



# **MT6250 GSM/GPRS SOC Processor Technical Brief**

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## Document Revision History

Revision	Date	Author	Description
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## Table of Contents

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<b>Document Revision History .....</b>	<b>2</b>
<b>Table of Contents .....</b>	<b>3</b>
<b>Preface .....</b>	<b>4</b>
<b>1 System Overview .....</b>	<b>5</b>
1.1 Platform Features .....	6
<b>2 Product Descriptions.....</b>	<b>7</b>
2.1 Pin Descriptions.....	7
2.1.1 Ball Diagram.....	7
2.1.2 Pin Coordination.....	7
2.2 Package Information.....	10
2.2.1 Package Outlines .....	10

## Lists of Tables and Figures

Table 1. Pin coordinates.....	9
Figure 1. Ball diagram and top view.....	7
Figure 2. Outlines and dimension of TFBGA 12.1mm*11.6mm, 354-ball, 0.5 mm pitch package.....	13

## Preface

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### Acronyms for register types

- R/W** For both read and write access
- RO** Read only
- RC** Read only. After the register bank is read, every bit that is HIGH(1) will be cleared to LOW(0) automatically.
- WO** Write only
- W1S** Write only. When data bits are written to the register bank, every bit that is HIGH(1) will cause the corresponding bit to be set to 1. Data bits that are LOW(0) have no effects on the corresponding bit.
- W1C** Write only. When data bits are written to the register bank, every bit that is HIGH(1) will cause the corresponding bit to be cleared to 0. Data bits that are LOW(0) have no effects on the corresponding bit.

## 1 System Overview

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Under construction.

## 1.1 Platform Features

Under construction.

## 2 Product Descriptions

### 2.1 Pin Descriptions

#### 2.1.1 Ball Diagram

For MT6250, an TFBGA 9.8mm \* 9.6mm, 233-ball, 0.5mm pitch package is offered. Pin-outs and the top view are illustrated in Figure 1 for this package.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
A	AVSS_2G	AVSS_2G	TP2	TP4	XTAL1	AVDD28_TDD0	BTREF2_P1	AVSS_BT	DVDD28	UTXD2	URXD2				CMDAT3	CMPCLK		CMPDN	GND	A
B	RXLB_P	RXLB_N	TP1	TP3	XTAL2	CLK_SEL	AVDD28_BT	AVSS_BT1	AVSS_BT	DVDD28_PER0	JRTCK	URXD1	UTXD1	CMVREF	CMDAT7	CMRST	CMDAT0	CMDAT6	CMMCLK	B
C			AVSS_2G		AVSS_2G		AVSS_BT		BTREXT	BPI_BUS0	JTCK	JTDO	CMDAT4		CMDAT2	CMDAT5	CMDAT1	NLD2	NLD0	C
D	RXHB_N	RXHB_P		AVSS_2G	FREF1	FREF2	AVSS_BT	AVDD28_BT	VDDK	BPI_BUS2	BPI_BUS3	JTMS	CMHREF		DVDD18_EW		WATCHDOG	NLD1	NLD8	D
E	TXO_LB	TXO_HB	AVSS_2G		AVSS_2G						BPI_BUS1	JTRST_B	JTDI		DVDD18_EW	DVDD18_EW	NLD3	NLD4		E
F	AVSS_2G	AVSS_2G		AVDD28_VRF	AVSS_2G	AVSS_2G									DVDD18_EW		LSCE1_B	LSRSTB	NLD7	F
G	VRF	VBAT_RF	VTCXO	VCAMA	VA	VBT		AVSS28_P1								LPA0		NLD5	SCL18	G
H		VBAT_ANALOG						AVSS43_PMU		VDDK	GND	GND				LPCE1_B	SDA18	LRD_B		H
J	PWRKEY	ISINK0	VREF	AVSS43_PMU	AVSS43_PMU	AVSS43_PMU	AVSS43_PMU	GND		GND	GND	GND	GND		LPTE	NLD6	LWR_B	SCL28	LPRSTB	J
K	KPLED	ISINK3		ISINK1					DVDD18	SRCLKEN4	RESETB	EINT12				LPCE0_B		SDA28	MCINS	K
L	BATSNS	ISENSE	AVSS43_SPK		AGND	TESTMODE	AVSS43_PMU									KROW7	KCOL5	SPL_CS		L
M	VBAT_SPK	SPK_OUTP		DRV	ISINK2	CHR_LDD									KCOL6	KCOL4	KROW6	KROW5	KCOL1	M
N		SPK_OUTN	BATDET	BATON		VCDT	VUSB	VSIM2	VSIM1						SPL_SCK	DVDD28	KCOL0	KCOL2	KROW1	N
P				AVSS28_ABB				AVSS43_PMU	XTAL_SEL								KROW0	KCOL3		P
R	APC	ACODET		AVDD28_ABB						SIM1_SCLK		DVDD28_ABB					EINT0	KROW4	KROW2	R
T	AU_MIC1A50	AU_MIC1A51		HSP	VSF		VCAMD	VRTC	AVDD28_FM			SIM2_SCLK			MCDA0	DVDD28_SFP	SPL_MISO	KROW3	KCOL7	T
U	AU_VIN0_F	AU_VIN0_N		HSN	VCORE		VIO18		AVSS_FM		AVSS_FM	USB11_DP	SIM1_SRST	MCKK		GPIO74	SD_PWRCK	SPL_MISO	SFC50	U
V	AU_VIN1_F	AU_VIN1_N	YP	XM	HPL	VBAT_DIGITAL	VIO28	VMC	XIN	RTN11P1A	RTN11P1A	USB11_DM	GND	SIM2_SIO	MCCM0	SF HOLD	SFOUT	SFWP	SFIN	V
W	AVSS28_ABB	AUX_IN4	XP	YM	HPR	VBAT_DIGITAL		VIBR	XOUT	RTN11P1A	RTN11P1A			SIM1_SIO	SIM2_SRST		DVDD28_SF	SFCK	GND	W

**Figure 1. Ball diagram and top view**

#### 2.1.2 Pin Coordination

Pin#	Net Name	Pin#	Net Name	Pin#	Net Name
A1	AVSS_2G	F19	NLD7	N7	VUSB
A10	DVDD28	F2	AVSS_2G	N8	VSIM2
A12	UTXD2	F4	AVDD28_VRF	N9	VSIM1
A13	URXD2	F5	AVSS_2G	P17	KROW0
A15	CMDAT3	F6	AVSS_2G	P18	KCOL3
A16	CMPCLK	G1	VRF	P4	AVSS28_ABB
A18	CMPDN	G16	LPA0	P8	AVSS43_PMU
A19	GND	G18	NLD5	P9	XTAL_SEL
A2	AVSS_2G	G19	SCL18	R1	APC

Pin#	Net Name	Pin#	Net Name	Pin#	Net Name
A3	TP2	G2	VBAT_RF	R11	SIM1_SCLK
A4	TP4	G3	VTCXO	R13	DVDD33_MSDC
A5	XTAL1	G4	VCAMA	R17	EINT0
A6	AVDD28_TCXO	G5	VA	R18	KROW4
A8	BTRF2P4G_N	G6	VBT	R19	KROW2
A9	AVSS_BT	G8	AVDD28_2GAFE	R2	ACCDT
B1	RXLB_P	H10	VDDK	R4	AVDD28_ABB
B10	DVDD28_FSRC	H11	GND	T1	AU_MICBIAS0
B11	JRTCK	H12	GND	T12	SIM2_SCLK
B12	URXD1	H16	LPCE1_B	T15	MCDA0
B13	UTXD1	H17	SDA18	T16	DVDD28_SFP
B14	CMVREF	H18	LRD_B	T17	SPI_MOSI
B15	CMDAT7	H2	VBAT_ANALOG	T18	KROW3
B16	CMRST	H7	AVSS43_PMU	T19	KCOL7
B17	CMDAT0	J1	PWRKEY	T2	AU_MICBIAS1
B18	CMDAT6	J10	GND	T4	HSP
B19	CMMCLK	J11	GND	T5	VSF
B2	RXLB_N	J12	GND	T7	VCAMD
B3	TP1	J13	GND	T8	VRTC
B4	TP3	J15	LPTE	T9	AVDD28_FM
B5	XTAL2	J16	NLD6	U1	AU_VIN0_P
B6	CLK_SEL	J17	LWR_B	U11	AVSS_FM
B7	AVDD28_ABT	J18	SCL28	U12	USB11_DP
B8	AVSS_BT1	J19	LPRSTB	U13	SIM1_SRST
B9	AVSS_BT	J2	ISINK0	U14	MCCK
C10	BPI_BUS0	J3	VREF	U16	GPIO74
C11	JTCK	J4	AVSS43_PMU	U17	SD_PWROK
C12	JTDO	J5	AVSS43_PMU	U18	SPI_MISO
C13	CMDAT4	J6	AVSS43_PMU	U19	SFCS0
C15	CMDAT2	J7	AVSS43_PMU	U2	AU_VIN0_N
C16	CMDAT5	J8	GND	U4	HSN
C17	CMDAT1	K1	KPLED	U5	VCORE
C18	NLD2	K10	SRCLKENAI	U7	VIO18
C19	NLD0	K11	RESETB	U9	AVSS_FM
C3	AVSS_2G	K12	EINT12	V1	AU_VIN1_P
C5	AVSS_2G	K16	LPCE0_B	V10	RXLNA_INP_LA
C7	AVSS_BT	K18	SDA28	V11	RXLNA_INN_SA
C9	BTREXT	K19	MCINS	V12	USB11_DM
D1	RXHB_N	K2	ISINK3	V13	GND
D10	BPI_BUS2	K4	ISINK1	V14	SIM2_SIO
D11	BPI_BUS3	K8	DVDD18	V15	MCCM0
D12	JTMS	L1	BATSNS	V16	SFHOLD
D13	CMHREF	L16	KROW7	V17	SFOUT

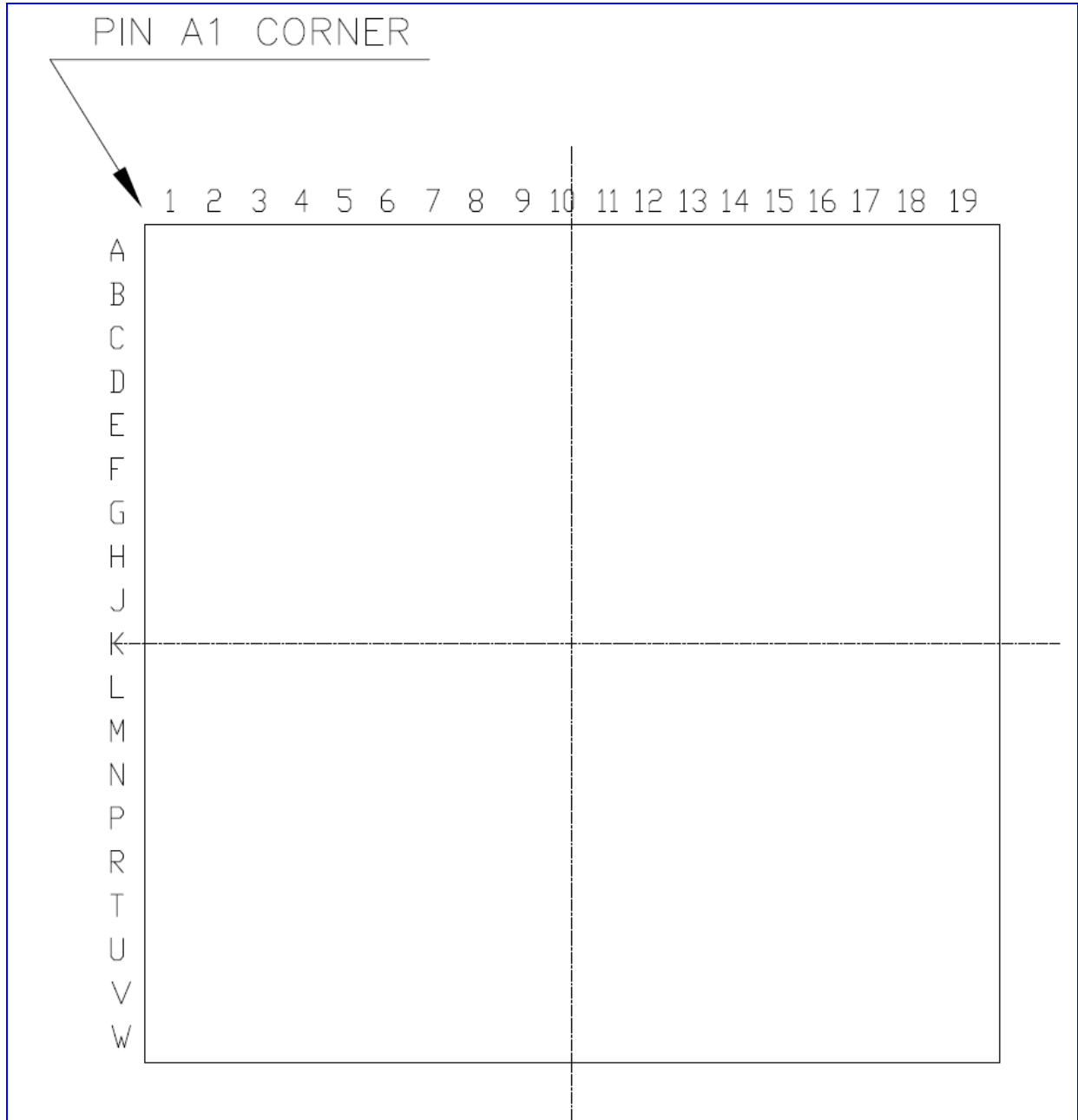


Pin#	Net Name	Pin#	Net Name	Pin#	Net Name
D15	DVDD18_EMI	L17	KCOL5	V18	SFWP
D17	WATCHDOG	L18	SPI_CS	V19	SFIN
D18	NLD1	L2	ISENSE	V2	AU_VIN1_N
D19	NLD8	L3	AVSS43_SPK	V3	YP
D2	RXHB_P	L5	AGND	V4	XM
D4	AVSS_2G	L6	TESTMODE	V5	HPL
D5	FREF1	L7	AVSS43_PMU	V6	VBAT_DIGITAL
D6	FREF2	M1	VBAT_SPK	V7	VIO28
D7	AVSS_BT	M15	KCOL6	V8	VMC
D8	AVDD28_DBT	M16	KCOL4	V9	XIN
D9	VDDK	M17	KROW6	W1	AVSS28_ABB
E1	TXO_LB	M18	KROW5	W10	RXLNA_INN_LA
E11	BPI_BUS1	M19	KCOL1	W11	RXLNA_INP_SA
E12	JTRST_B	M2	SPK_OUTP	W14	SIM1_SIO
E13	JTDI	M4	DRV	W15	SIM2_SRST
E15	DVDD18_EMI	M5	ISINK2	W17	DVDD28_SF
E16	DVDD18_EMI	M6	CHR_LDO	W18	SFCK
E17	NLD3	N15	SPI_SCK	W19	GND
E18	NLD4	N16	DVDD28	W2	AUX_IN4
E2	TXO_HB	N17	KCOL0	W3	XP
E3	AVSS_2G	N18	KCOL2	W4	YM
E5	AVSS_2G	N19	KROW1	W5	HPR
F1	AVSS_2G	N2	SPK_OUTN	W6	VBAT_DIGITAL
F15	DVDD18_EMI	N3	BATDET	W8	VIBR
F17	LSCE1_B	N4	BATON	W9	XOUT
F18	LSRSTB	N6	VCDT		

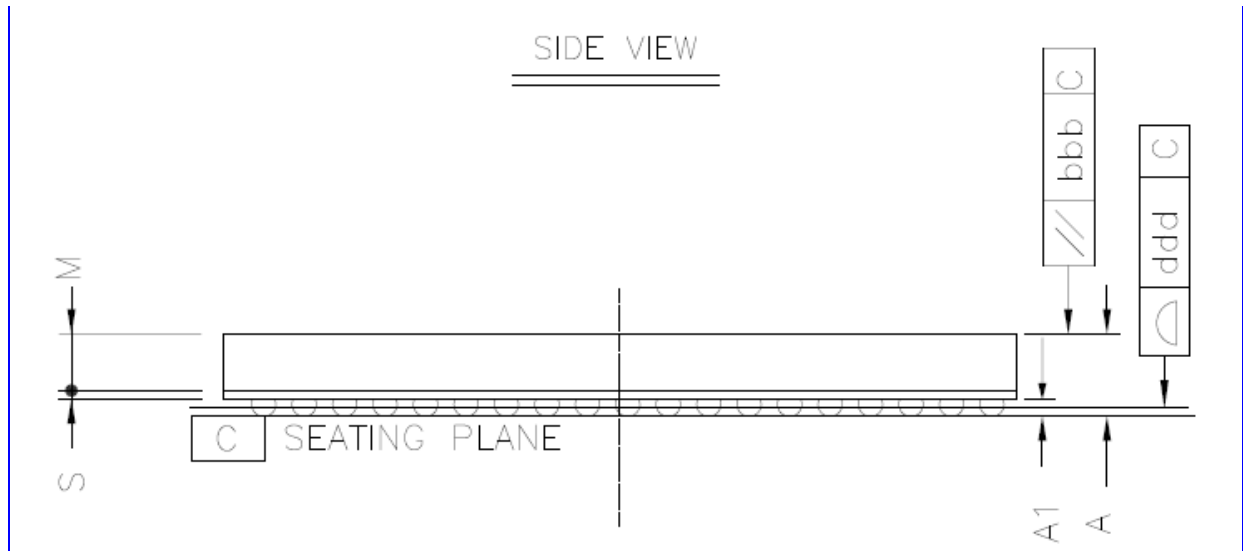
*Table 1. Pin coordinates*

## 2.2 Package Information

### 2.2.1 Package Outlines







		Symbol	Common Dimensions
Package :			TFBGA
Body Size:	X	E	9.800
	Y	D	9.600
Ball Pitch :	X	eE	0.500
	Y	eD	0.500
Total Thickness :		A	1.100 MAX.
Mold Thickness :		M	0.700 Ref.
Substrate Thickness :		S	0.110 Ref.
Ball Diameter :			0.300
Stand Off :		A1	0.160 ~ 0.260
Ball Width :		b	0.250 ~ 0.350
Package Edge Tolerance :		aaa	0.100
Mold Flatness :		bbb	0.100
Coplanarity:		ddd	0.080
Ball Offset (Package) :		eee	0.150
Ball Offset (Ball) :		fff	0.050
Ball Center TO Package Edge :		G1	0.500
		G2	0.300
		G3	0.300
		G4	0.300
Ball Count :		n	233
Edge Ball Center to Center :	X	E1	9.000
	Y	D1	9.000

**Figure 2. Outlines and dimension of TFBGA 12.1mm\*11.6mm, 354-ball, 0.5 mm pitch package**