Process specification	position	amount	manufacturer number	manufacturer
RES 0 J 1/16W 0402	L101 R201 R202 R205 R207 R208 R411 R412 R421 R422 L501 R507 R508 R509 R510 L802 L803 L804 R807 R808 R809 R810 C901 R904 R905 R1003	26	RC0402JR-070RL	YAGEO
RES 0 J 1/10W 0603 RoHS	R210	1	RC0603JR-070RL	YAGEO
RES 0.2 F 1/4W 0805	R211	1	RL0805FR-7W0R2L	YAGEO
RES 0.2 F 1/4W 0805			RL1220S-R40-F	CYNTEC
RES 47 J 1/16W 0402	R512	1	RC0402JR-0747RL	YAGEO
RES 1.0K J 1/16W 0402	R204 R402 R403 R407 R410 R406 R415 R413 R414 R803 R804 R805 R806	13	RC0402JR-071KL	YAGEO
RES 1.5K J 1/16W 0402	R209 R401 R408 R409	4	RC0402JR-071K5L	YAGEO
RES 4.7K J 1/16W 0402	R504	1	RC0402JR-074K7L	YAGEO
RES 7.5K J 1/16W 0402	R215	1	RC0402JR-077K5L	YAGEO
RES 15K J 1/16W 0402	R901	1	RC0402JR-0715KL	YAGEO
RES 10K J 1/16W 0402	R501 R502 R801 R1001 R1002	5	RC0402JR-0710KL	YAGEO
RES 20K J 1/16W 0402	R802	1	RC0402JR-0720KL	YAGEO
RES 24K J 1/16W 0402	R203 R416 R417	3	RC0402JR-0724KL	YAGEO
RES 39K J 1/16W 0402	R213	1	RC0402JR-0739KL	YAGEO
RES 47K J 1/16W 0402	R601 R602 R603	3	RC0402JR-0747KL	YAGEO
RES 100K J 1/16W 0402	R101 R102 R103 R418 R506 R505 R902 R903	8	RC0402JR-07100KL	YAGEO
RES 270K J 1/16W 0402	R503	1	RC0402JR-07270KL	YAGEO
RES 330K J 1/16W 0402	R214	1	RC0402JR-07330KL	YAGEO
RES 100 J 1/16W 0402	R404 R405	2	RC0402JR-07100RL	YAGEO
RES 1M J 1/16W 0402 RoHS	R513	1	RC0402JR-071ML	YAGEO
C 12p 50V J 0402 C0G	C826 C827	2	GRM1555C1H120JZ01D	MURATA
C 1.2pF 50V C 0402 C0G	C836 C837 C838 C839	4	GRM1555C1H1R2CZ01	MURATA
C 1.8p 50V C 0402 C0G	C832 C833 C834 C835	4	GRM1555C1H1R8CZ01D	MURATA
C 18p 50V J 0402 C0G	C205 C208 C822	3	GRM1555C1H180JZ01D	MURATA
C 22p 50V J 0402 C0G	C823 C814 C825 C815 C816 C1002	6	GRM1555C1H220JZ01D	MURATA
C 270p 50V J 0402 C0G	C813	1	GRM1555C1H271JA01D	MURATA

C 100n 16V K 0402 X5R	C401 C402 C412 C413 C421 C501 C906 C907	8	GRM155R71C104KA88D	MURATA
C 1nF 50V K 0402 X7R	C821 C1001	2	GRM155R71H102KA01D	MURATA
C 4.7u 10V K 0603 X5R	C101 C201 C216 C212 C420 C505 C506	7	C0603X5R475K100NT	EYANG
C 2.2u 10V K 0603 X5R	C203 C213 C214 C222	4	GRM188R71A225KE15D	MURATA
C 1u 10V K 0402 X5R	C102 C202 C250 C218 C210 C211 C215 C221 C502 C601 C609 C806 C808 C819 C820 C904 C905 C908 C1005 C1006	20	GRM155R61A105KE15D	MURATA
C 1u 25V K 0603 X5R	D201 C206 C207 C510 C511 C503 C504 C507	8	GRM188R71E105KA12D	MURATA
C 2.2uF 25V A 0805 TAN	C508 C509	2	TCTP1E225M8R	ROHM
C 33p 50V J 0402 C0G	C404 C405 C416 C417 C410 C411 C425 C427	8	GRM1555C1H330JZ01D	MURATA
C 56p 50V J 0402 C0G	C902	1	GRM1555C1H560JZ01D	MURATA
C 100p 50V J 0402 C0G	C403 C415 C409 C426 C807	5	GRM1555C1H101JZ01D	MURATA
C 10uF 6.3V M 0805 X5R	C406 C414 C429	3	GRM219R60J106KE19	MURATA
C 22u 16V M 0805 X5R 0.8mm+/-0.20mm	C407 C408	2	C2012X5R0J226MT0J5N	TDK
C 22u 16V M 0805 X5R 1.25mm+/-0.20mm	C805 C903	2	C2012X5R1C226M	TDK
C 22n 25V K 0402 X7R	C418 C419 C1003 C1004	4	GRM155R71E223KA01D	MURATA
VARISISTOR working voltage=14V Clamping Voltage voltage=10V Capacitance=50pF	T401 T402 T408 T409 T410 T411 T702 T701 T703 T608 C602 C603 C604 T601 T602 T603	16	AVLC5S02050	AMOTHCH
VARISISTOR working voltage=14V Clamping Voltage voltage=10V Capacitance=85pF			MLVS0402K14	INPAQ
ESD, Veristor 0402 0.3p 12V for USB2.0			AIES12U020R2	AMOTECH
ESD, Veristor 0402 0.15p ,5V			ULCE0505A015	ICT
Low Capacitance Single Line ESD Protection Diode			ESD9B5V-2/TR	WILLSEMI
Low Capacitance Single Line ESD Protection Diode 5V(DFN2)			UESD6V8L1F	UNION
Low Capacitance Single Line ESD Protection Diode,6.8V			DF2S6.8FS	TOSHIBA
EMIFIL CHIP FERRITE BEAD 75ohm@100M 300mA 0402	B406 B407 B401 B402 B403 L404 L405	7	BLM15BB750SN1	MURATA
Chip Inductor 100nH 5% 0603 300mA	L401	1	LQG18HNR10J00	MURATA
L Hi-freq 2.2nH +/-0.3n 0.12ohm 300mA 0402	C824	1	LQG15HS2N2S02D	MURATA
L Hi-freq 100nH +/-5% 1.25ohm 150mA 0402	L1001	1	LQG15HSR10J02D	MURATA
L Hi-freq 18nH +/-5% 0.36ohm 300mA 0402	L805 L806	2	LQG15HS18NJ02D	MURATA
L Hi-freq 4.7nH +/-0.3n @100M 0.18ohm 300mA 0402	L807 L808	2	LQG15HS4N7S02D	MURATA

SMT Power Inductors 10UH 4.4mm 0.7A 20%	L502	1	SDRH2D14R-100M	SUNLORD
SMT Power Inductors 4.7UH 4.4mm 0.7A 20%			MGFL3225F4R7MT-LF	MG
SMT Power Inductors 10UH 4.4mm 0.7A 20%			MGFL3225F100MT-LF	MG
SMT Power Inductors 10UH 4.4mm 0.7A 20%			VLF4012AT-100MR79	TDK
Ultra-Low Noise LDO,300mA,SOT-23-5	U502	1	RP1202-33GB	RICHPOWER
WHITE LED STEP-UP CONVERTER	U501	1	RT9285C	Richtek
WHITE LED STEP-UP CONVERTER			EUP2584	EUTECH
WHITE LED STEP-UP CONVERTER			LN2117	NATLINERA
IC,GSM/GPRS Baseband processor-Aqfn 11.6mm*12.1mm*0.47mm BGA305pin	U1	1	MT6252	MTK
MT6612_QFN40	U901	1	MT6612	MTK
IC,SIGNAL-CHIP BROADCAST FM RADIO TUNER,RDA5802HS-QFN 20PIN,3mm*3mm	U1001	1	RDA5802HS/ES	RDA
IC,SIGNAL-CHIP BROADCAST FM RADIO TUNER,RDA5802NS-QFN 20PIN,3mm*3mm			RDA5802NS	RDA
ULTRA LOW EMI,3W FILTERLESS MONO CLASS-D AUDIO POWER AMPLIFIER,1.45mm*1.45mm WCSP9,MSOP-8,DFN3*3	U401	1	PAM8303C	PAM
Quad-Band GSM Power Amplifer Module	U801	1	AM7807	AMALFI
Crystal 26MHz +/-10ppm 7.5pF	X801	1	7M26000028	TXC
Crystal 26MHz +/-10ppm 7.3pF			TZ1689A	TAI-SAW
SAW Filter 881.5MHz,GSM850	Z801	1	SAFEA881MFL0F00	MURATA
SAW Filter 881.5MHz,GSM850			SF14-0881M5UBA1	KYOCERA
SAW Filter 881.5MHz,GSM850			SFH881PQ102	WISOL
SAW Filter FOR GSM900/1800 RX 10PIN	Z802	1	SAWEN942MCM0F00	MURATA
SAW Filter FOR GSM900/1800 RX 10PIN			SFW942PY002	WISOL
SAW Filter 1960MHz,PCS1900	Z803	1	SAFEA1G96FA0F00	MURATA
SAW Filter 1960MHz,PCS1900			SF14-1960M5UBA1	KYOCERA
SAW Filter 1960MHz,PCS1900			SFHG60MQ102	WISOL
64M 1.8V SERIAL FLASH MEMORY 208MIL	U301	1	W25Q64DWTIM	Winbond
Field-effect transistor silicon N-channel MOS type	Q202	1	SSM3K35MFV	TOSHIBA
Field-effect transistor silicon N-channel MOS type			PNM723T703E0-2	Prisemi
Dual N-Channel,Digital FET, SC70-6 decal	Q201	1	FDG6303N	FAIRCHILD
Electric double layer capacitor,3.3VDC 0.07F	C209	1	SM3R3703R01U	KORCHIP
BAT-RTC,PAS414R-S-VE5R			XH414H-IC02E	SEKIO
TANALUM CHIP CAP 47uF 10V ,3216 (H 1.1+/-0.1MM)			TCTAL1J476M8R	ROHM

TANALUM CHIP CAP 47uF 6.3V ,3216 (H 1.6+/-0.2MM)			TCA0J476M8R	ROHM
TANALUM CHIP CAP 100uF, 0805			F930J107MBA	NICHICON
Crystal 32.768KHz +/-20ppm 12.5pF	X201	1	MC146	EPSON
Crystal 32.768KHz 20ppm 12.5pF			SSP-T7-F	SEIKO
SCHOTTKY BARRIER DIODE,EMD2 SOD-523	D102 D103	2	RB520S-30	ROHM
SMD ZENER DIODE,RB160M-30, forward current=1A	D503	1	RB160M-30	ROHM
FILTER 2.4G SAW 2.0*1.2*0.9mm	Z901	1	RFBPB2012090AM1T61	WALSIN
FILTER 2.4G SAW 2.0*1.25*0.9mm			LFB212G45BB1D126	MURATA
FILTER 2.4G SAW 2.0*1.25*0.7mm			FB2012-06N2R4MT/LF	ACX
BATTERY CONNECTOR	J201	1	MBYB-0323107-14	MING DA HUI
3PIN Shell fragments connector 4.3MM Height			BT001-03165-32102	HAN YU WEI
SIM CON	J604	1	CAF99-06270-1501	LCN
H2.6mm			MUP-C748-06260004	DE HAI KANG
T CARD CON	J603	1	CAH11-08193-SF00	LCN
H1.8mm			MUP-M616-08180014	DE HAI KANG
8 PIN USB CONN	J401	1	UAF96-08275-0501	LCN
8pin Four feet socket			MUP-U506-08002104	DE HAI KANG
8 PIN USB CONN			mini-0008-3002	DA WEI
24PIN BTOB CON,FEMALE	J501 J502	2	BF040-I24B-N15	UJU
SIDE KEY,4.6X2.3X1.8 SMD	S701 S702	2	IT-1100AAEP	IL
A5250_Mainboard_V2.0		1		
A5350_V1.1_BB_RF_Shilding cover		1		

Tune-Up Procedure

Tune-Up TX

Content

1 Purpose

This panel gives the possibility to manage the mobile in the transmit mode. This window includes both:

- all the parameters (frequency band, RF channel, RF level to get the desire antenna output power ser needs to make the mobile transm itting,
- all the parameters needed to define a transmit burst,
- all the compensation table to be able to align the mobile in production.

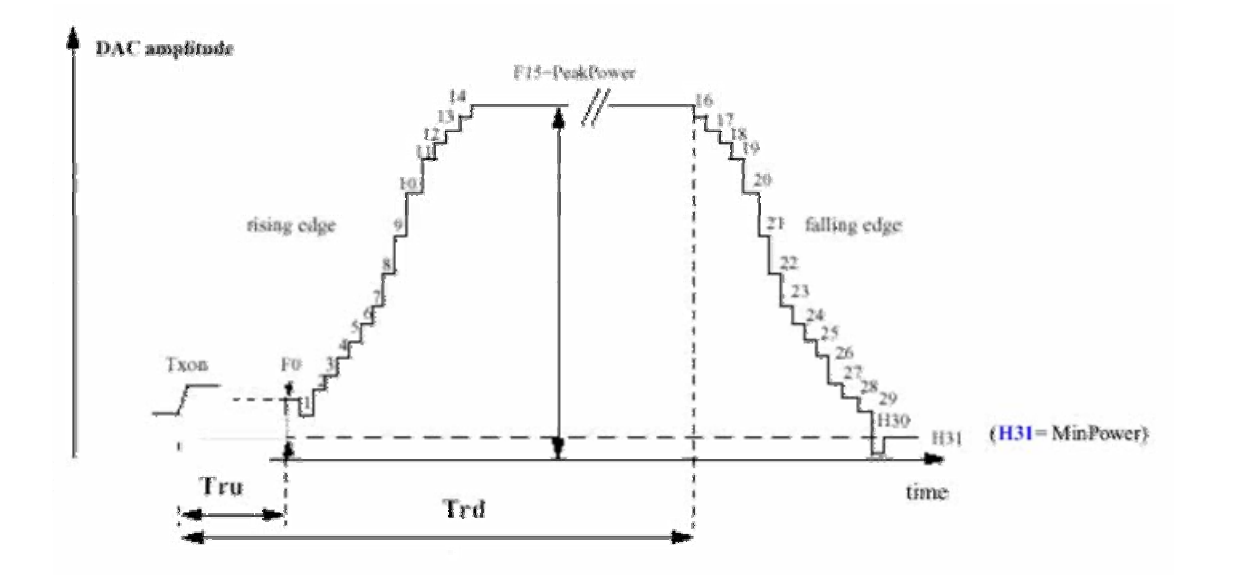
This Tx_commands user guide is describing:

- the characteristics of the transmit burst,
- all the parameters used in the transmit mode,
- the operating mode to make the mobile transmitting

2 General description

2.1 Characteristics of the transmit burst

The power levels and the shape of a transmit burst are controlled by the power amplifier controller integrated in the MT6252A. The burst is generated by a 10-bits DAC from the MT6252A as shown below: The ramping shape is referenced with therising edge of Tx-ON (from the Baseband).There are two types of parameters define the transmit burst: the first one define the shapes of the burst, and the second one define the temporal position of the burst. The rising and the falling edge of the transmit burst are determined by a set of 32 DAC code values n = 0 31.



Tru = TxTRUDefault + TRU_P + TRU_T
Trd = TxTRD_NBDefault + TRD_P (for a normal burst).
Trd = TxTRD_ABDefault + TRD_P (for an access burst).

3 Parameters

F(n) are values coming from the DAC to shape the transmit burst. Some F(n) values have a correspondingparameter used in the TAT to align the mobiles.
Parameter used in TAT = [F(n)].

3.1 Parameters used to shape the burst

- H0 = [F(1)] controls the rate at which energy is given to the control loop at the beginning of the ramp. This energy is needed to bring the PA system control in a closed loop. This is the second code coming from the AM7807.
- PeakPow = [F(15)] corresponds to the peak power of the transmit burst.
- H30 = [F(30)] corresponds to the last ramping coefficients used to shape the ramp.
- MinPow = [F(31)] is a fixed parameter and corresponds to the Code Start of the RDA6232 specification. It ensures a fast discharge of accumulated energy during the open loop mode in the summing node.

3.2 Parameters used to define the temporal position of the burst 3.2.1

Optimum position of the burst

This parameter is TRU (or TRU_P) on the panel, in the Optimal Burst. This is the burst starting time correction, which is optimised for each power control level. (Note that _P means that the parameter is a power compensation parameter).

3.2.2 Optimum length of the burst

This parameter is TRD (or TRD_P) on the panel, in the Optimal Burst. This is the burst length compensation, which is optimised for each power control level. (Note that _P means that the parameter is a power compensation parameter).

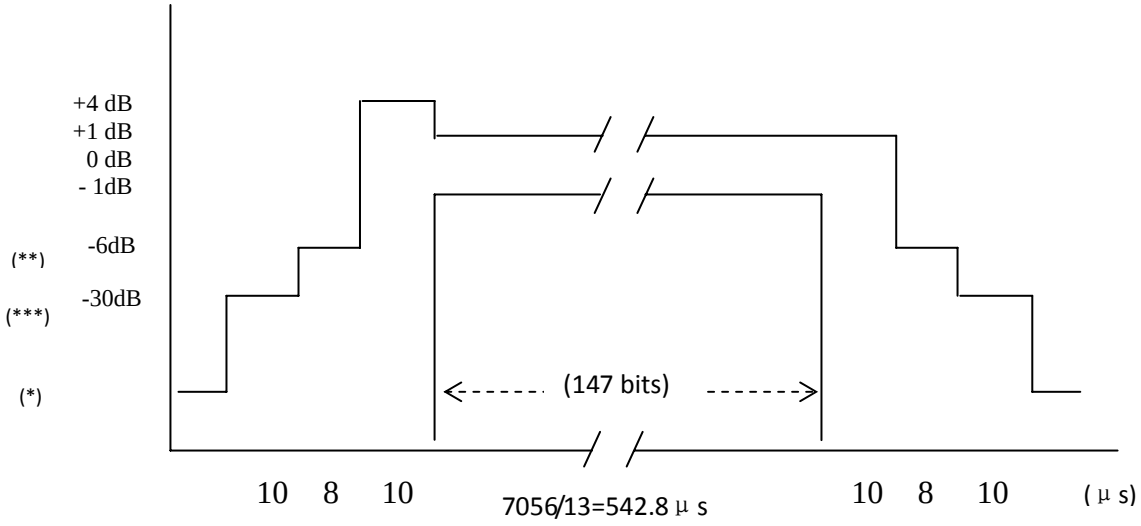
4 Operating mode

4.1 How to transmit a Tch burst (Random data), in GSM850 /900 mode; DCS1800/PCS1900 mode, at power control level max:

Connect the mobile with a special software, Configuration of the common parameters:

- band: GSM850/900/ DCS1800/PCS1900,
- channel: 192/62/698/661,
- RF level: PCL5/ PCL5/PCL0/ PCL5
- Burst select: Mode Tch Random

Press STAR command to start continuous TX, you can check the burst with CMU200 or Agilent 8960, it must fit the curve below.



The request of the Power vs Time.

4.2 How to stop Tx measurements:

Press STOP command to stop the TX..

4.3 How to transmit a burst after modifying parameters.

Please note that each time a parameter (such as parameter used to shape the burst) is changed, then the user have to: Download to flash to validate the parameter modification. If the command is not performed, the old parameters are taken into account.

Tune-Up Frequency

Content

5 Purpose

This panel gives the description of the Frequency plan.
This window includes both:

- Automatic frequency control(AFC),
- Static frequency error and range,
- Dynamic frequency error and range

6 Automatic frequency control

Depending on the chosen 26 MHz Crystal and on the spread on the Crystal, the init voltage for the AFC command could change.

On production line, on each handset, an initial frequency alignment procedure is done to compensate all components tolerances. In Case of DCXO implementation, 2 parameters are used for the Reference Clock alignment in order to guarantee a low frequency error at each switch-ON of the handset. This compensation is done by internal capacitors data bank of the MT6252A that can be switched.

One parameter called DCXO_CDAC defining the coarse initial frequency tuning by the 7 CDAC bits of the MT6252A.

Second parameter called DCXO_CAFC defining the fine initial frequency tuning by the 13 CAFC bits of the MT6252A.

Table 1: Alignment parameter related to reference clock - Generic

	Name	Description/Comments	Unit	Range	Value	Dyn	Dim	Comments
Generic	DCXO_CDAC	Coarse Init voltage for the AFC command (coarse capacitor data bank)				Default is mid	1 byte	
			LSB	2^{8}-1				1 scale (*)
		bank)				64d		
Generic	DCXO_CAFC	Fine Init voltage for the AFC	LSB 2^{16}-1			Default is command (fine capacitor data bank)	2 bytes	mid scale (*) 40

General conditions:

ower supply is set to nominal battery voltage on VBAT. Switch ON the mobile in TAT mode.

Step1: DCXO_CDAC tuning (Coarse AFC)

-Switch the mobile in TX PCS (channel 661 level 15 for PCS).

-Measure the frequency error in TX Mode with a CMU200 (reference board radio tester)

- Calculate the $DCXO\_CDAC_{(tuned)}$ value
- Enter this value in the fixed parameter window: parameter DCXO_CDAC

-Save $DCXO\_CDAC_{(tuned)}$ value in EEPROM with the TAT software menu.
-Switch-OFF and switch-ON the mobile to validate the new value

Step2: DCXO_CAFC tuning (Fine AFC)

-Switch the mobile in TX PCS (channel 661 level 15 for PCS).

-Measure the frequency error in TX Mode with a CMU200 (reference board radio tester)

- Calculate the $DCXO\_CAFC_{(tuned)}$ value
- Enter this value in the fixed parameter window: parameter DCXO_CAFC

-Save $DCXO\_CAFC_{(tuned)}$ value in EEPROM with the TAT software menu.
-Switch-OFF and switch-ON the mobile to validate the new value

Output Power

BAND GSM850/900 Power Level Target Unit Tolerance

Power level	Power Peak value	limit
	dBm	normal
5	33	+/-2 dB
6	31	+/-3 dB
7	29	+/-2 dB
8	27	+/-3 dB
9	25	+/-3 dB
10	23	+/-3 dB
11	21	+/-3 dB
12	19	+/-3 dB
13	17	+/-3 dB
14	15	+/-3 dB
15	13	+/-3 dB
16	11	+/-5 dB
17	9	+/-5 dB
18	7	+/-5 dB
19	5	+/-5 dB

BAND DCS1800/PCS1900 Power Level Target Unit Tolerance

Power level	Power Peak value	limit
	dBm	normal
0	30	+/-2 dB
1	28	+/-3 dB
2	26	+/-3 dB
3	24	+/-2 dB
4	22	+/-3 dB
5	20	+/-3 dB
6	18	+/-3 dB
7	16	+/-3 dB
8	14	+/-3 dB
9	12	+/-4 dB
10	10	+/-4 dB
11	8	+/-4 dB
12	6	+/-4 dB
13	4	+/-4 dB
14	2	+/-5 dB
15	0	+/-5 dB

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