9. Standards - Devanagari

9.1 Indian Script Code for Information Interchange – IS13194:1991 (ISCII:1991)

Indian scripts have common phonetic structure. Department of Electronics and the Department of Official Language worked rigorously to evolve a Standard encoding scheme and keyboards, which could cater to needs of all the Indian scripts. The 8-bit ISCII Code, evolved by then Department of Electronics, (BIS standards IS 13194:1991) conforms to requirements of all Indian scripts and at the same time retains the standard ASCII code. The ISCII code table is a super-set of all the characters required in the ten Brahmi-based Indian scripts. An optimal keyboard overlay for these scripts is made possible by the phonetic nature of the alphabet.

There are manifold advantages in having a common code and keyboard for all the Indian scripts. Any software, which allows ISCII codes to be used, can be used in any Indian script, enhancing its commercial viability. Furthermore, immediate transliteration between different Indian scripts becomes possible, just by changing the display modes. Indian script keyboard overlay is designed in such a way so that the standard English can co-exist with Indian scripts. This approach also makes it feasible to use Indian scripts along with existing English computers and software, so long as 8-bit character codes are allowed.

In an 8-bit environment, the lower 128 characters are the same as defined IS 10315:1982, "7-bit coded character set for information interchange" also known as ASCII character set. The top 128 characters cater to all the ten Indian scripts based on the ancient Brahmi script. In a 7-bit environment the control code SI can be used for invocation of ISCII code set, the control code SO can be used for reselection of the ASCII code set.

The common INSCRIPT keyboard overlay allows typing of all the ten Indian scripts. This overlays fits on any existing English keyboard. Alternating between the English and Inscript overlay is achieved through the CAPSLOCK key. The INSCRIPT keyboard provides a logical and intuitive arrangement of vowels and consonants. It is based both on the phonetic properties and the relative usage frequencies of the letters. Not only does this make the keyboard much easier to learn, but also enables a person to type subsequently in all the Indian scripts.

As the display rendering depends entirely on the composition methodology, it is possible to view the same text in different styles prevalent in the script. It is possible to transliterate the text to Roman script, using additional signs on the letters (diacritic marks), for removing ambiguities. It is even possible to have the initial letters capitalized in the Roman text.

The ISCII code table for Devanagari is presented here for reference. In this table the code positions from A1 to FA are used for representation of Devanagari vowels, consonants, vowel-signs (matras), numerals and diacritical marks Nukta. Also three more control characters are provided in the code block namely INV (Invisible), ATR (Attribute) and EXT (Extension). The INV is provided to depict the independent vowel sign i.e. to display the vowel sign on a invisible base but without any base consonant. The ATR code followed by a displayable character, defines a font attribute applicable for the following characters. The EXT code followed by an ISCII character, defines a new character which can combine with the previous ISCII character.

ISCII:1991 (Indian Script Code for Information Interchange –IS13194:1991)

Hex (Dec)	0 / 0	1 / 16	2 / 32	3 / 48	4 / 64	5 / 80	6 / 96	7 / 112	8 / 128	9 / 144	A / 160	B / 176	C / 192	D / 208	E / 224	F / 240
0 / 0	NUL	DLE	SP	0	@	P	`	p				ऑ	ढ	ऱ	ॆ	EXT
1 / 1	SOH	DC1	!	1	A	Q	a	q			ँ	ओ	ण	ल	े	०
2 / 2	STX	DC2	"	2	B	R	b	r			ं	औ	त	ळ	ै	१
3 / 3	ETX	DC3	#	3	C	S	c	s			ः	क	थ	ऴ	ॅ	२
4 / 4	EOT	DC4	$	4	D	T	d	t			अ	ख	द	व	ॉ	३
5 / 5	ENQ	NAK	%	5	E	U	e	u			आ	ग	ध	श	ॊ	४
6 / 6	ACK	SYN	&	6	F	V	f	v			इ	घ	न	ष	ो	५
7 / 7	BEL	ETB	'	7	G	W	g	w			ई	ङ	ऩ	स	ौ	६
8 / 8	BS	CAN	(	8	H	X	h	x			उ	च	प	ह	्	७
9 / 9	HT	EM	)	9	I	Y	i	y			ऊ	छ	फ	INV	़	८
A / 10	LF	SUB	*	:	J	Z	j	z			ऋ	ज	ब	ा	।	९
B / 11	VT	ESC	+	;	K	[	k	{			ऎ	झ	भ	ि		
C / 12	FF	FS	,	<	L	\	l	|			ए	ञ	म	ी		
D / 13	CR	GS	-	=	M	]	m	}			ऐ	ट	य	ु		
E / 14	SO	RS	.	>	N	^	n	~			ऍ	ठ	य़	ू		
F / 15	SI	US	/	?	O	_	o	DEL				ड	र	ृ	ATR	