Amadeus Tune Up Procedures

Date: 2003/5/28
Version:
Doc. No.:

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History

2003-05-28	Created by Alfred Lin & Dennis Huang

Introduction

The output power in a mobile phone is produced by Power amplifier, and it should be in the range 880~915MHz(GSM), 1710~1785MHz(DCS), 1850~1910MHz (PCS). The power amplifier module has a voltage control loop to control output power level ,and the control signal is from baseband DSP IC, baseband IC generates an envelop signal to control the power ramp up, ramp down, and power level of the radio burst.

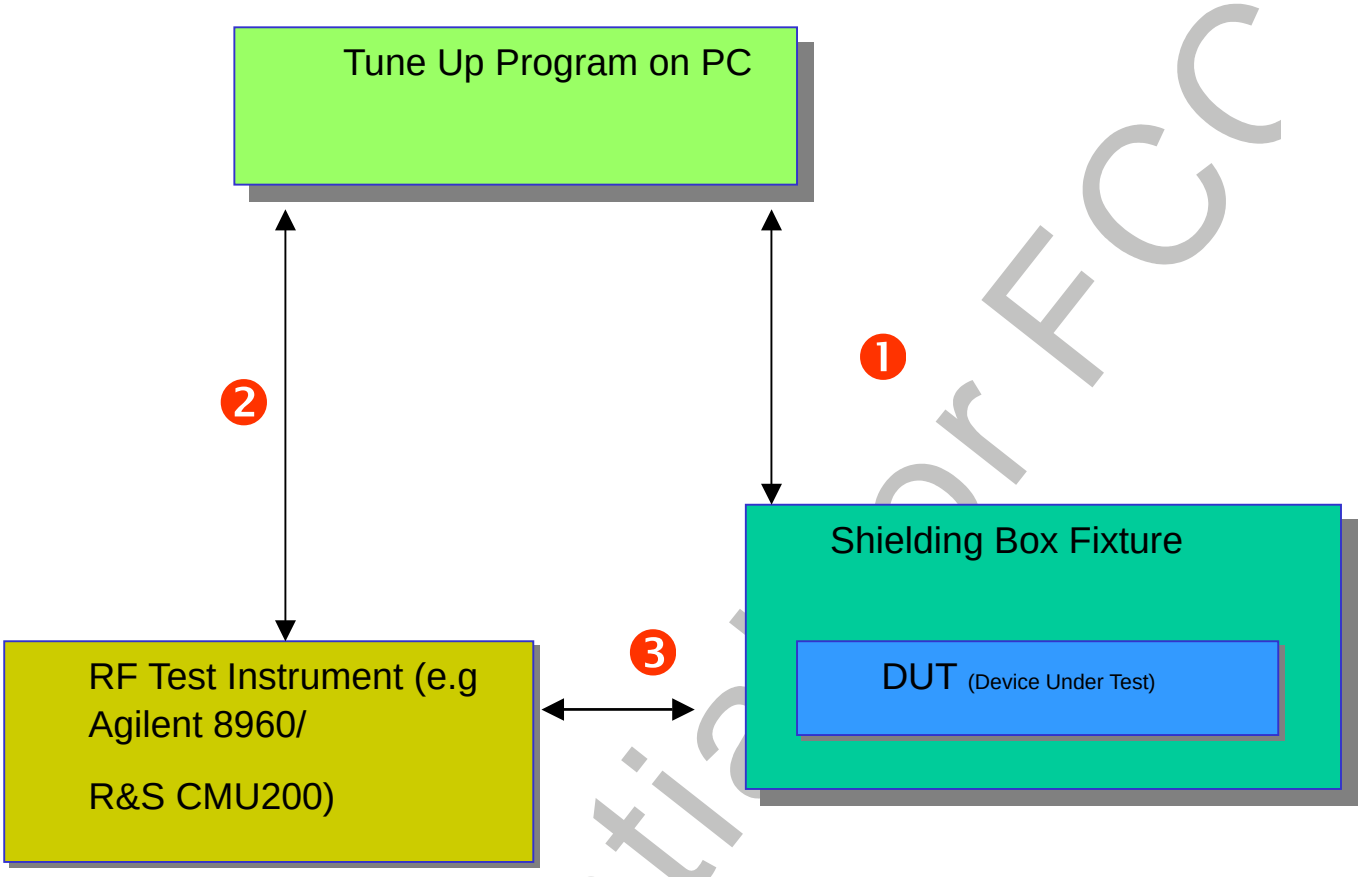
Baseband IC includes a simple processor that generates 10-bits word at a rate of 2167KHz. This processor computes the shape of the ramp-up and ramp-down transitions of envelope signal from the value of the power level step and from the 16 coefficients of the desired shaping filter which are stored in a random access memory(RAM).

Output power specification

Normal condition

GSM			DCS			PCS		
Power level	Target Output power	Tolerance Limit	Power level	Target Output power	Tolerance Limit	Power level	Target Output power	Tolerance Limit
5	33dBm	±2dB	0	30dBm	±2dB	0	30dBm	±2dB
6	31dBm	±3dB	1	28dBm	±3dB	1	28dBm	±3dB
7	29dBm	±3dB	2	26dBm	±3dB	2	26dBm	±3dB
8	27dBm	±3dB	3	24dBm	±3dB	3	24dBm	±3dB
9	25dBm	±3dB	4	22dBm	±3dB	4	22dBm	±3dB
10	23dBm	±3dB	5	20dBm	±3dB	5	20dBm	±3dB
11	21dBm	±3dB	6	18dBm	±3dB	6	18dBm	±3dB
12	19dBm	±3dB	7	16dBm	±3dB	7	16dBm	±3dB

13	17dBm	±3dB	8	14dBm	±3dB	8	14dBm	±3dB
14	15dBm	±3dB	9	12dBm	±4dB	9	12dBm	±4dB
15	13dBm	±3dB	10	10dBm	±4dB	10	10dBm	±4dB
16	11dBm	±5dB	11	8dBm	±4dB	11	8dBm	±4dB
17	9dBm	±5dB	12	6dBm	±4dB	12	6dBm	±4dB
18	7dBm	±5dB	13	4dBm	±4dB	13	4dBm	±4dB
19	5dBm	±5dB	14	2dBm	±5dB	14	2dBm	±5dB
			15	0dBm	±5dB	15	0dBm	±5dB



❶:The host PC send commands to instruct the DUT to continuously transmit power,which varies according to different DAC values.

❷ :The host PC remotely control the test instrument via GPIB interface to measure specific power, and then retrieve the measured result.

Then the PC calculates a new DAC value according to the power difference and repeat step❶ ❷

❸:A RF cable connects the instrument and the DUT directly.