

भारतीय मानक
Indian Standard

IS 16333 (Part 3) : 2022

मोबाइल फोन हैंडसेट

भाग 3 मोबाइल फोन हैंडसेट
के लिए भारतीय भाषा समर्थन — विशिष्ट अपेक्षाएँ
(दूसरा पुनरीक्षण)

Mobile Phone Handsets

Part 3 Indian Language Support
for Mobile Phone Handsets — Specific Requirements
(Second Revision)

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FOREWORD

This Indian Standard (Part 3) (Second revision) was adopted by Bureau of Indian Standards, after the draft finalized by the Interconnection and Information Exchange Among IT Equipment and Systems Sectional Committee had been approved by the Electronics and Information Technology Division Council.

In India, the communications broadcasted by Government (state or central) and other entities in many occasions (like emergency situations or bulk SMS to subscribers/customers from banks and treasuries etc) for all or select citizens, are mostly sent in English or in Hindi. However, most of the citizen are more comfortable and would prefer such communications in their local/regional language. The lack of text inputting/display facility in local/regional languages in mobile phones was creating the communication barrier. This Indian Standard was, therefore, developed keeping the idea that the citizen should be able to send and receive messages (communications) at least in one of the officially recognized Indian language of their choice.

The standard is set to leverage the strength of mobile penetration in the country for transmitting the text message to the citizens in their regional language, particularly in hours of disaster management.

This standard was originally published in 2016 based on the request from Ministry of Electronics and Information Technology (MeitY) (erstwhile DeitY).

The first revision incorporated Amendment 1 to IS 16333 (Part 3) : 2016 and was done to take care of the limitations of various types of mobile phones in implementing character sets of various Indian languages. The second revision has been undertaken to ease the process of verifying compliance to text-input and display function capability of Indian languages, based on the experience of manufactures and testing laboratories during the implementation of the standard.

The major modifications incorporated in this revision are:

- Provision of choosing keyboard layout of manufacturers choice for inputting various Indian Languages has been added as Note 4 under clause 5; and
- Modifications in optional and mandatory characters in the Annex B (optional requirements) are given below.

The following characters have been added in Annex B (optional requirements) .

Character	Language
09F7	Bangla (Table B.2), Assamese (Table B.1), Manipuri (Bengali) (Table B.12)
09DC,09DD,09DF	Bangla (Table B.2), Assamese (Table B.1), Manipuri (Bengali) (Table B.12)
0C01, 0C0C, 0C62	Telugu (Table B.21)
0B82, 0BD0, 0BF0, 0BF1, 0BF2, 0BF3, 0BF4, 0BF5	Tamil (Table B.20)
0D3A, 0D3D, 0D70, 0D71, 0D72, 0D73, 0D74, 0D75, 0D79, 0D0C, 0D60, 0D61, 0D62, 0D63, 0D57	Malayalam (Table B.11)
0A03, 0A59, 0A5A, 0A5B, 0A5E, 0A33, 0A36, 0A72, 0A73	Punjabi (Table B.16)
0B0C, 0B44, 0B60, 0B61, 0B62, 0B63	Odia (Table B.15)
0CBC, 0CB1, 0CE0, 0CC4, 0CDE	Kannada (Table B.7)

The following characters are made mandatory and have been removed from Annex B (optional requirements) as it was observed that these characters are used frequently:

- 20B9 from every language in Annex B;
- 02BC in Assamese Language (Table B.1); and
- 0965 in Bangla language (Table B.2).

This Indian Standard is published in three parts. The other parts in this series are:

Part 1 Safety requirements

Part 2 Performance requirements (*under consideration*)

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Indian Standard

MOBILE PHONE HANDSETS

PART 3 INDIAN LANGUAGE SUPPORT FOR MOBILE PHONE HANDSETS — SPECIFIC REQUIREMENTS

(*Second Revision*)

1 SCOPE

This standard (Part 3) defines the requirements for mobile phone handsets for inputting of text in English, Hindi and at least one additional Indian official language along with facility of message readability for all 22 Indian official languages.

2 REFERENCES

The standard given below contains provisions, which through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed as follows:

<i>IS No.</i>	<i>Title</i>
16333 (Part 1) : 2015	Mobile phone handsets: Part 1 Safety requirements
16350 : 2016	Enhanced in script key board layout.

3 TERMS AND DEFINITIONS

For the purpose of this standard, the definitions given in IS 16333 (Part 1) and the following shall apply.

3.1 Indian Official Languages — The Constitution of India designates a bilingual approach for official language of the Government of India employing usage of Hindi written in the Devanagari script, as well as English. Hindi and English find everyday use for important official purposes, such as parliamentary proceedings, judiciary, communications between the Central Government and the State Government. States within India have the liberty and powers to specify their own official language(s) through legislation and presently there are 22 Indian official languages namely, Assamese, Bengali, Bodo, Dogri, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Maithili, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Santhali, Tamil, Telugu and Urdu as given in the eighth schedule of Indian constitution.

3.2 Third Indian Language — Any of the officially recognized Indian language except English and Hindi.

4 REQUIREMENTS

The mobile phone handsets shall have inbuilt capability to support the Indian official languages for this purpose.

4.1 The mobile phone handsets shall have facility for inputting of text in English, Hindi and at least one additional Indian official language. The third language that is to be supported by mobile phone handsets shall be decided by phone manufacturer/supplier.

4.2 Message readability in the mobile phone handsets shall be provided for all 22 Indian official languages and English.

5 TESTS

5.1 The requirement of inputting of text given under **4.1** shall be verified by inputting of all the characters:

- In English, as per Annex A in the mobile phone handsets.
- In Hindi and in the additional (third) Indian official language declared by the manufacturer, as given in IS 16350 in the mobile phone handsets. Out of all the characters specified in IS 16350, characters corresponding to the code points mentioned in Annex B are optional.

5.2 The requirement of message readability as given under **4.2** shall be verified by sending the text from some other device, by inputting all the characters:

- In English, as per Annex A and display of the same on the mobile phone handsets at the receiving end.
- In all the 22 Indian official languages, as given in IS 16350 and display of the same on the mobile phone handsets at the receiving end.

NOTES

1 The shapes of the reference glyphs used in the code point charts given in IS 16350 are not prescriptive (are only representative). Considerable variation (in shape and proportion) is to be expected in actual fonts as manufacturers and font designers may use different fonts.

2 If the presentation of characters displayed on mobile phones are different from that of the characters displayed in IS 16350 due to font variation, then the manufacturer shall provide a comparison chart for the variations at the time of testing.

3 Characters mentioned in Annex C shall be Represented (in storage) by normalized form mentioned in Annex C.

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4 The facility for inputting of text in English, Hindi and one additional Indian official language are not restricted to any particular keyboard layout or input mechanism. When the corresponding glyph of a code-point defined in this standard is not on the physical/virtual keyboard layout, then the manufacturer/solution provider shall provide instructions on how to input that code-point.

6 MARKING

Each mobile phone handsets shall be packed with an instruction manual to furnish the following information in addition to the information given in **5.1** of IS 16333 (Part 1).

6.1 The Indian official languages that the mobile phone handset is capable of sending the text in.

6.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

ANNEX A

(Clauses 5.1 and 5.2)

BASIC LATIN LANGUAGE: ENGLISH

	002	003	004	005	006	007
0		0	@	P	`	p
1	!	1	A	Q	a	q
2	"	2	B	R	b	r
3	#	3	C	S	c	s
4	\$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	'	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	\	l	
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	

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ANNEX B

(Clause 5.1)

(Optional Requirements)

Table B-1 Language : Assamese

Sl No.	Code Point
1.	098C
2.	09C4
3.	09E0
4.	09E1
5.	09E2
6.	09E3
7.	09F2
8.	09F3
9.	09F4
10.	09F5
11.	09F6
12.	09F8
13.	09F9
14.	200D
15.	0965
16.	09F7
17.	09DC
18.	09DD
19.	09DF

Table B-2 Language : Bangla

Sl No.	Code Point
1.	098C
2.	09E0
3.	09E1
4.	09E2
5.	09E3
6.	09F2
7.	09F4
8.	09F5
9.	09F6
10.	09F8
11.	09F9
12.	09FB
13.	200D
14.	02BC
15.	09F7
16.	09DC
17.	09DD
18.	09DF

Table B-3 Language : Bodo

Sl No.	Code Point
1.	0933
2.	090C
3.	0944
4.	0960
5.	0961
6.	0962
7.	0963
8.	0970
9.	200D

Table B-4 Language : Dogri

Sl No.	Code Point
1.	090C
2.	0944
3.	0960
4.	0961
5.	0962
6.	0963
7.	200D

Table B-5 Language : Gujarati

Sl No.	Code Point
1.	0A8C
2.	0AC4
3.	0AD0
4.	0AE0
5.	0AE1
6.	0AE2
7.	0AE3
8.	0AF0
9.	200D
10.	0965

Table B-6 Language : Hindi

Sl No.	Code Point
1.	0933
2.	0944
3.	090C
4.	0960
5.	0961
6.	0962
7.	0963
8.	0970
9.	200D

Table B-7 Language : Kannada

Sl No.	Code Point
1.	0C8C
2.	0CE1
3.	0CE2
4.	0CE3
5.	0CF1
6.	0CF2
7.	200D
8.	0965
9.	0CBC
10.	0CB1
11.	0CE0
12.	0CC4
13.	0CDE

Table B-8 Language : Kashmiri

Sl No.	Code Point
1.	0944
2.	0960

Table B-9 Language : Konkani

Sl No.	Code Point
1.	0960
2.	0961
3.	0963
4.	0970
5.	0944
6.	200D

Table B-10 Language : Maithili

Sl No.	Code Point
1.	090C
2.	0944
3.	0960
4.	0961
5.	0962
6.	0963
7.	200D
8.	02BC

Table B-11 Language : Malayalam

Sl No.	Code Point
1.	200D
2.	0D0C
3.	0D3A
4.	0D3D
5.	0D57
6.	0D60
7.	0D61
8.	0D62
9.	0D63
10.	0D70
11.	0D71
12.	0D72
13.	0D73
14.	0D74
15.	0D75
16.	0D79

Table B-12 Language : Manipuri (Bengali)

Sl No.	Code Point
1.	098C
2.	09BD
3.	09C4
4.	09E0
5.	09E1
6.	09E2
7.	09E3
8.	09F2
9.	09F3
10.	09F4
11.	09F5
12.	09F6
13.	09F8
14.	09F9
15.	200D
16.	0965
17.	09F7
18.	09DC
19.	09DD
20.	09DF

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Table B-13 Language : Marathi

Sl No.	Code Point
1.	093D
2.	0944
3.	0960
4.	0961
5.	0963
6.	0970
7.	090C
8.	200D

Table B-14 Language : Nepali

Sl No.	Code Point
1.	090C
2.	0944
3.	0960
4.	0961
5.	0962
6.	0963
7.	0970
8.	0971
9.	200D

Table B-15 Language : Odia

Sl No.	Code Point
1.	0B35
2.	0B72
3.	0B73
4.	0B74
5.	0B75
6.	0B76
7.	0B77
8.	200D
9.	0B0C
10.	0B44
11.	0B60
12.	0B61
13.	0B62
14.	0B63

Table B-16 Language : Punjabi

Sl No.	Code Point
1.	0A01
2.	0A51
3.	0A75
4.	200D
5.	0965
6.	0A03
7.	0A59
8.	0A5A
9.	0A5B
10.	0A5E
11.	0A33
12.	0A36
13.	0A72
14.	0A73

Table B-17 Language : Sanskrit

Sl No.	Code Point
1.	200D

Table B-18 Language : Santhali (Olchiki)

Sl No.	Code Point
1.	200D

Table B-19 Language : Sindhi

Sl No.	Code Point
1.	090C
2.	0944
3.	0958
4.	0959
5.	095A
6.	095B
7.	095C
8.	095D
9.	095E
10.	0960
11.	0961
12.	0962
13.	0963
14.	0970
15.	200D

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Table B-20 Language : Tamil

Sl No.	Code Point
1.	0BF6
2.	0BF7
3.	0BF8
4.	0BF9
5.	0BFA
6.	200D
7.	0B82
8.	0BD0
9.	0BF0
10.	0BF1
11.	0BF2
12.	0BF3
13.	0BF4
14.	0BF5

Table B-21 Language : Telugu

Sl No.	Code Point
1.	0C3D
2.	0C44
3.	0C55
4.	0C56
5.	0C58
6.	0C59
7.	0C60
8.	0C61
9.	0C63
10.	0C78
11.	0C79
12.	0C7A
13.	0C7B
14.	0C7C
15.	0C7D
16.	0C7E
17.	0C7F
18.	200D
19.	0C01
20.	0C0C
21.	0C62

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ANNEX C

(Clause 5, Note 3)

CHARACTERS SUBJECT TO NORMALIZATION (NFC)

Character (Code Point)	Normalized (NFC) form
Languages Covered by Devanagari Script	
क़ (0958)	क़ (0915 093C)
ख़ (0959)	ख़ (0916 093C)
ग़ (095A)	ग़ (0917 093C)
ज़ (095B)	ज़ (091C 093C)
ड़ (095C)	ड़ (0921 093C)
ढ़ (095D)	ढ़ (0922 093C)
फ़ (095E)	फ़ (092B 093C)
Languages Covered by Bengali Script	
ড় (09DC)	ড় (09A1 09BC)
ঢ় (09DD)	ঢ় (09A2 09BC)
ঝ (09DF)	ঝ (09AF 09BC)

Panjabi	
ਖ਼ (0A59)	ਖ਼ (0A16 0A3C)
ਗ਼ (0A5A)	ਗ਼ (0A17 0A3C)
ਜ਼ (0A5B)	ਜ਼ (0A1C 0A3C)
ੜ (0A5E)	ੜ (0A2B 0A3C)
ਝ਼ (0A33)	ਝ਼ (0A32 0A3C)
ਞ਼ (0A36)	ਞ਼ (0A38 0A3C)
Odia	
ଝଝ (0B5C)	ଝଝ (0B21 0B3C)
ଝଝ (0B5D)	ଝଝ (0B22 0B3C)

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