



## Product Specification

**CLASS I**

**BC05 FLASH MODULE**

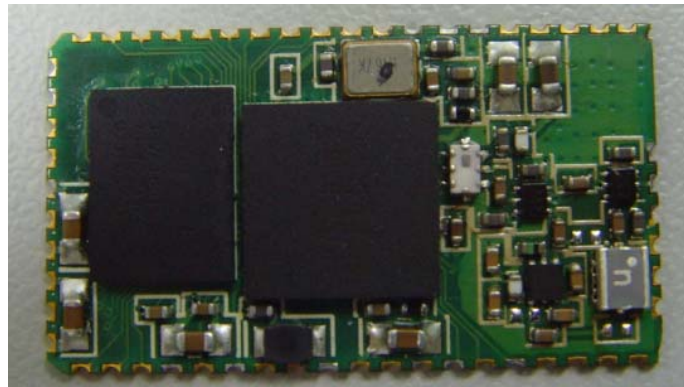
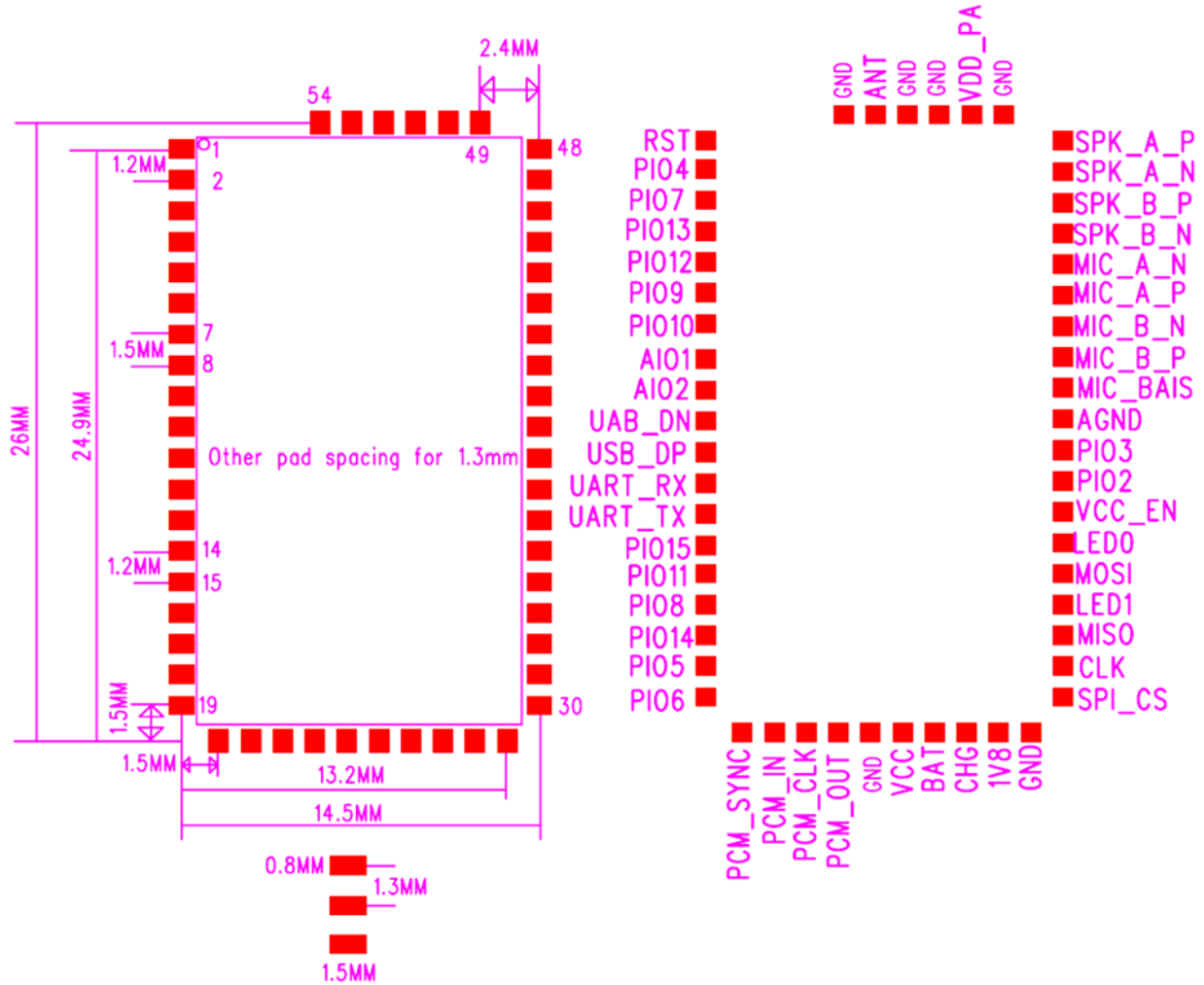
<b>DRAWN BY :</b>	ZengHuiWen		<b>MODEL :</b> DK-208M
<b>CHECKED BY :</b>	LinDa		<b>DESCRIPTION :</b> BC05 +16M Flash +EDR MODULE
<b>APPD. BY:</b>	Zed Zeng		<b>REV :</b> 2.0



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1. Product Photo



**14.5 X 26 X2.2(MM)**





- Standard HCI(UART or USB)
- UART interface with programmable baud rate
- Basic module without antenna
- Basic module as SMD type
- With Audio Out & Audio in
- Package option
  - Edge connector

### 3. Summary of Benefit

- Complete Bluetooth Solution
  - Complete 2.4GHz radio transceiver and baseband
  - CSR Bluecore 05- BT MultiMedia, single chip bluetooth system with CMOS technology
  - Adaptive frequency hopping feature (AFH)
  - Smallest footprint, 26mmX14.5mm
  - Simplify overall design/development cycle
  - Full speed Class 1 bluetooth operation
- Low power standby modes to enable high efficient power management
- High performance radio transceiver
- Low overall system cost

#### Application5:Applications:

- **High Quality Stereo Wireless Headsets**
- **High Quality mono Headsets**
- **Wireless Speakers**
- **Automotive Hands-Free Kits**
- **Handsfree headset**
- **VOIP Handsets**
- **Analogue Bluetooth Sound Box**
- **USB Multimedia Dongles**
- **Bluetooth-Enabled Automotive Wireless Gateways**
  
- Software
  - Support CSR bluetooth stack
  - Design for Client



#### 4. Device Terminal Function

PINNAME	PIN #	Pad type	Description	Note
GND	24.29.49 .51.52.5 4	VSS	Ground pot	
AGND	39	VSS	Ground conection for audio	
1.8V	28	VDD1.8V	Integrated 1.8V (+) supply with On-chip output within 1.7-1.9V	
VDD_PA	50	PA Supply	External 3.0V supply for PA	
VCC	25	VDD3.0V	External 3.0V supply for Bluetooth Chip	
BATT	26	Battery terminal+ve	Lithium ion/polymer battery positive terminal.	
CHG	27	Charger input	Lithium ion/polymer battery charger input	
VREN	36	Analogue	High-voltage linear regulator and switch-mode regulator	
AIO1	8	Bi-Directional	Programmable input/output line	
AIO2	9	Bi-Directional	Programmable input/output line	
PIO2	37	Bi-Directional	Programmable input/output line	
PIO3	38	Bi-Directional	Programmable input/output line	
PIO4	2	Bi-Directional	Programmable input/output line	
PIO5	18	Bi-Directional	Programmable input/output line	
PIO6	19	Bi-Directional	Programmable input/output line	
PIO7	3	Bi-Directional	Programmable input/output line	
PIO8	16	Bi-Directional	Programmable input/output line	

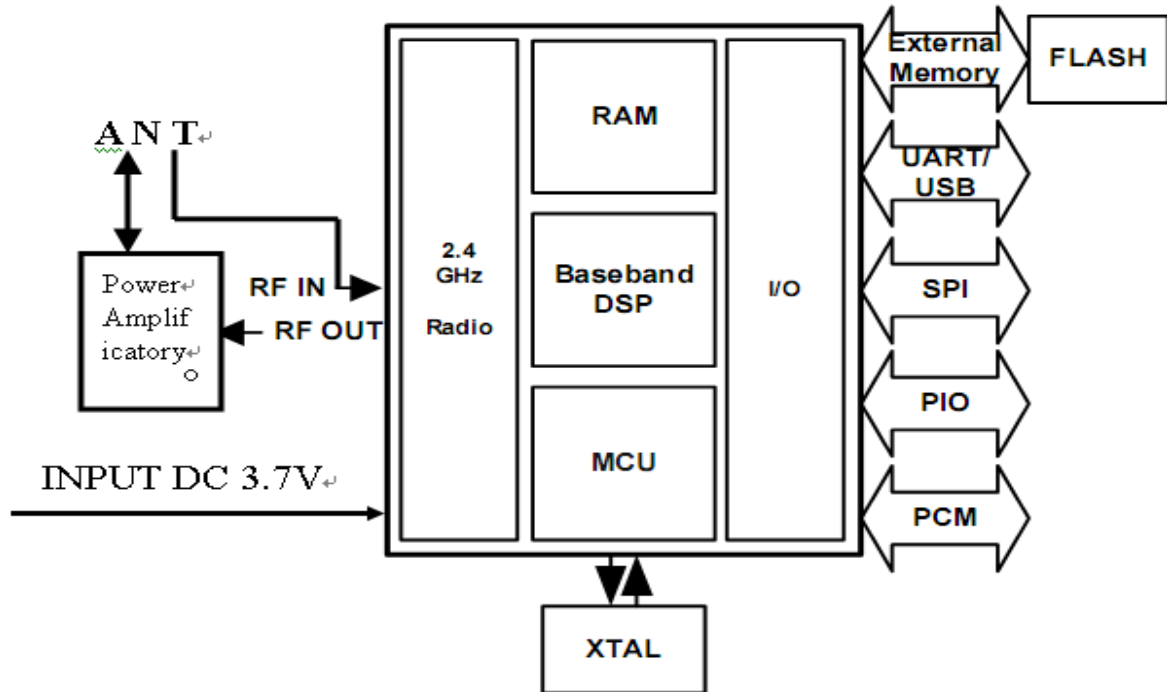


<b>PIO9</b>	<b>6</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>PIO10</b>	<b>7</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>PIO11</b>	<b>15</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>PIO12</b>	<b>5</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>PIO13</b>	<b>4</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>PIO14</b>	<b>17</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>PIO15</b>	<b>14</b>	<b>Bi-Directional</b>	<b>Programmable input/output line</b>	
<b>RST</b>	<b>1</b>	<b>CMOS Input with weak internal pull-down</b>	<b>RESET</b>	
<b>USP_DN</b>	<b>10</b>	<b>Bi-directional</b>	<b>USB data plus with selectable internal 1.5K ohm pull-pu resistor</b>	
<b>USP_DP</b>	<b>11</b>	<b>Bi-directional</b>	<b>USB data minus</b>	
<b>UART_RX</b>	<b>12</b>	<b>CMOS input with weak internal pull-down</b>	<b>UART Data input</b>	
<b>UART_TX</b>	<b>13</b>	<b>CMOS output, Tri-stable with weak internal pull-up</b>	<b>UART Data output</b>	
<b>SPI_MOSI</b>	<b>34</b>	<b>CMOS input with weak internal pull-down</b>	<b>Serial peripheral interface data input</b>	
<b>SPI_CSB</b>	<b>30</b>	<b>CMOS input with weak internal pull-up</b>	<b>Chip select for serial peripheral interface, active low</b>	
<b>SPI_CLK</b>	<b>31</b>	<b>CMOS input with weak internal pull-down</b>	<b>Serial peripheral interface clock</b>	
<b>SPI_MISO</b>	<b>32</b>	<b>CMOS input with weak internal pull-down</b>	<b>Serial peripheral interface data Output</b>	



<b>MIC_A_P</b>	<b>43</b>	<b>Analogue input</b>	<b>Microphone input L positive pot</b>	<b>Microphone Left Positive</b>
<b>MIC_A-N</b>	<b>44</b>	<b>Analogue input</b>	<b>Microphone input L negative pot</b>	<b>Microphone Left Negative</b>
<b>MIC_B_P</b>	<b>41</b>	<b>Analogue input</b>	<b>Microphone input R positive pot</b>	<b>Microphone Right Positive</b>
<b>MIC_B_N</b>	<b>42</b>	<b>Analogue input</b>	<b>Microphone input R negative pot</b>	<b>Microphone Right Negative</b>
<b>SPK_A_P</b>	<b>48</b>	<b>Analogue output</b>	<b>Speaker output L negative</b>	<b>Left Negative</b>
<b>SPK_A_N</b>	<b>47</b>	<b>Analogue output</b>	<b>Speaker output L positive</b>	<b>Left Positive</b>
<b>SPK_B_P</b>	<b>46</b>	<b>Analogue output</b>	<b>Speaker output Rnegative</b>	<b>Right Negative</b>
<b>SPK_B_N</b>	<b>45</b>	<b>Analogue output</b>	<b>Speaker output R positive</b>	<b>Right Positive</b>
<b>PCM_IN</b>	<b>21</b>		<b>Synchronous PCM data input</b>	
<b>PCM_SYNC</b>	<b>20</b>		<b>Synchronous PCM data strobe</b>	
<b>PCM_CLK</b>	<b>22</b>		<b>Synchronous PCM data clock</b>	
<b>PCM_OUT</b>	<b>23</b>		<b>Synchronous PCM data output</b>	
<b>ANT</b>	<b>53</b>	<b>Analogue</b>	<b>RF In/Out</b>	
<b>LED0</b>	<b>35</b>	<b>Open drain output</b>	<b>LED driver</b>	
<b>LED1</b>	<b>33</b>	<b>Open drain output</b>	<b>LED driver</b>	
<b>MIC_BAIS</b>	<b>40</b>	<b>Analogue</b>	<b>Microphone bia</b>	

### 5. Block Diagram



**System Architecture**

### 6. Electrical Specification:

- Eecommended Operating condition

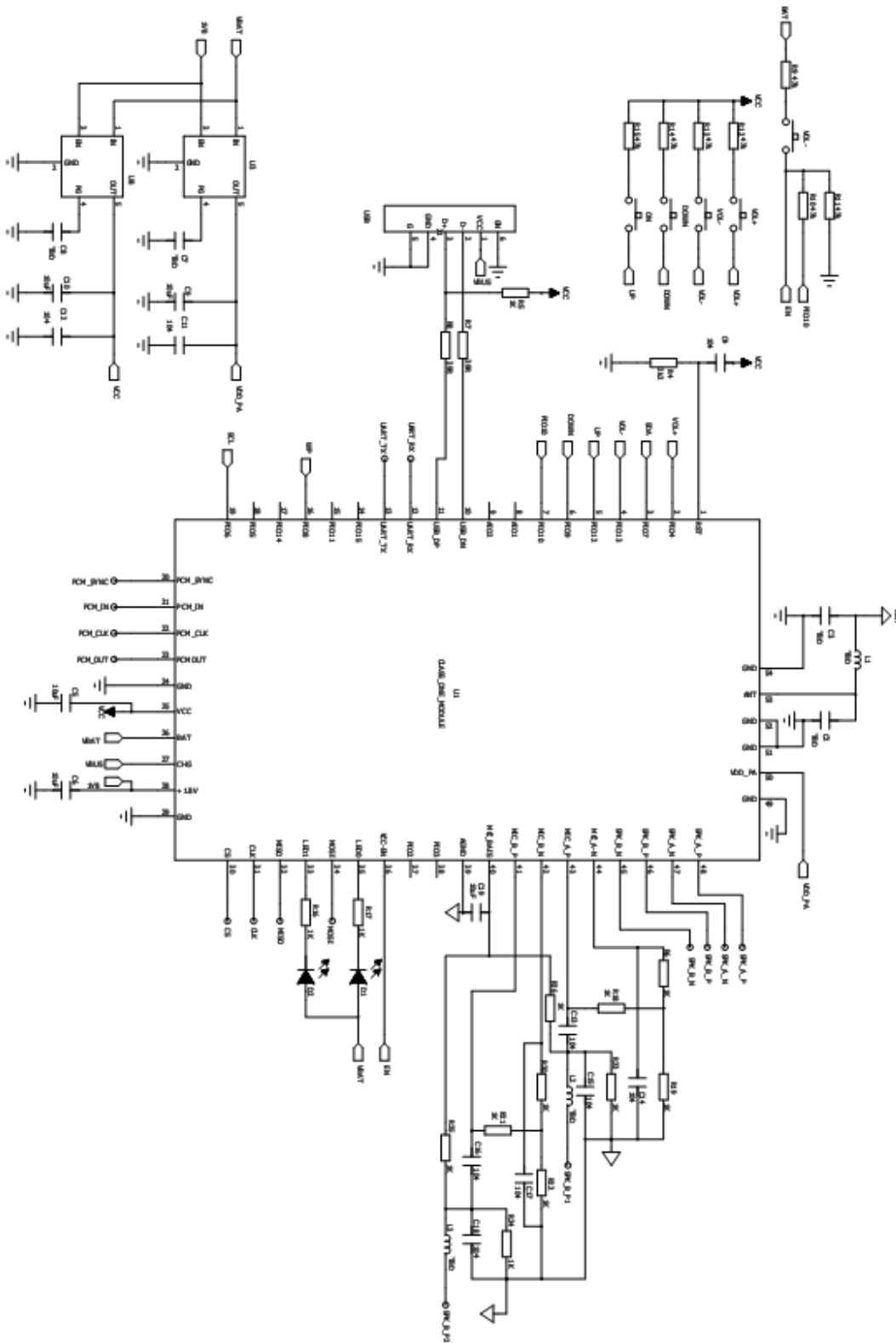
Operating Condition	Min	Max
Operating temperature range	-20°C	+75°C
Guaranteed RF performance range(a)	-20°C	+75°C
Supply voltage: VDD_RADIO, VDD_VCO, VDD_ANA and VDD_CORE	1.7V	1.9V
Supply voltage: VDD_PADS, VDD_PIO, VDD_MEM and VDD_USB	1.7V	3.6V
Supply voltage: VREG_IN	3.0V	4.2V(b)
Supply voltage: BAT_P	3.0V	4.2V
Supply voltage: V_CHG	4.35V	6.5V



Radio Characteristics	VDD = 1.8V		Temperature = +20°C		
	Min	Typ	Max	Bluetooth Specification	Unit
Maximum RF transmit power <sup>(a)</sup> (b)	-	15	-	14 < & < 20	dBm
RF power variation over temperature range with compensation enabled <sup>(±)</sup> (d)	-	15	-	-	dB
RF power variation over temperature range with compensation disabled <sup>(±)</sup>	-	-	-	-	dB
RF power control range	-	35	-	≥16	dB
RF power range control resolution <sup>(e)</sup>	-	0.5	-	-	dB
20dB bandwidth for modulated carrier	-	780	-	≤1000	kHz
Adjacent channel transmit power F = F <sub>0</sub> ± 2MHz <sup>(f)</sup> (g)	-	-40	-	≤-20	dBm
Adjacent channel transmit power F = F <sub>0</sub> ± 3MHz	-	-45	-	≤-40	dBm
Adjacent channel transmit power F = F <sub>0</sub> ± > 3MHz	-	-50	-	≤-40	dBm
Δf <sub>avg</sub> Maximum Modulation	-	165	-	140 < f <sub>avg</sub> < 175	kHz
Δf <sub>max</sub> Minimum Modulation	-	150	-	≥115	kHz
Δf <sub>avg</sub> /Δf <sub>max</sub>	-	0.97	-	≥0.80	-
Initial carrier frequency tolerance	-	6	-	±75	kHz
Drift Rate	-	8	-	≤20	kHz/50μs
Drift (single slot packet)	-	7	-	≤25	kHz
Drift (five slot packet)	-	9	-	≤40	kHz
2 <sup>nd</sup> Harmonic Content	-	-65	-	≤-30	dBm
3 <sup>rd</sup> Harmonic Content	-	-45	-	≤-30	dBm



7. Schematic Diagram(For reference purposes only)



8. Testing Block Diagram

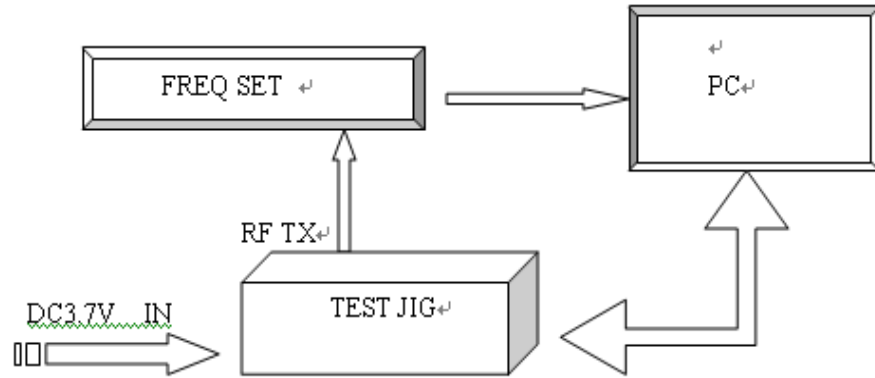


Fig 1 Programming and Freq. Alignment Test Procedure

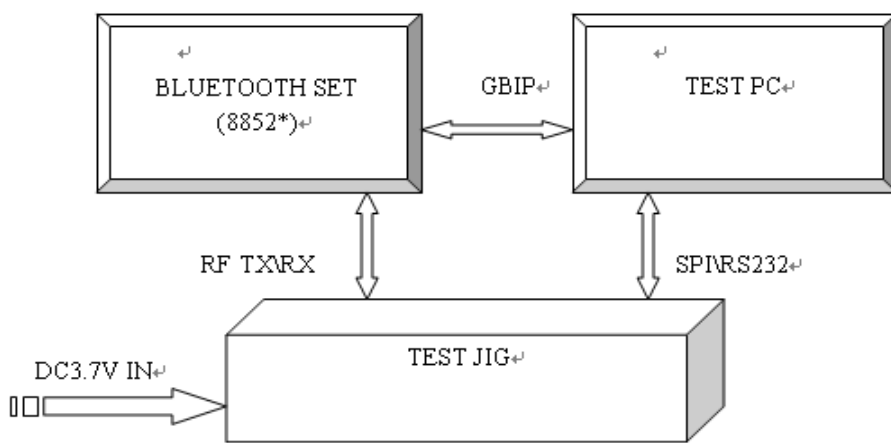
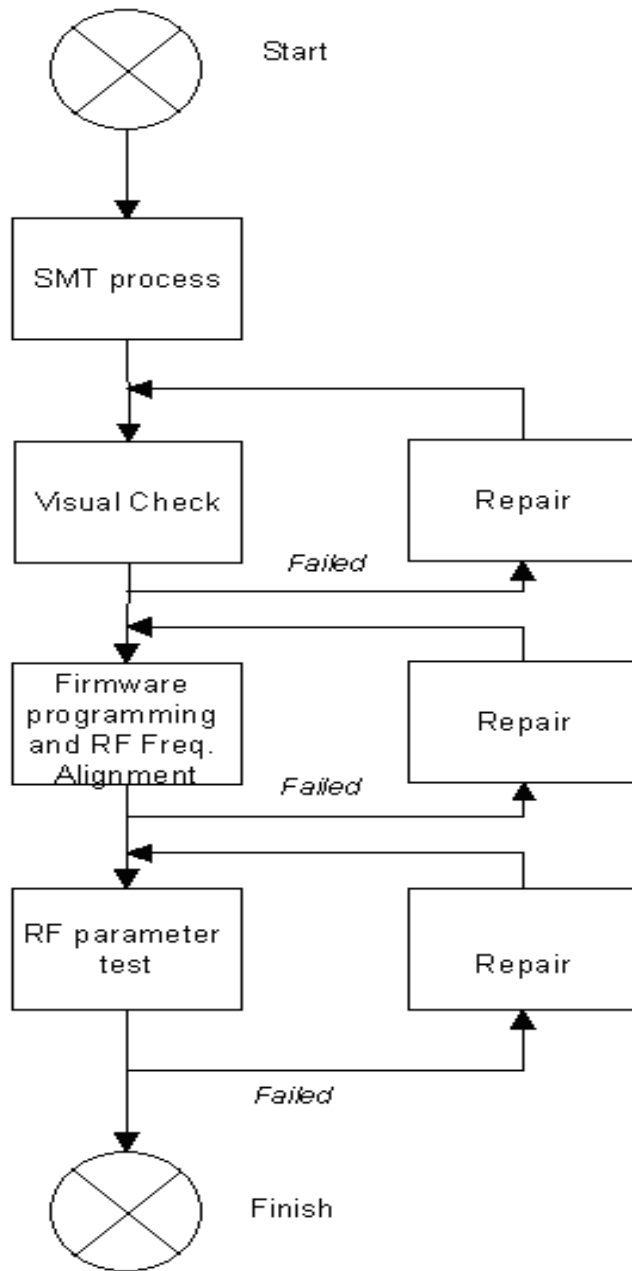


Fig 2 RF Parameter Test procedure



**Fig 3 Assemble/Alignment/Testing Flow Chart**