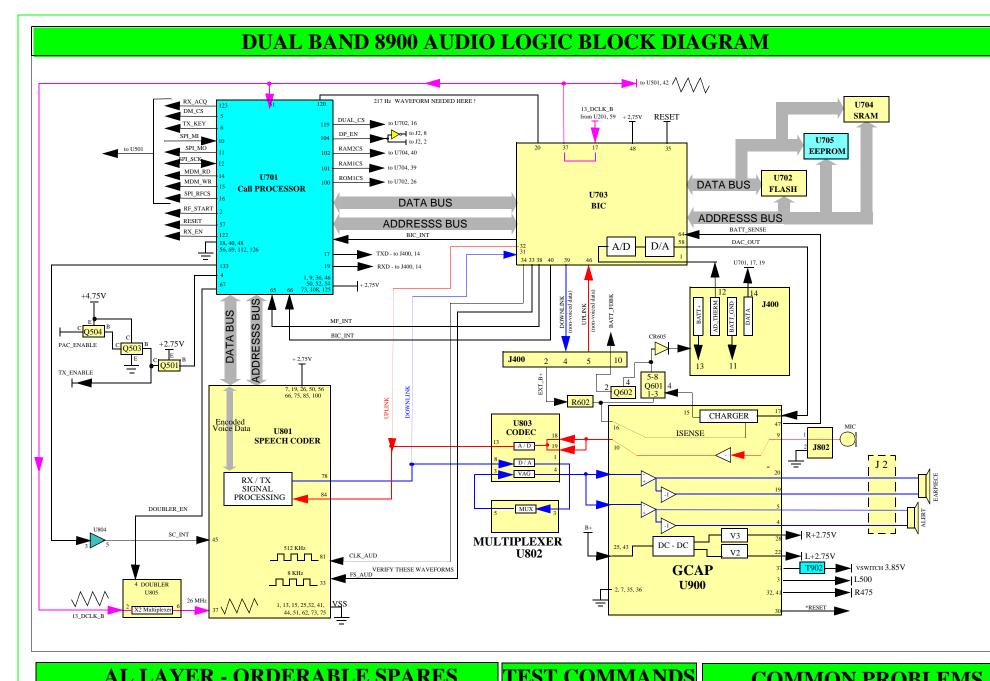
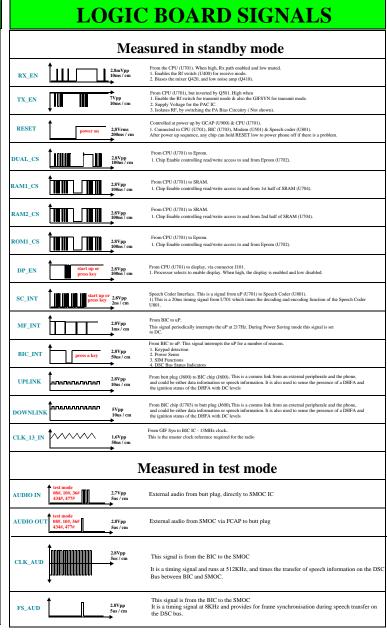


I	RF LAYER	- ORD	ERAB	LE SPARE	ES	TEST	COMMANDS	RE(	CEIV	E DE	BUG -	GSM	[ MO	DE		TRANSMIT DEBUG
Part	Part	Part	Part	Part	Part	# press 2 sec.	Enter Manual Test Mode with Test Card	Before actually removing	g any cans it may b	e worth checking th	ne RX275 a MDM_	ANA_VCC_b_	, RX_EN_C_, -10	ov <u>e</u> ,		into test mode and key in the commands: 110062#, 1200#, 310#
Designator	Description	Number	Designator	Description	Number	01#	Exit Manual Test Mode	GSM_RX275 f and	if the *GSM_DCS	g is high to sw	ritch the output of Q412	Pin6 and Q205 Pin	n4 to high.			ransmiter output we should check the modulation output at U220 Pin 4 and the Main VCO
A1, A2	Antenna Conn.	3909014B03	U520	Modem IC	5199281C03	07 #	Mute Rx Audio Path	TEST MODE: Type in Key	y commands: 11006	2#, 262000#, 25013	#, 241#. Test for a set lev	el eg. (-30dB's) at p	oint <u>h</u> to compe	ensate cable losses.		to establish which of the signals are missing or if both the signals are missing.
CR202	Main VCO Varactor	4809641F02	VR352	TX VCO Varactor	4809877C07	08 #	Unmute Rx Audio Path	The only real short-cut we	can take is by probi	ng the 215MHz test	point(pin 31of	GIF).				tion output is missing and Main VCO is fine then remove SH05 and check in the TX Local Oscillator I the tuning voltage from U220 Pin10. Check if Q222 and Q221 have both 2.7V.
CR203	Main VCO Pin Diode	4809948D05	VR353	TX VCO Varactor	4809877C06	09 #	Mute Tx Audio Path	- If the 215 is OK then we							If still no probl	lems found, measure from CPU DM_CS at Modem Pin9. If ok replace U220.
CR220	RX Local Osc. Varactor	4809641F02	SH1	Shield Low Noise Ampl.	2609315M01	10#	Unmute Tx Audio Path	SH05 should then be rem	oved. Check that IQ	Ref from the SMO	C is around 1.38Vdc and	then the RXI and Q	outputs from the GIF	to check which is		is missing but modulation is fine remove SH05 and check discretes, SF_VCC U220 Pin21 and
CR221	Ref. Osc. Varactor	4809641F04	SH2	Shield RX Mixer	2609306L01	11 xxxx # 12 xx #	Program Main Local Osc. to Channel  Set Tx Power level to fixed valure	auny.  If the 215Mtz is low probe the R.F inputs to the Mixer to see which RF path (RF INPUT or MAIN VCO) the fault lies on.  Main VCO tuning voltage U220 Pin23.								
CR223	TX Local Osc. Pin Diode	4809948D05	SH3	Shield Saw Filter	2609282J01	12 XX #	Display SW Version Number of Call Processor	- If Main VCO is low, the main suspicions are with the main VCO, or the VCO filter (FL461/462) and the SH01 and SH02 can should be removed.  If both Main VCO and modulation are missing then check the collectors of Q221 and Q222 for 2.7V. If ok the check from CPU DM. CS at Modern Pin9, Possible GIF SYN or Modern problem.								
	TX Local Osc. Varactor		SH4			20#	Display SW Version Number of Modem	. If the input to the filter is low, then there is some discretes under the vCo can. Check SF_vCC 0220 Filt21 and Main vCo (thing) voltage 0220 Filt23.						rated but is low then we look for problems under SH08 and SH09 and follow path through to antenna.		
CR261		4809641F02		Shield Main VCO	2609281J01	22#	Display SW Version Number of Speech Coder	If the signal is low at the input to these, it could be losses caused by the Antenna Switch U102.								
CR330	TX Isolation Diode	4809948D05	SH5	Shield GIFSYN	2609446K01	25 #	Set Continuous AGC	- If Y47.4 and 794.4 RF values are fine but 215MHz into GIF is low then we must also remove can SH03 and SH5. The SAW filter (FL480) and IF Isolation AMP (O480) is located under here.								
Q221 / Q222	Supply Transistor	4809579E18	SH6	Shield TIC IC	2609307L01	26xxxx #	Set Continuous AFC	and IF Isolation AMP (Q-	480) is located unde	r here.					_	
Q330	Tx Predriver (Exciter)	4809527E19	SH7	Shield Ant. Switch	2609279J01	31x #	Initiate Pseudo-Random Sequence with Midamble		DD	DOL	TINICITI		~ m / m			
Q410	GSM Receive Power Ampl.	4809527E20	SH8	Shied Tx VCO	2609462R01	33xxxx #	Synchronize to BCH Carrier		FK	EOU	<b>ENCI</b>	LS G	SIVI / J	DCS		
Q430	DCS Receive Power Ampl.	4809605E06	SH9	Shield PA	2609280J01	36#	Initiate Acoustic Loopback		T	1				1	1	REVISIONS
Q460	RX Mixer Amplifier	4809527E20	SH10	Shiel Front End	2609315M01	37 #	Stop Test	GSM / CHANNEL	Tx	Rx	MAIN VCO	Rx I.F	Rx IF LO	Tx I.F	Tx IF LO	KE VISIONS
Q480	IF Isolation Amplifier	4809940E01	BIIIO	Sinci i font End	200731314101	45xxxx # 46 #	Serving Cell Power Level  Display Current Valure od AFC DAC	1-Low	890.2	935.2	720.2	215	430	170	340	Europe Middle East & Africa Customer Services 19.11.98
		4813823A07				46 # 47x #	Set Audio Volume	62-Middle	902.4	947.4	732.4	215	430	170	340	LEVEL 3 COLOUR DIAGRAMS Rev. 1.3
Q604	Transistor Thermistor Line					58 / xxxxxx #	Display / Modify Security Code	62-Middle	902.4	947.4	732.4	215	430	170	340	Dual band 8900
U102	Antenna Switch	5109572E04				59 / xxx #	Display / Modify Lock Code	124-High	914.8	959.8	744.8	215	430	170	340	Michael Hansen, Ralf Lorenzen, Ray Collins Page 2 of 2
U104	Antenna Switch Control	5109923D14				60 #	Display IMEI	DCS / CHANNEL	Tx	Dv	MAIN VCO	Rx LF	Rx IF LO	Tx LF	Tx IF LO	
U220	GIFSYN IC	5109632D92				7100 #	Display Error Code	DC37 CHARRED	- 11	, KX	MAIN VCO	KX LI	KX II LO	17.1.1	TATE EG	
U300	PA	5109908K18				1		512-Low	1710	1805	1590	215	430	120	240	Furnne Middle Fast & Africa
U340	PAC IC	5109632D08						700-Middle	1747,8	1842,8	1627,8	215	430	120	240	_ Europe, Middle East & Africa Customer Services
U370	TIC IC	5109632D94	Y201	Ref Clock Varactor	4809612J19			885-High	1785	1880	1665	215	430	120	240	Level 3 Authorised

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Dual band 8900	

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**POWER UP DEBUG** 

Check that there is B+ present at input to GCAP on pin 40. If not, could be problem with Battery Select Circuitry (Q999)

	AL LAYE	R - ORI	DERAB	LE SPAF	RES
Part Designator	Part Description	Part Number	Part Designator	Part Description	Part Number
CR605	Diode Charge Line	4813833N13	U801	Speech Coder	5199285C0
J2	Keyboard Connector	2809882L05	U802	Multiplexer	5109632D4
J400	Batt Plug Connector	0909958J04	U803	Codec	5109920D1
J802	Micro Connector	0909888M01	U805	Doubler IC	5109781E4
Q501	Transisor TX_EN	4809607E02			
Q503	Transistor PAC_EN	4809605E02			
Q504	Transistor PAC_EN	4809605E02			
Q601	Power Transistor Charg. Line	4809579E26			
Q602	Transistor Battery Feedback	4809939C04			
R602	Resistor I Sense Line	0680195M64			
U702	EPROM / Flash	5199245A01			
U703	BIC IC	5109743E13			
U704	SRAM	5109509A06			

# press 2 sec.	Enter Manual Test Mode
01#	Exit Manual Test Mode
07 #	Mute Rx Audio Path
08 #	Unmute Rx Audio Path
09 #	Mute Tx Audio Path
10#	Unmute Tx Audio Path
11xxxx#	Program Main Local Osc. to Channelbb
12xx #	Set Tx Power level to fixed valure
19#	Display SW Version Number of Call Processor
20 #	Display SW Version Number of Modem
22 #	Display SW Version Number of Speech Coder
25 #	Set Continuous AGC
26xxxx #	Set Continuous AFC
31x #	Initiate Pseudo-Random Sequence with Midamble
33xxxx #	Synchronize to BCH Carrier
36#	Initiate Acoustic Loopback
37 #	Stop Test
45xxxx #	Serving Cell Power Level
46#	Display Current Valure od AFC DAC
47x #	Set Audio Volume
58 / xxxxxx #	Display / Modify Security Code
59 / xxx #	Display / Modify Lock Code
60 #	Display IMEI
7100 #	Display Error Code

Customer Complaints	Special Note	Part	Prefix	Reason
don't start				wrong flexing
don't start	no VSWITCH	GCAP	U900	defective
don't start		EPROM	U702	Bad soldering / defecti
power down / dont't start	Error Code 01 / 00	Crystal	Y201	defective
power down	Error Code 08 / 83	Batt Conn.	J400	
no keypad / no display			J2	
bad display segments				display defective
Insert Special Code	repairable in HTC only	Dallas IC	U709	defective
no charger function			Q601	defective
charges NIMH batterys only			Q604	is missing
no TX		PAC IC	U340	defective
Low TX output in DCS mode		PA	U300	defective
TX frequency offset		TIC	U370	defective
no TX audio		MIC		defective
AGC failure in DCS mode		GIFSYN	U220	defective
Main VCO lock time	follow locktime Fix			

- Verify collec	tors of regulators Q221 and Q222 are both are	ound 2.75V.
- If ok, then ch	eck that the Modem drives the Xtal Varactor	Diode CR221 on the AFC line with a DC Vo
- If ok, then fo	llow 13MHz path through GIF SYN & BIC at	nd then to Call Processor, Modem and throw
- If ok, then ch	eck chip enables from Eprom, and SRams at	Γest Points.
- If ok then ve	rify Reset Line.	
- If ok, then ve	my Reset Ellie.	
	RX SIGNAL PATH	
	TX SIGNAL PATH	REVISIO
_	MAIN VCO SIGNAL PATH	ICE VIDIO
		Europe Middle East & Africa Custom
	TUNING VOLTAGES	LEVEL 3 COLOUR DIAGRA
	REFERENCE CLOCK	Dual Band 8900
	Orderable Part	Michael Hansen, Ralf Lorenzen, Ra
	Non - Orderable Part	urope, Middle E Customer Se

Tie watchdog TP18 to L275 and supply power to radio

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