



1900MHz Digital Low Tier Wireless Telephone Terminal Equipment Technical Specifications

NATIONAL COMMUNICATIONS COMMISSION



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1. Scope

1.1 Accordance

The specification is issued pursuant to Paragraph 1 of Article 42 of the Telecommunications Act and Paragraph 2 of Article 4 of the Compliance Approval Regulations of Telecommunications Terminal Equipment.

1.2 Application Scope

This specification applies to digital low tier wireless telephone terminal Equipment within the operating frequency range of 1905 to 1915MHz.

1.3 Technical standards

These specifications are promulgated adhering to Chinese National Standards CNS13438, CNS14336-1, CNS14958-1, CNS14959, CNS15285 and other international technical standards as reference.



2. Testing items and eligibility criteria

2.1 Narrowband Access System (for required test items and output RF

spectrum figure refer to Attachment 1) .

2.2 Broadband Access System (for required test items and spurious

emissions limitations refer to Attachment 2) .

3. Specified documents

Applicants shall provide documents as specified by the National Communications Commission (Attachment 3)

Attachment 1

Narrowband Access System required test items

Items	Test items	Conformance requirement	Test result	Compliance
1	Frequency Range	1905 ~1915 MHz		
2	Maximum transmitter output power	10mW		
3	Transmitter frequency stability	±3ppm		
4	Channel spacing	300kHz		
5	Spurious emissions	Within band (1895~1918.1MHz): $\leq 250\text{nW}$ Outside band (exclude 1895~1918.1MHz) $\leq 2.5 \mu\text{W}$		
6	Adjacent channel power	Carrier center frequency±600KHz detuned: $\leq 800\text{nW}$ Carrier center frequency±900KHz detuned: $\leq 250\text{nW}$ Output RF spectrum is as Figure 1		
7	Connecting Interface on Mobile Phone	(1)Electrical requirement shall comply with A4.2.3.1 of CNS15285 (2)Complying with the following provisions of (A) or (B) : (A)Socket on mobile phone shall comply		



		<p>with micro-B or micro-AB in Annex A of CNS15285</p> <p>Plug to socket on mobile phone in connection cord set for charging shall comply with micro-B in Annex A of CNS15285, Contact 1 is V_{BUS} and Contact 5 is GND in the connecting interface</p> <p>(B) If the Socket on mobile phone does not comply with Provision (A), a specific connecting plug in connection cord set for charging or the adapter between micro-B plug and the socket on mobile phone shall be adopted.</p> <p>(3) Complying with the following provisions of (A) or submitting the test report provided in (B) :</p> <p>(A) The insulating material of connecting interface: at minimum class V-2 material</p> <p>(B) The test report shall comply with the technical specifications of USB-IF (Universal Serial Bus Implementers Forum) and shall include the item in (A)</p>		
8	Connecting Interface on Charger	<p>(1) Socket on Charger and Plug to socket on Charger in connection cord set for charging shall comply with STD-A in Annex A of CNS15285</p> <p>Electrical Requirement shall comply with A4.2.3.2 of CNS15285</p> <p>(2) Complying with the following provisions of (A) or submitting the test report provided in (B):</p> <p>(A) Mechanism Requirement shall comply with A4.2.2 of CNS15285</p> <p>Insulating Resistance shall comply with A4.2.3.3 of CNS15285</p> <p>Insulating Voltage shall comply with A4.2.3.4 of CNS15285</p> <p>Low Level Contact Resistance: complying with A4.2.3.5 of CNS15285</p> <p>Contact Capacitance shall comply with A4.2.3.6 of CNS15285</p> <p>Insulating material of connecting interface: at minimum class V-2 material</p> <p>(B) The test report shall comply with the technical specifications of USB-IF and shall include the items in (A)</p>		
9	Connection Cord for	<p>(1) Contact 1 is V_{BUS} and Contact 4 is GND in the connecting interface STD-A</p> <p>(2) Complying with the following provisions of</p>		



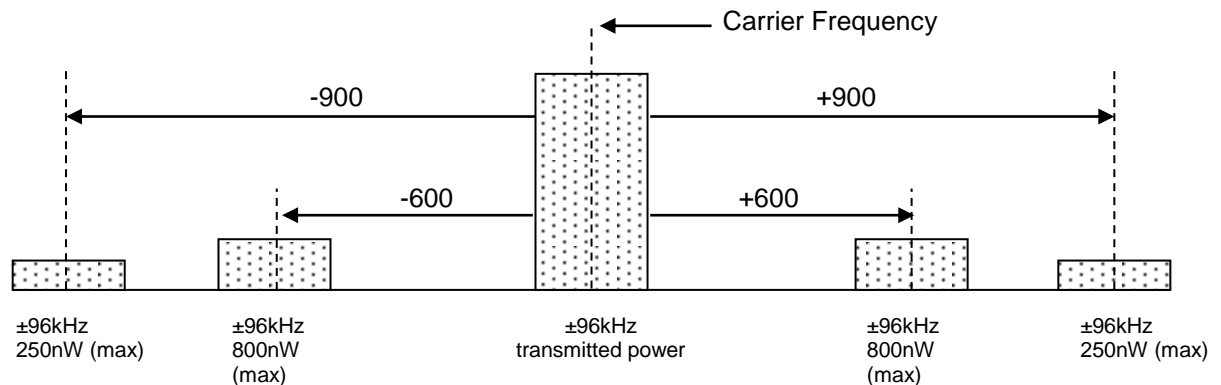
	Charging	(A) or submitting the test report provided in (B): (A) Electrical Requirement: Voltage Drop shall comply with A4.3.3.2 of CNS15285 Cable Flex shall comply with A4.3.6 of CNS15285 4-Axis Continuity shall comply with A4.3.7 of CNS15285 Maximum Resistance of Wire shall not exceed 0.232Ω/m Fireproofing Class of Connection Cord for Charge shall be at minimum class VW-1 (B) The test report shall comply with the technical specifications of USB-IF and shall include the items in (A)		
10	Electrical Requirements for Charger	(1)Input Electricity: complying with 4.3 and 4.4 of CNS15285 (2)Output Voltage: 5Vdc, and allowable error is $\pm 5\%$. Check viability of complying with the above requirement by the experiment provided in 5.4 of CNS15285. (3)Output Electricity shall comply with the provisions from 4.6 to 4.9 of CNS15285. (4)Inverse Current shall comply with 4.10 of CNS15285. (5)Consumption Power without Load: complying with 4.11 of CNS15285. (6)Average Efficiency shall comply with 4.12 of CNS15285.		
11	Electromagnetic compatibility	CNS13438		
12	Electrical safety	CNS14336-1		

Note:

In order to obtain type approval, the Mobile Phone Handset (hereinafter as Handset) shall be submitted with both the charger and connection cord set for charging and shall comply with the items 7 to 12. A charger and connection cord set for charging that have been type-approved with a Handset shall not be required to be inspected as per items 8 to 10 when submitting Certificate and Test report of the Handset. A Mobile Phone that is not a Handset shall not be inspected per items 7 to 10.



Figure 1 Output RF spectrum



Attachment 2: Required items for testing of Broadband Access System

Items	Test items	Conformance requirement	Test result	Compliance
1	Frequency Range	1905 ~1915 MHz		
2	Maximum transmitter output power	(1)Antenna gain $\leq 20\text{dBi}$, $P_{MS} \leq 200 \text{ mW}$ (2) $20\text{dBi} < \text{antenna gain} \leq 23\text{dBi}$, $P_{MS} \leq 100 \text{ mW}$ (3) $23\text{dBi} < \text{antenna gain} \leq 25\text{dBi}$, $P_{MS} \leq 63 \text{ mW}$		
3	Transmitter frequency stability	$\pm 3\text{ppm}$		
4	Channel spacing	5kHz or 10kHz		
5	Spurious emissions	(1) 5MHz channel bandwidth; the frequency bands out of 12.5MHz center frequency shall comply with Table 1 (2) 10MHz channel bandwidth; the band is out of 25MHz center frequency shall comply with Table 1		
6	Adjacent channel power	(1)5MHz channel bandwidth frequency bands, between Carrier center frequency $5\text{MHz} \pm 2.5\text{MHz}$: $\leq 2\text{dBm}$. ; between Carrier center frequency $7.5\text{MHz} \sim 12.5\text{MHz}$: $\leq -10\text{dBm/MHz}$. (2)10MHz channel bandwidth frequency bands, between Carrier center frequency $10\text{MHz} \pm 5\text{MHz}$: $\leq 2\text{dBm}$. ; between Carrier center frequency $15\text{MHz} \sim 20\text{MHz}$: $\leq -25\text{dBm/MHz}$. ; between Carrier center frequency $20\text{MHz} \sim 25\text{MHz}$: $\leq -30\text{dBm/MHz}$.		
7	Connecting Interface on Mobile Phone	(1)Electrical requirement : shall comply with A4.2.3.1 of CNS15285 (2)Complying with the following provisions of (A) or (B) : (A)Socket on mobile phoneshall comply with micro-B or micro-AB in Annex A of CNS15285 Plug to socket on mobile phone in connection cord set for charge shall		



		<p>comply with micro-B in Annex A of CNS15285, Contact 1 is V_{BUS} and Contact 5 is GND in the connecting interface</p> <p>(B) If the socket on mobile phone does not comply with Provision (A), specific connecting plug in connection cord set for charge or the adapter between micro-B plug and the socket on mobile phone shall be adopted.</p> <p>(3) Complying with the following provisions of (A) or submitting the test report provided in (B) :</p> <p>(A) The insulating material of connecting interface shall be minimum class V-2 material.</p> <p>(B) The test report shall comply with the technical specifications of USB-IF (Universal Serial Bus Implementers Forum) and shall include the item in (A)</p>		
8	Connecting Interface on Charger	<p>(1) Socket on Charger and Plug to socket on Charger in connection cord set for charge shall comply with STD-A in Annex A of CNS15285</p> <p>Electrical Requirement shall comply with A4.2.3.2 of CNS15285</p> <p>(2) Complying with the following provisions of (A) or submitting the test report provided in (B):</p> <p>(A) Mechanism Requirement shall comply with A4.2.2 of CNS15285</p> <p>Insulating Resistance shall comply with A4.2.3.3 of CNS15285</p> <p>Insulating Voltage shall comply with A4.2.3.4 of CNS15285</p> <p>Low Level Contact Resistance: complying with A4.2.3.5 of CNS15285</p> <p>Contact Capacitance shall comply with A4.2.3.6 of CNS15285</p> <p>Insulating material of connecting interface shall be minimum class V-2 material</p> <p>(B) The test report complying with the technical specifications of USB-IF shall include the items in (A)</p>		
9	Connection Cord for Charging	<p>(1) Contact 1 is V_{BUS} and Contact 4 is GND in the connecting interface STD-A</p> <p>(2) Complying with the following provisions of (A) or submitting the test report provided in (B):</p> <p>(A) Electrical Requirement:</p> <p>Voltage Drop shall comply with A4.3.3.2 of CNS15285</p> <p>Cable Flex shall comply with A4.3.6 of CNS15285</p> <p>4-Axis Continuity shall comply with</p>		



		A4.3.7 of CNS15285 Maximum Resistance of Wire shall not exceed 0.232Ω/m Fireproofing Class of Connection Cord for Charge shall be minimum class VW-1 (B) The test report shall comply with the technical specifications of USB-IF and shall include the items in (A)		
10	Electrical Requirements for Charger	(1)Input Electricity shall comply with 4.3 and 4.4 of CNS15285 (2)Output Voltage: 5Vdc, and allowable error is ±5%. Check viability of complying with the above requirement by the experiment provided in 5.4 of CNS15285. (3)Output Electricity shall comply with the provisions from 4.6 to 4.9 of CNS15285. (4)Inverse Current shall comply with 4.10 of CNS15285. (5)Consumption Power without Load shall comply with 4.11 of CNS15285. (6)Average Efficiency shall comply with 4.12 of CNS15285.		
11	Electromagnetic compatibility	CNS13438		
12	Electrical safety	CNS14336-1		

Note :

In order to obtain type approval, the Mobile Phone Handset (hereinafter as Handset) shall be submitted with both the charger and connection cord set for charging and shall comply with the items 7 to 12. A charger and connection cord set for charging that have been type-approved with a Handset shall not be required to be inspected as per items 8 to 10 when submitting Certificate and Test report of the Handset. A Mobile Phone that is not a Handset shall not be inspected per items 7 to 10.



Table 1: Spurious emissions limitation

Frequency	Limitation
$9\text{kHz} \leq f < 150\text{kHz}$	average power $\leq -13\text{dBm/kHz}$
$150\text{kHz} \leq f < 30\text{MHz}$	average power $\leq -13\text{dBm/10kHz}$
$30\text{MHz} \leq f < 1000\text{MHz}$	average power $\leq -13\text{dBm/100kHz}$
$1000\text{MHz} \leq f < 2505\text{MHz}$	average power $\leq -13\text{dBm/MHz}$
$2505\text{MHz} \leq f < 2530\text{MHz}$	MS antenna gain $\leq 4\text{dBi}$, average power $\leq -30\text{dBm/MHz}$ $4\text{dBi} < \text{MS antenna gain} \leq 10\text{dBi}$, average power $\leq -70\text{dBm/MHz}$ MS antenna gain $> 10\text{dBi}$, average power $\leq -68\text{dBm/MHz}$
$2530\text{MHz} \leq f < 2535\text{MHz}$	MS antenna gain $\leq 4\text{dBi}$, average power $\leq -25\text{dBm/MHz}$ $4\text{dBi} < \text{MS antenna gain} \leq 10\text{dBi}$, average power $\leq -70\text{dBm/MHz}$ MS antenna gain $> 10\text{dBi}$, average power $\leq -68\text{dBm/MHz}$
$2535\text{MHz} \leq f < 2630\text{MHz}$	average power $\leq -30\text{dBm/MHz}$
$2630\text{MHz} \leq f < 2640\text{MHz}$	average power $\leq -20-(F-2630)\text{dBm/MHz}$ Note : F is within the range of left column
$2640\text{MHz} \leq f < 2655\text{MHz}$	average power $\leq -30\text{dBm/MHz}$
$f \geq 2655\text{MHz}$	average power $\leq -13\text{dBm/MHz}$



Attachment 3: Specified documents

Item	Content	Conformance requirement	Note
1	SAR limits (hand-held only)	Shall comply with the SAR limit for partial body (any part of the head and surrounding area), 2.0 W/Kg(10g).	The applicant shall provide a test report and test data.
2	RF Exposure Warning Label	Warning: "For Reducing RF Influence, Use Properly " Method of Labeling: Label on UE, carton and user manual.	The applicant shall provide a guarantee when the user manual is an English version only.
3	SAR Label	SAR label content: SAR limit 2.0 W/Kg; testing value: W/Kg Labeling method: Label on UE, carton and user manual.	The applicant shall provide a guarantee.

Note :

1. The documents specified by NCC mentioned above are regulated in compliance with Article 10.1.7 and Article 12.1.7 of Compliance Approval Regulations of Telecommunications Terminal Equipment.
2. Procedures of SAR are in accordance with CNS 14958-1: human exposure to radio frequency fields from hand-held and body-mounted wireless communications devices – human models, instrumentation, and procedures – Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices shall be used in close proximity to the ear (frequency range of 300 MHz to 3 GHz).