

C304SA Adjustment Description for Mass Production.

Model Code No.	1-163-280-00
Model No.	C304SA

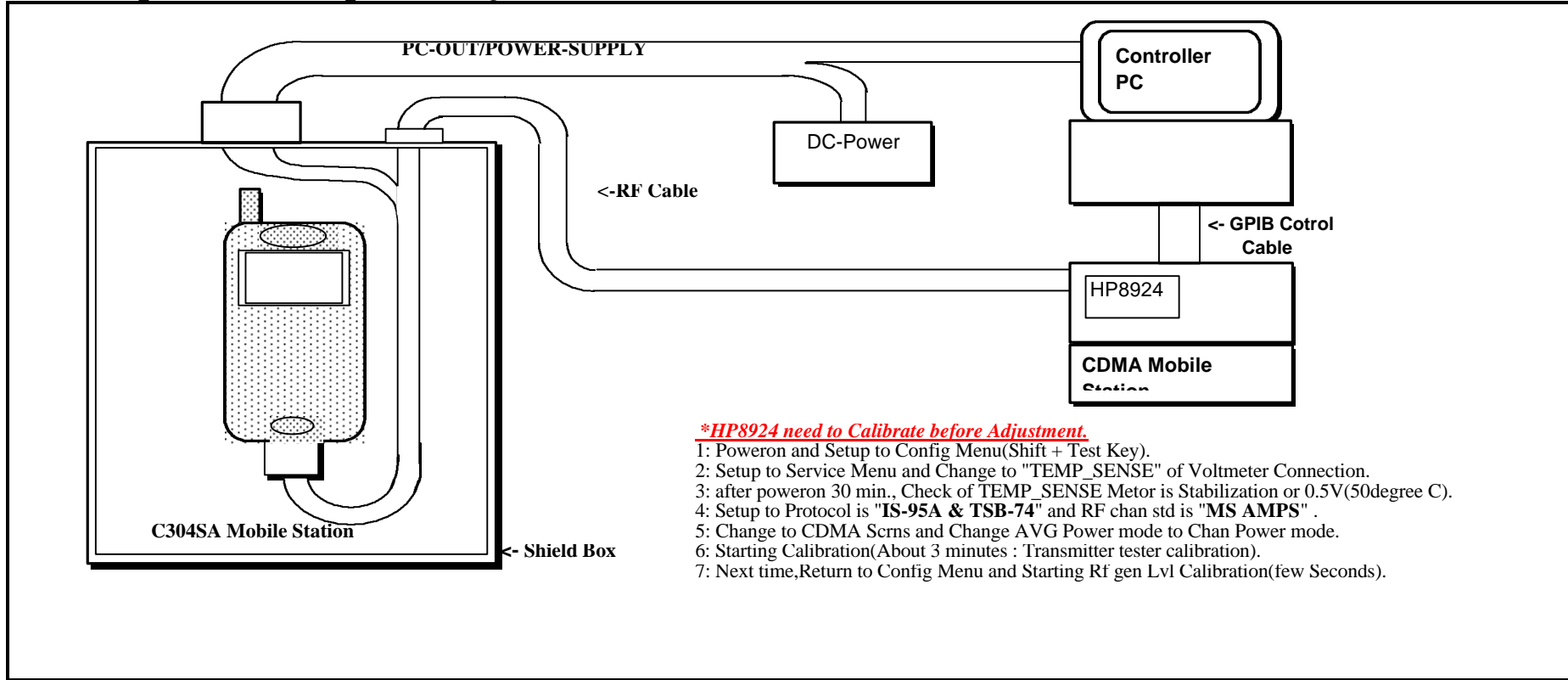
ENG. Section	Personal Telecommunication Division Technical Engineering Department RF Section.
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Minor Change Version

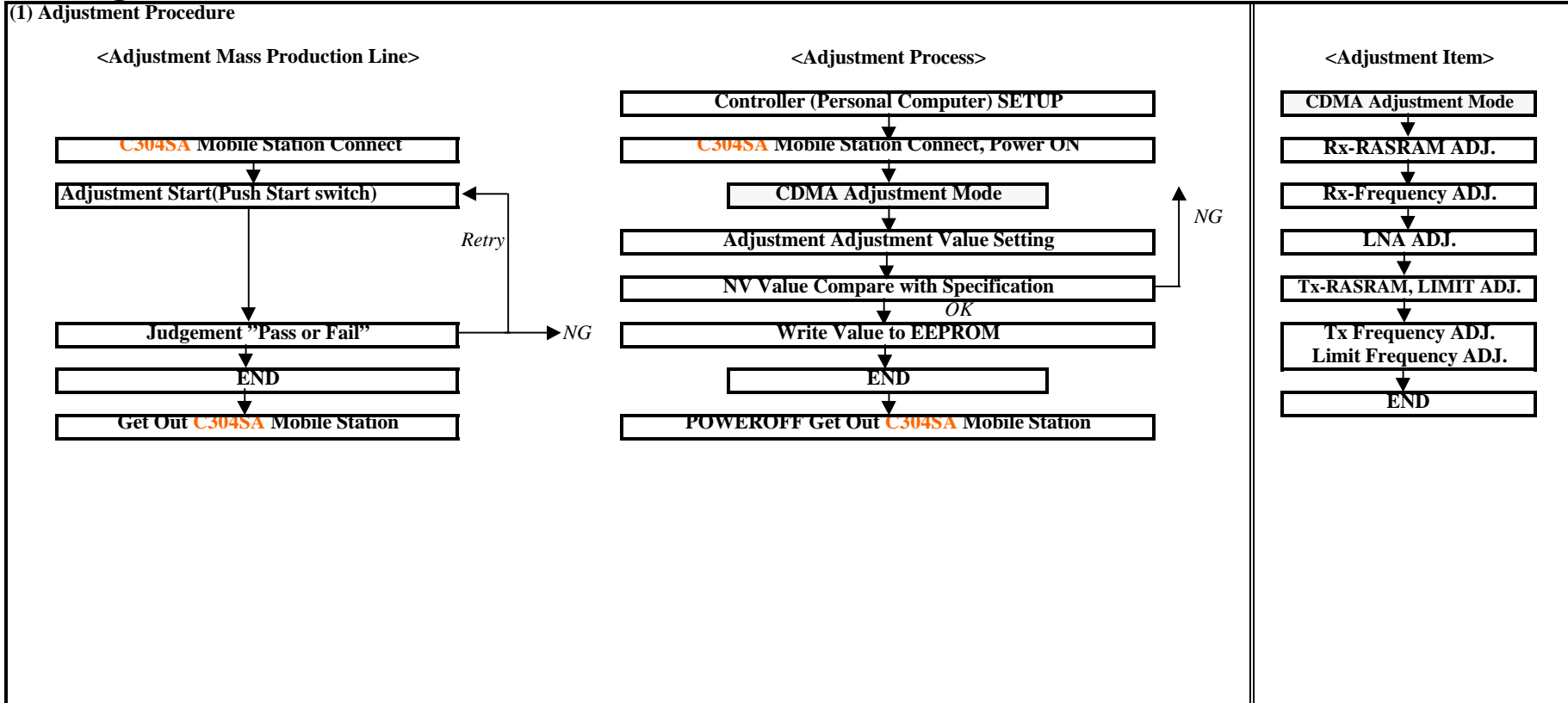
NO.	Draw/Change History	Draw/Change Contents
Ver.1.0	Apr. 12, 2000	NEW

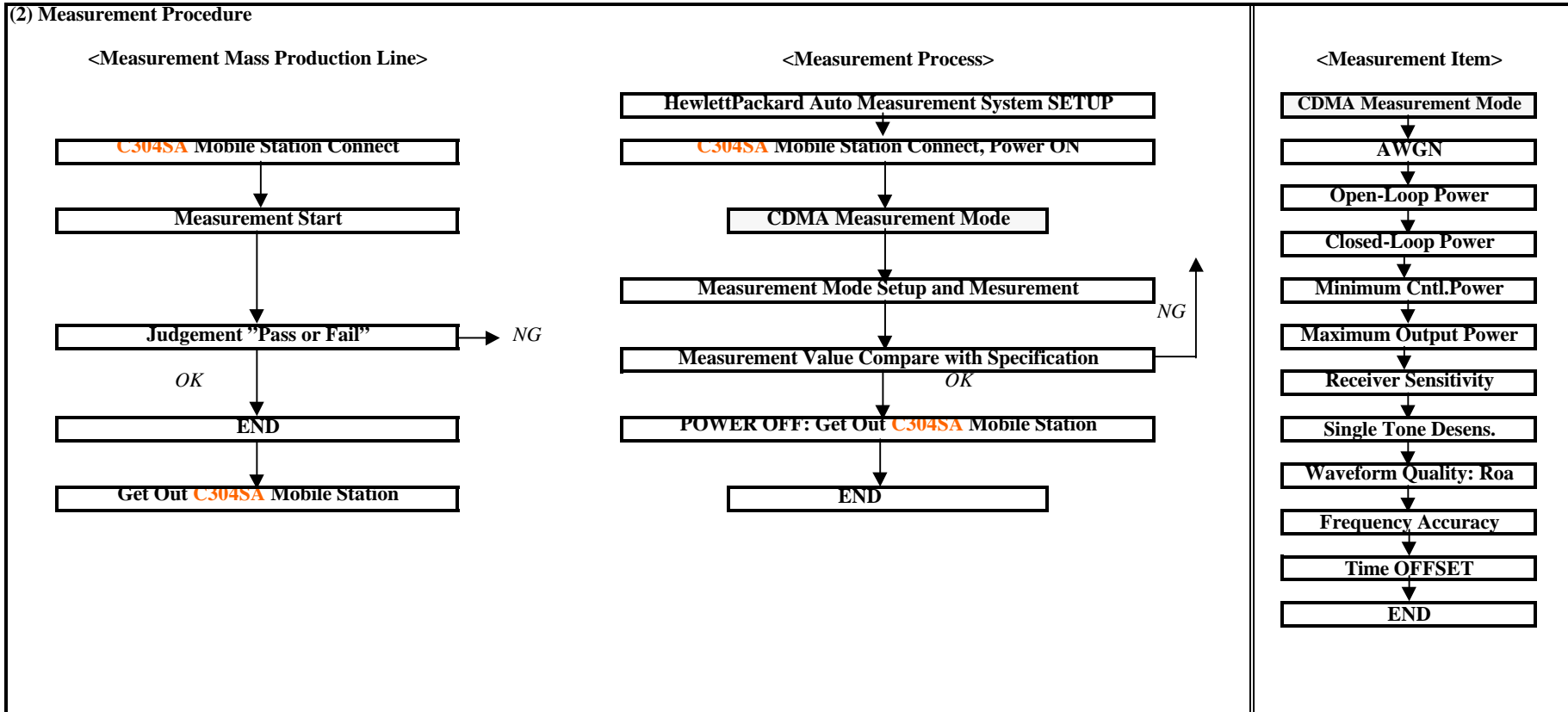
1. Set-Up for Tune-Up and Adjustment of Transmitter



2 Alignment Procedure

(1) Adjustment Procedure





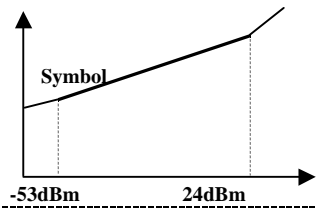
3. Adjustment Value

1. CDMA RX Adjustment

ITEM	Sub-ITEM	Handset Setup(Internal Setup)	HP8924 Setup	Adj. Value	Accuracy of NV-Value
Rx-RASRAM Adjustment	Table 1	<u>Normal Mode</u>	cdma Ch=358 : SG LV=-106.0dBm	-106.0dBm	
	Table 2	OFF Line Mode	SG LV=-100.6dBm	-100.6dBm	
	Table 3		SG LV=-95.3dBm	-95.3dBm	
	Table 4		SG LV=-90.0dBm	-90.0dBm	
	Table 5		SG LV=-84.7dBm	-84.7dBm	
	Table 6		SG LV=-79.4dBm	-79.4dBm	
	Table 7		SG LV=-74.1dBm	-74.1dBm	
	Table 8		SG LV=-68.8dBm	-68.8dBm	
	Table 9		SG LV=-63.5dBm	-63.5dBm	
	Table 10		SG LV=-58.1dBm	-58.1dBm	
	Table 11		SG LV=-52.8dBm	-52.8dBm	
	Table 12		SG LV=-47.5dBm	-47.5dBm	
	Table 13		SG LV=-42.2dBm	-42.2dBm	
	Table 14		SG LV=-36.9dBm	-36.9dBm	
	Table 15		SG LV=-31.6dBm	-31.6dBm	
	Table 16		SG LV=-26.3dBm	-26.3dBm	
	Table 17		SG LV=-21.0dBm	-21.0dBm	
RX AGC Frequency Adjustment	Bk 0=1017ch	<u>Normal Mode</u>	<u>RF INPUT(SG) LV=-63.5dBm</u>	AGC DIFF.	
	Bk 1=46ch	Reference ch: 358ch	Change to Channel 16 Time	AGC DIFF.	
	Bk 2=98ch	Deference of Center ch AGCsym.		AGC DIFF.	
	Bk 3=150ch	Change to Channel 16 Time.		AGC DIFF.	
	Bk 4=202ch	OFF Line Mode		AGC DIFF.	
	Bk 5=254ch			AGC DIFF.	
	Bk 6=306ch			AGC DIFF.	
	Bk 7=358ch			Center CH	
	Bk 8=410ch			AGC DIFF.	
	Bk 9=462ch			AGC DIFF.	
	Bk10=514ch			AGC DIFF.	
	Bk11=566ch			AGC DIFF.	
	Bk12=618ch			AGC DIFF.	
	Bk13=670ch			AGC DIFF.	
	Bk14=722ch			AGC DIFF.	
Bk15=774ch			AGC DIFF.		

ITEM	Sub-ITEM	Handset Setup (Internal Setup)	HP8924 Setup	Adj. Value	Accuracy of NV-Value
LNA Adjustment	LNAOffset	LNA Gain Active Point Setting	Reference ch : 358ch		
	LNASlope	LNA Gain Slope Setting			
	LNAMIN	LNA vs Rfin Active Point			
	LNAMAX	LNA Active SPAN Setting			

2. CDMA TX & TX-Limit Adjustment					Page 6
ITEM	Sub-ITEM	Handset Setup (Internal Setup)	HP8924 Setup	Adj. Value	Accuracy of NV-Value
Tx-RASRAM Adjustment		Nomal Test Mode	CDMA Ch=358ch	+23.0dBm	
		1-1. Set AGC Register=195 /Store measurement of Tx-Power.	SG LEVEL according to the transmission LEVEL of MS.	-53.0dBm	
		1-2. Set AGC Register=195-30stp(-165,-135,...)			
		1-3. Store measurement of Tx-Power			
		Repeat 1-2,1-3 until the value exceeds +6dBm.			
		2-1. Set AGC Register=195 /Store measurement of Tx-Power.			
		2-2. Set AGC Register=195+30stp (225,255,...)			
		2-3. Store measurement of Tx-Power.			
		2-4. Repeat 2-2,2-3 until the above value is <-53 dBm or the Register value is 345.			
		2-5. When the value is <-53 dBm or Register = >345,			
		2-6. Set AGC Register=+15stp			
		2-7. Store measurement of Tx-Power.			
		2-8. Draw the approximate curve by the setting value of AGC Register and measurement of Tx-Power			
	Tx-Limit Adjustment	Table 1	According to the above approximate curve, each AGC register value	CDMA Ch=358ch	+11.75dBm
Table 2		corresponded to Tx-limit levels are		+13.1dBm	
Table 3		registered.		+14.4dBm	
Table 4				+15.7dBm	
Table 5				+17.1dBm	
Table 6				+18.4dBm	
Table 7				+19.7dBm	
Table 8				+21.1dBm	
Table 9				+22.4dBm	
Table 10				+23.7dBm	
Table 11				+25.1dBm	
Table 12				+26.4dBm	
Table 13				+27.7dBm	
Table 14				+29.0dBm	
Table 15				+30.4dBm	
Table 16				+31.7dBm	
OFFSET	Offset : 18.4dB (Table 6)			+19.7dBm	
SPN	Spn : 26.4dBm (Table 12)			+29.0dBm	



3. Tx AGC Frequency Adjustment and Tx Limit Frequency Adjustment.				Page 7
TX AGC Frequency Adjustment	Bk 0=1017ch	Nomal Test Mode	RF INPUT(SG) LV=-95.4dBm	Tx-Pow diff.
	Bk 1=46ch	Reference ch : 358ch	Change to Channel 16 Time.	Tx-Pow diff.
	Bk 2=98ch	Difference of Center ch AGCsym.		Tx-Pow diff.
	Bk 3=150ch	Change to Channel 16 Time.		Tx-Pow diff.
	Bk 4=202ch			Tx-Pow diff.
	Bk 5=254ch			Tx-Pow diff.
	Bk 6=306ch			Tx-Pow diff.
	Bk 7=358ch			Tx-Pow diff.
	Bk 8=410ch			Tx-Pow diff.
	Bk 9=462ch			Tx-Pow diff.
	Bk10=514ch			Tx-Pow diff.
	Bk11=566ch			Tx-Pow diff.
	Bk12=618ch			Tx-Pow diff.
	Bk13=670ch			Tx-Pow diff.
	Bk14=722ch			Tx-Pow diff.
	Bk15=774ch			REF. CH
TX Limit Frequency Adjustment	Bk 0=1017ch	Nomal Test Mode	RF INPUT(SG) LV=-95.4dBm	*
	Bk 1=46ch	Reference ch : 358ch	Change to Channel 16 Time.	*
	Bk 2=98ch	Difference of Center ch AGC sym.		*
	Bk 3=150ch	Change to Channel 16 Time.		*
	Bk 4=202ch			*
	Bk 5=254ch			*
	Bk 6=306ch			*
	Bk 7=358ch			*
	Bk 8=410ch			*
	Bk 9=462ch			*
	Bk10=514ch			*
	Bk11=566ch			*
	Bk12=618ch			*
	Bk13=670ch			*
	Bk14=722ch			*
	Bk15=774ch			REF. CH

*TX-Power Differential + ADC Differential x Limit Table Value

4. Measurement Specifications of Adjustment

CDMA Measurement Specification						
Measurement Item	Standard Item	IS98A Standard Spec	Measurement Spec	Measurement Condition	Measurement Channel	Others
<i>RTC Demod. of FW.ch</i> AWGN Test6(Eb/Nt=4.6) AWGN Test12(Eb/Nt=2.9)	IS98A : 9.3.3	1%(0.010) 1%(0.010)	1%(0.010) 1%(0.010)	Rate1 1200 (TEST6) Rate2 1800 (TEST12)	383ch 383ch	
<i>Waveform Quality</i> RHO Frequency Err Rate Time Offset	IS98A : 10.3.2	> 0.944 ±300Hz ±1 uS	> 0.944 ±300Hz ±1uS	RateSet2 SVC opt9 14400bps Traffic Ec/Io -12.3dB	1013ch,383ch,777ch 1013ch,383ch,777ch 1013ch,383ch,777ch	
<i>TTC Range of Openloop</i> Openloop Power Test1 Openloop Power Test2 Openloop Power Test3	IS98A : 10.4.1	-48±9.5 (CLASSIII) -8±9.5 (CLASS III) 18~30 (CLASS III)	-48±9.5 (CLASS III) -8±9.5 (CLASS III) 18~30 (CLASS III)	RateSet2 SVC opt9 14400bps	1013ch,383ch,777ch 1013ch,383ch,777ch 1013ch,383ch,777ch	
<i>TTC Range of Closedloop</i> Closedloop Full Power Closedloop Max Power Closedloop Min Power	IS98A : 10.4.4	RF Output = -15dBm >+24dB <-24dB	-16±3dBm >+24dB <-24dB	RateSet2 SVC opt9 14400bps	1013ch,383ch,777ch 1013ch,383ch,777ch 1013ch,383ch,777ch	
<i>TTC Min.Controlled Pow</i> Minimum Controlled Pow	IS98A : 10.4.6	-50dBm/1.23MHz	-50dBm/1.23MHz	RateSet2 SVC opt9 14400bps	1013ch,383ch,777ch	
<i>RTC Receiver Sensitivity</i> Receiver Sensitivity FER	IS98A : 9.4.1	0.5% (Confidence95%)	0.5%(Confidence95%)	Rate1 Full -104.0dBm	1013ch,383ch,777ch	
<i>Single Tone Desens.</i> Sensitivity FER	IS98A : 9.4.2	1.0% (Confidence95%)	1.0%(Confidence95%)	Tone Offset ±900kHz	1013ch,383ch,777ch	
<i>TTC Max RF Output Pow</i> Max Power Output Max Power Spurious (Ch) Max Pow.Spurious Freqoff	IS98A : 10.4.5	> 0.2W < -42dBc -	21.0dBm~23.0dBm < -42dBc	At RF I/F	1013ch,383ch,777ch 1013ch,383ch,777ch 1013ch,383ch,777ch	
<i>TTC Conducted Spurious</i> Spur Inband Power (30kHz) Spur Inband Freq (30kHz) Spur Inband Pow.(-42dBc)	IS98A : 10.5.1	Measurement Level Measurement Freq. < -42dBc	Measurement Level Measurement Freq. < -42dBc	SVC Opt9 (14400) -13dBm/1.23MHz	383ch 383ch 383ch	