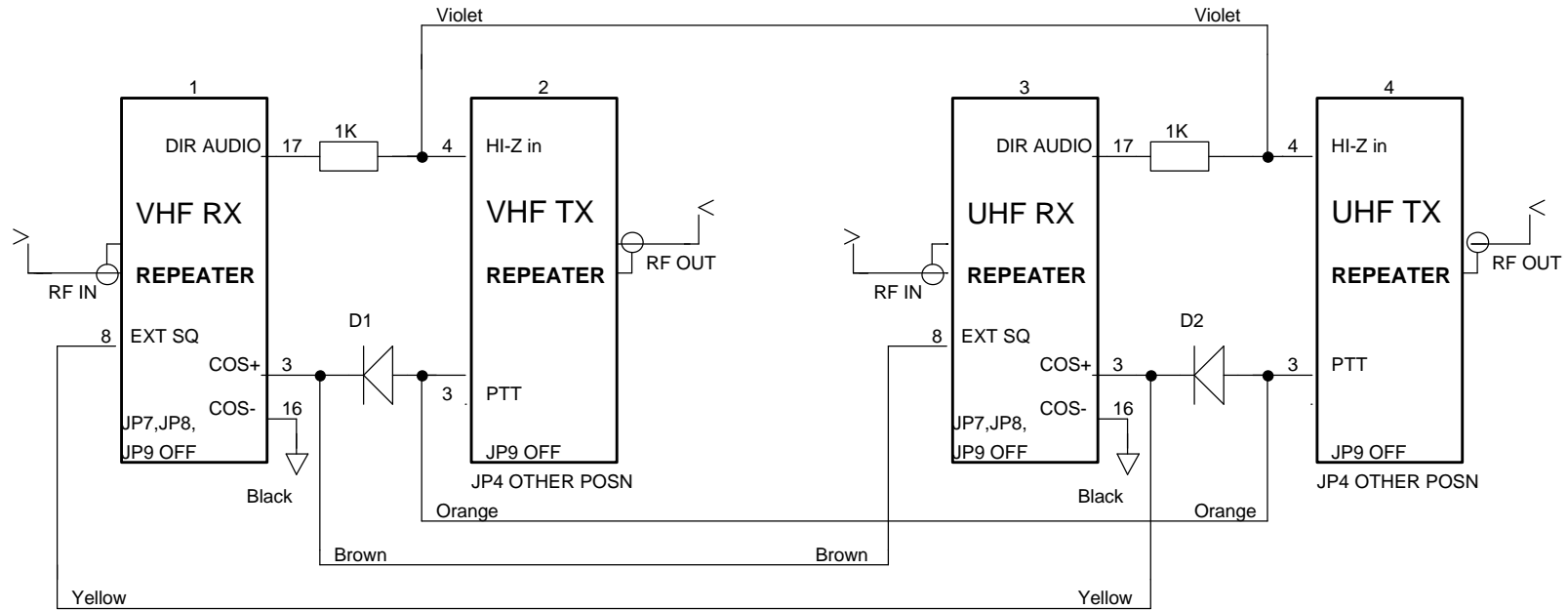
REMOTE SITE WITH SIGNAL STRENGTH VOTING

BP2	RX 1	VTE	KD	TX 2	PA 3	SMPS
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Title Remote site - signal str voting		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\9_REMO~1.DSN	Document	
Revision 1.0	Date 25 November 2005	Sheets 1 of 1

THE LINE LEVELS OF VHF RX AND UHF RX ARE ADJUSTED
TO PRODUCE EQUAL DEVIATION OF VHF TX

THE LINE INPUT OF UHF TX IS THEN ADJUSTED
TO OBTAIN THE REQUIRED DEVIATION



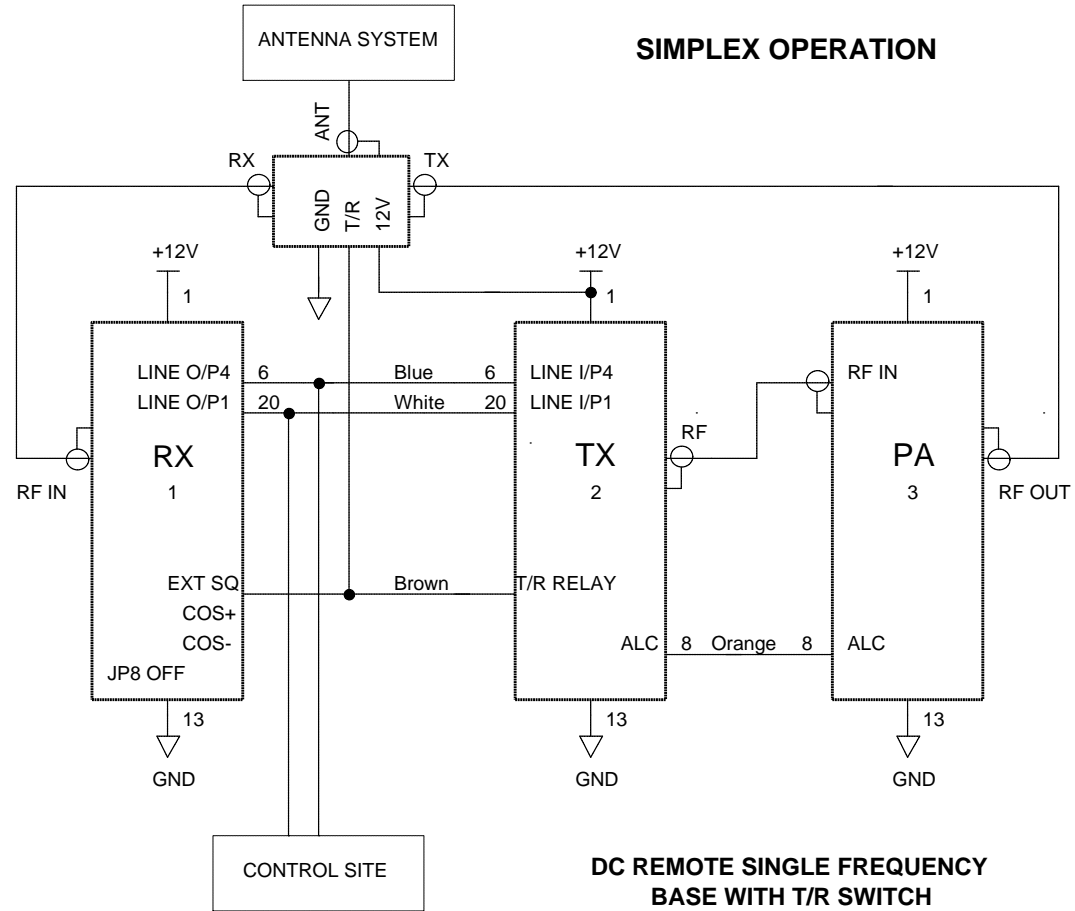
CROSS BAND REPEATERS X 2

VHF RX squelches UHF RX and keys up VHF TX & UHF TX
UHF RX squelches VHF RX and keys up UHF TX & VHF TX

NOTE: Diodes D1 & D2 are IN5819 schottky type (low forward voltage drop)

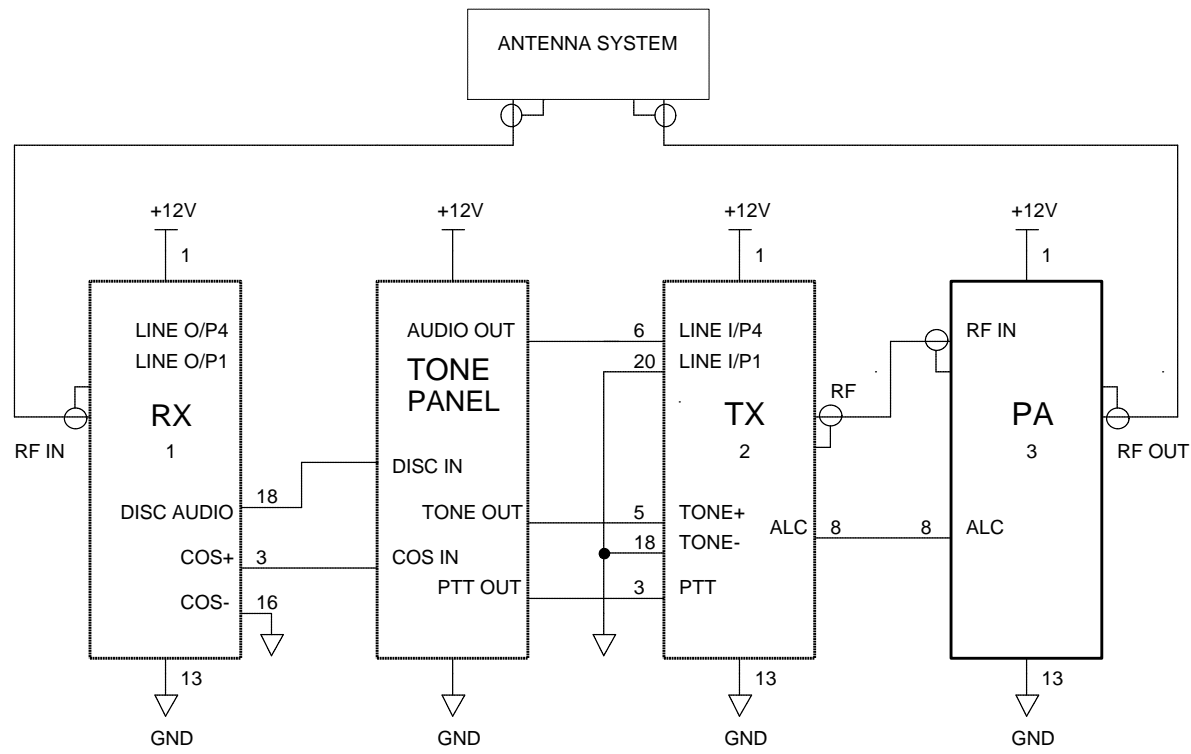
Title X Band repeaters x 2		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\10_XBA~1.DSN		Document
Revision 1.0	Date 25 November 2005	Sheets 1 of 1

SIMPLEX OPERATION



BP2	BP2	RX 1	TX 2	PA 3	SMPS
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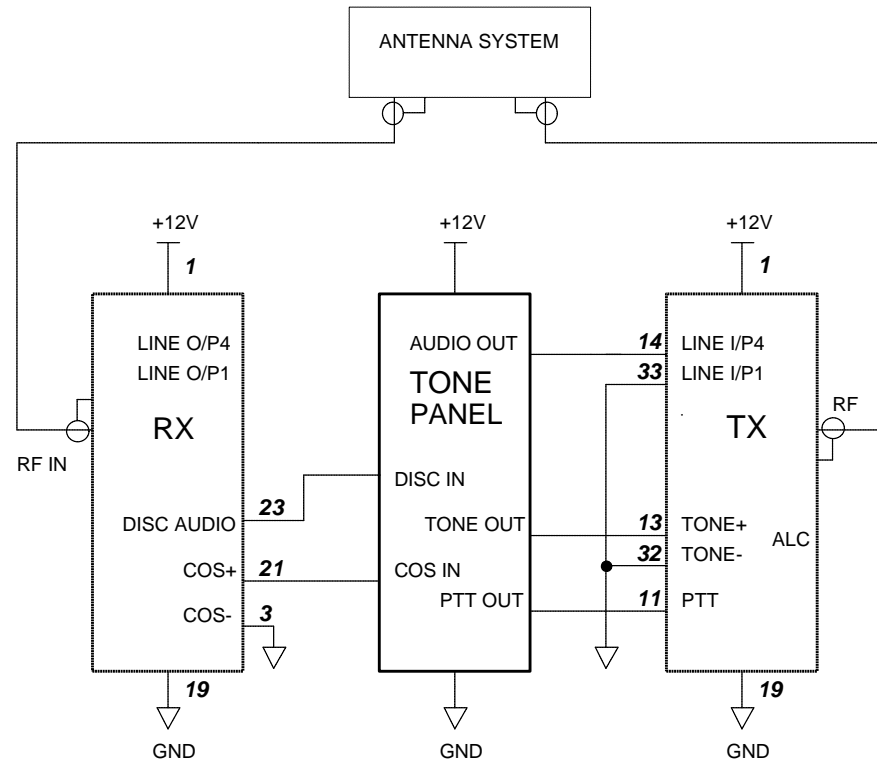
Title Remote Base with T/R switch		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\11_SIM~1.DSN	Document	
Revision 1.0	Date 25 November 2005	Sheets 1 of 1



SHARED REPEATER WITH THIRD PARTY TONE PANEL

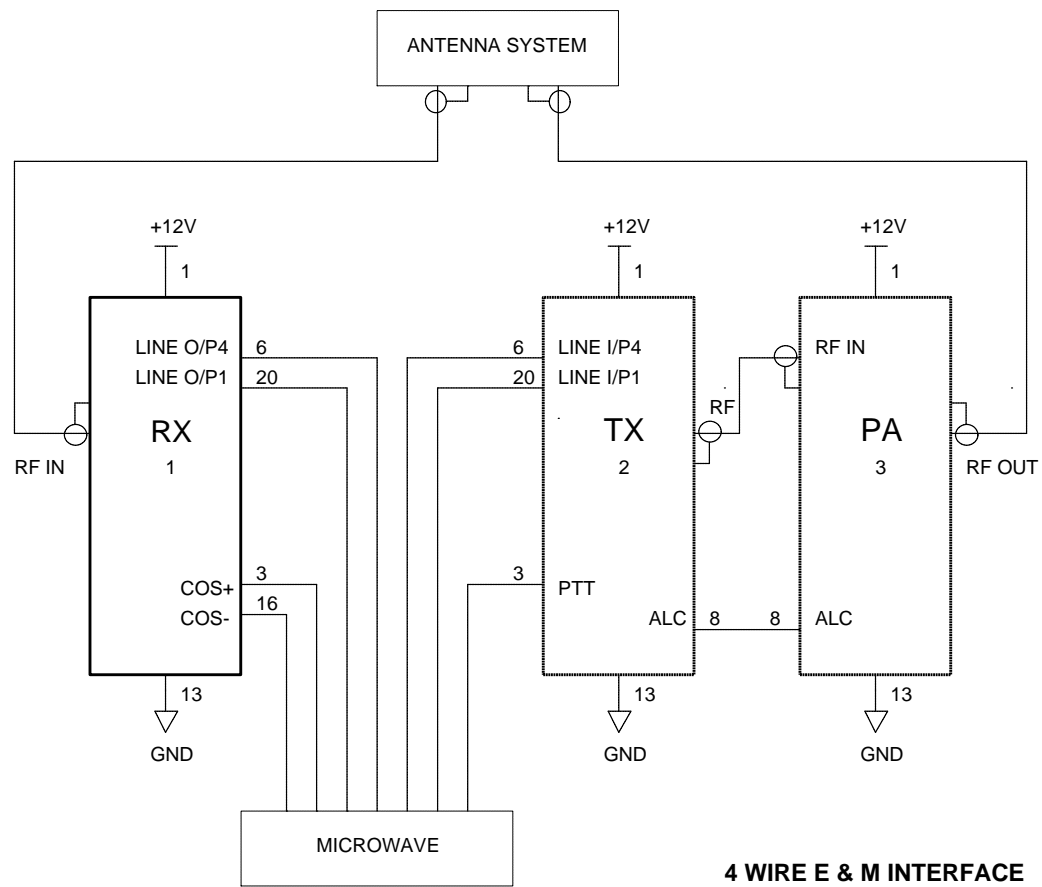
BP2	RX 1	TONE PANEL	TX 2	PA 3	SMPS
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Title Repeater with tone panel		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\12_RPT~1.DSN	Document	
Revision 1.0	Date 25 November 2005	Sheets 1 of 1



SHARED REPEATER WITH THIRD PARTY TONE PANEL
PIN OUTS FOR 1U ADAPTOR

Title Repeater with tone panel - 1U		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\13_RPT~1.DSN	Document	
Revision 1.0	Date 14 June 2005	Sheets 1 of 1



BP2	RX 1	MICROWAVE	TX 2	PA 3	SMPS
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Title 4 Wire E & M Interface		
Author G Lee RFT		
File D:\1MYDOC~1\Cad\REPEAT~1\DSN\14_UWA~1.DSN	Document	
Revision 1.0	Date 25 November 2005	Sheets 1 of 1