

HMBR & IPA (20230925 Preview)

Hunminbarum (HMBR) is a system of writing foreign sounds in Korean using modern and old Korean letters that correspond to the symbols of the International Phonetic Alphabet (IPA).

Although HMBR can theoretically be used to write any language that can be transcribed in IPA, the initial release of HMBR is for English, which is a global language.

The following principles are applied when converting English IPA symbols to HMBR:

1. The sounds represented by HMBR may not match the sounds of Hunminjeongeum, which was designed to write old Korean.

2. English consonants are written in HMBR as follows:

IPA English Consonants–HMBR for English (20230925)

IPA	IPA No.	Description	HMBR (Unicode)	Key Input	English	IPA	HMBR ^A (RP/GA, ^B Broad/Narrow)
/p ^h /	101	Voiceless bilabial plosive (aspirated) 무성 양순 파열음	Initial ㅍ (1111) Final ㅍ (11C1)	ㅍ	pun hoop	/p ^h ʌn/ /hu:p/	편 후우ㅍ (RP) / 후웁 (GA)
/p/	101	Voiceless bilabial plosive (unaspirated) 무성 양순 파열음	Initial ㅍ (1108)	ㅍ	spot	/spɒt/	ㅍㅍ (RP, Narrow) / ㅍㅍ (GA, Narrow)
/b/	102	Voiced bilabial plosive 유성 양순 파열음	Initial ㅂ (1107) Final ㅂ (11B8)	ㅂ	boost	/bu:st/	부우ㅂㅌ
/t ^h /	103	Voiceless alveolar plosive (aspirated) 무성 치경 파열음	Initial ㅌ (1110) Final ㅌ (11C0)	ㅌ	task	/tɑ:sk/ /tæsk/	타아ㅌ (RP) 태ㅌ (GA)
/t/	103	Voiceless alveolar plosive (unaspirated) 무성 치경 파열음	Initial ㅌ (1104)	ㅌ	stool	/stu:l/	ㅌ뚜웁 (Narrow)
/d/	104	Voiceless alveolar plosive 유성 치경 파열음	Initial ㄷ (1103) Final ㄷ (11AE)	ㄷ	day	/deɪ/	데이
/k ^h /	109	Voiceless velar plosive (aspirated) 무성 연구개 파열음	Initial ㅋ (110F) Final ㅋ (11BF)	ㅋ	kill task	/k ^h ɪl/ /tɑ:sk/	킬 (RP) 타아ㅌ (RP)
/k/	109	Voiceless velar plosive (unaspirated) 무성 연구개 파열음	Initial ㆁ (1101)	ㅇ + ㄱ	skill	/skɪl/	ㅌ꺠 (GA)

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/g/	110	Voiced velar plosive 유성 연구개 파열음	Initial ㄱ (1100) Final ㄱ (11A8)	ㄱ	good	/gʊd/	굳
/tʃ/	103 134	Voiceless postalveolar affricate 무성 후치경 파찰음	Initial ㅈ (1149)	ㅇ+ㅈ	chicken	/'tʃɪkɪn/	찌킨
/dʒ/	104 135	Voiced postalveolar affricate 유성 후치경 파찰음	Initial ㅉ (1148)	ㅇ+ㅉ	judge	/dʒʌdʒ/	져 ㅉ
/f/	128	Voiceless labiodental fricative 무성 순치 마찰음	Initial ㅍ (114B)	ㅇ+ㅍ	friend	/'frend/	ㅍ리엔드
/v/	129	Voiced labiodental fricative 유성 순치 마찰음	Initial ㅂ (1144)	ㅇ+ㅂ	very	/'veri/	베리
/θ/	130	Voiceless dental fricative 무성 치 마찰음	Initial ㅌ (1145)	ㅇ+ㅌ	thank	/'θæŋk/	앵 ㄱ
/ð/	131	Voiced dental fricative 유성 치 마찰음	초성 ㄷ (1142)	ㅇ+ㄷ	they	/'ðeɪ/	데이
/s/	132	Voiceless alveolar fricative 무성 치경 마찰음	자음앞 ㅅ (1109)	ㅅ	sky	/'skaɪ/	스카이 (Broad) 스까이 (Narrow)
			모음앞 ㅆ (110A)	ㅆ	sun	/'sʌn/	썬
/z/	133	Voiced alveolar fricative 유성 치경 마찰음	Initial ㅈ (1136)	ㅅ+ㅉ	zoo	/'zu:/	쥬우
/ʃ/	134	Voiceless postalveolar fricative 무성 후치경 마찰음	Initial ㅊ (1140)	ㅊ+ㅍ	shine	/'ʃaɪn/	샤인
/ʒ/	135	Voiced postalveolar fricative 유성 후치경 마찰음	Initial ㅉ (1146)	ㅇ+ㅊ+ ㅍ	measure	/'meɪʒə/	메 ㅉ
/h/	146	Voiceless glottal fricative 무성 성문 마찰음	Initial ㅎ (1112)	ㅎ	happy	/'hæpi/	해피
/m/	114	Voiced bilabial nasal 유성 양순 비음	Initial ㅁ (1106) Final ㅁ (11B7)	ㅁ	moon	/'mu:n/	무운

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/n/	116	Voiced alveolar nasal 유성 치경 비음	Initial ㄴ (1102) Final ㄴ (11AB)	ㄴ	noon	/nu:n/	누운
/ŋ/	119	Voiced velar nasal 유성 연구개 비음	Final ㅇ (11BC)	ㅇ	sing	/sɪŋ/	씩
/w/	170	Voiced labial–velar approximant 유성 순–연구개 접근음	Initial ㅜㅇ (1147)	ㅇ + ㅇ	wood	/wʊd/	우드
/j/	153	Voiced palatal approximant 유성 구개 접근음	ㅎ (1159) +모음	↑ + ㅎ	young yeast	/jʌŋ/ /jɪ:st/	영 히이스트
/l/	155	Voiced alveolar lateral approximant 유성 설측 치경 접근음	Initial ㄹ (1105) Final ㄹ (11AF)	ㄹ	love	/lʌv/	러애
/t/	155	Voiced velar approximant 유성 연구개 접근음	단어끝 Final ㄹ (11D0)	ㄹ + ㄹ	tell	/tɛl/	텔 (Narrow)
/r/ /ɹ/	151	Voiced postalveolar approximant 유성 후치경 접근음	Initial ㄹ (A976) Final ㄹ (D7DB)	ㅇ + ㄹ ㄹ + ↑ + ㅇ	rub far	/rʌb/ /fɑɹ/	럽 랏 (GA)

• Notes

A) RP: Received Pronunciation
GA: General American English

B) Broad: Broad Phonetic Transcription (default mode)

Narrow: Narrow Phonetic Transcription including aspiration, velarisation (advanced mode)

3. Principally, an English syllable that contains a vowel is written as a complete HMBR letter that contains a vowel or a medial. To do this, it is allowed to write only the initial without the medial.

Example) ‘friend’ /frend/ (one-syllable word with 1 vowel) is converted to ‘^ㅁ렌드’ (a complete HMBR letter containing a medial, /^ㅁ/, /ㄷ/ are medial-less initials)

Exception) Diphthongs or long vowels allow two complete letters, but indicate that they are one syllable by employing different sizes of the letters.

Example) The diphthong /ɔɪ/ in ‘boy’ /bɔɪ/ is converted to /^오이/ as in ‘^보이’

The long vowel /u:/ in ‘boost’ /bu:st/ is converted to /^우우/ as in ‘^부우스트’

4. English vowels are divided into Received Pronunciation and General American English and converted to HMBR as follows:

IPA English Vowels-HMBR for English (20230925)

RP /GA	IPA	IP A No .	Description	훈민바름 (Unicode)	키보드 입력법	영어 단어	IPA	훈민바름 (RP/GA, Broad/Narrow)
RP	/ɪ/	319	Near-high front unrounded short	ㅣ (1175)	ㅣ (100%)	sit	/sɪt/	씨 _ㅓ / 씨 _ㅣ
	/i:/	301	High front unrounded long	ㅣ 이 (1175)	ㅣ (100%) + 이 (50%)	seat	/si:t/	씨 _ㅣ 이 _ㅓ
	/ɛ/	303	Low-mid front unrounded short	ㅐ (1166)	ㅐ (100%)	pet	/pɛt/	페 _ㅓ
	/ɛ:/	303	Low-mid front unrounded long	ㅐ 에 (1166)	ㅐ (100%) + 에 (50%)	shared	/ʃɛ:d/	셰 _ㅓ 에 _ㅓ 드
	/æ/	325	Near-low front unrounded short	ㅏ (1162)	ㅏ (100%)	pat	/pæt/	패 _ㅓ
	/ʊ/	321	Near-high near-back rounded short	ㅓ (116E)	ㅓ (100%)	foot	/fʊt/	푸 _ㅓ
	/u:/	308	High back rounded long	ㅓ 우 (116E)	ㅓ (100%) + 우 (50%)	soon	/su:n/	수 _ㅓ 운
	/ə/	322	Mid central short (Schwa)	· (119E)	· (100%)	control	/kən'trɔ:l/	컨 _ㅓ 트 _ㅓ 옌 _ㅓ 울
	/ʌ/	314	Low-mid back unrounded short	ㅓ (1165)	ㅓ (100%)	sun	/sʌn/	썬
	/ɜ:/	326	Low-mid central unrounded long	ㅓ 어 (1165)	ㅓ (100%) + 어 (50%)	bird	/bɜ:d/	버 _ㅓ 어 _ㅓ 드
	/ɒ/	313	Low back rounded short	ㅓ (1169)	ㅓ (100%)	hot	/hɒt/	호 _ㅓ
/ɔ:/	306	Low-mid back rounded long	ㅓ 오 (1169)	ㅓ (100%) + 오 (50%)	port	/pɔ:t/	포 _ㅓ 오 _ㅓ 트	

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/ɑ:/	30 5	Low back unrounded long	ㅏ 아 (1161)	ㅏ (100%) + 아 (50%)	park	/pɑ:k/	파아ㅋ
/eɪ/	-	Diphthong	ㅐ 이 (1162)	ㅐ (100%) + 이 (50%)	say	/seɪ/	세이
/aɪ/	-	Diphthong	ㅑ 이 (1163)	ㅑ (100%) + 이 (50%)	bite	/baɪ/	바이ㅌ
/ɔɪ/	-	Diphthong	ㅓ 이 (1164)	ㅓ (100%) + 이 (50%)	boy	/bɔɪ/	보이
/aʊ/	-	Diphthong	ㅗ 우 (1165)	ㅗ (100%) + 우 (50%)	how	/haʊ/	하우
/əʊ/	-	Diphthong	ㅜ 우 (1166)	ㅜ (100%) + 우 (50%)	low	/ləʊ/	로우
/ɪə/	-	Diphthong	ㅣ ㅅ (1167)	ㅣ (100%) + ㅅ (50%)	near	/nɪə/	니ㅅ
/ʊə/	-	Diphthong	ㅓ ㅅ (1168)	ㅓ (100%) + ㅅ (50%)	pure	/pjʊə/	퓨ㅅ
/ɪ/	31 9	Near-high front unrounded short (lax)	ㅣ (1175)	ㅣ (100%)	sit	/sɪt/	싹
/i:/	30 1	High front unrounded long (tense)	ㅣ 이 (1175)	ㅣ (100%) + 이 (50%)	seat	/si:t/	싹
/ɛ/	30 3	Low-mid front unrounded short	ㅐ (1166)	ㅐ (100%)	pet	/pɛt/	펠
/æ/	32 5	Near-low front unrounded short	ㅐ (1162)	ㅐ (100%)	pat	/pæt/	팻
/ʊ/	32 1	Near-high near-back rounded short	ㅓ (116E)	ㅓ (100%)	foot	/fʊt/	풋
/u:/	30 8	High back rounded tense	ㅓ 우 (116E)	ㅓ (100%) + 우 (50%)	soon	/su:n/	수운

IPAEnglish Vowels–HMBR for English (20230925)

GA	/ə/	32 2	Mid central short (Schwa)	• (119E)	• (100%)	contro l	/kən 'trəʊl/	컨 트 오 울
	/ʌ/	31 4	Low–mid back unrounded short	ㄱ (1165)	ㄱ (100%)	sun	/sʌn/	션
	/ɔ/	30 6	Open–mid back rounded vowel	ㅛ (1182)	ㅛ+ㅛ	dog	/dɔg/	독
	/ɑ/	30 5	Low back unrounded	ㅏ (1161)	ㅏ (100%)	hot	/hɑt/	할
	/eɪ/	–	Diphthong	ㅐ 이	ㅐ (100%) + 이 (50%)	say	/seɪ/	쎄 이
	/aɪ/	–	Diphthong	ㅑ 이	ㅑ (100%) + 이 (50%)	bite	/baɪt/	바이
	/ɔɪ/	–	Diphthong	ㅓ 이	ㅓ (100%) + 이 (50%)	boy	/bɔɪ/	보 이
	/aʊ/	–	Diphthong	ㅓ 우	ㅓ (100%) + 우 (50%)	how	/haʊ/	하우
	/oʊ/	–	Diphthong	ㅜ 우	ㅜ (100%) + 우 (50%)	low	/ləʊ/	로우

5. Stressed syllables are indicated by using dynamic font sizes using font sizes in multiples of 4:

Stressed syllables: 100% (32pt)

Unstressed syllables: 75% (24pt)

Second vowels in a diphthong: 50% of the preceding vowel (16pt)

Syllables with a primary stress: 125% (40pt)

Syllables with a secondary stress: 100% (32pt)

예) interpersonal /,ɪntə'pɜːsnəl/ **인** **트** **퍼** **어** **스** **널**

Secondary	Unstressed	Primary	2nd vowel in	Unstressed	Unstressed
Stress	Syllable	Stress	diphthong	syllable	syllable
100%	75%	125%	50%	75%	75%
@32pt	@24pt	@40pt	@20pt	@24pt	@24pt

6. IPA to HMBR Conversion Charts for English are subject to change based on user feedback.

7. In principle, IPA databases are generated by ChatGPT.

8. Source code for HMBR is available at <https://github.com/julieso/hmbr>.