

Table S1. Stations belonging to the detected modules in the Chinese high-speed rail network.

Module Class	Module code	HSR Stations (English Name)	HSR Stations (Chinese Name)
Main body modules	M1	Anyang East, Baiyi,Baoji South, Baoding East, Beijing West, Chenzhou West, Chibi North, Dali, Dingzhou East, Futian, Fuxian East, Gaobeidian East, Gaoyi West, Gongyi South, Guangmingcheng, Guangzhou North, Guangzhou South, Guiding North, Guiyang, Handan East,Hebi East, Hengshan West, Hengyang East, Hongtong West, Houma West, Humen, Huashan North, Huaihua South, Huanghejingqu, Huangling South, Huozhou East, Jiaozuo, Jiexiu East, Jinzhong, Kaiyang, Kaili South, Leiyang West, Linfen West, Lingbao West, Lingshi East, Loudi South, Luowansanjiang, Luoyanglongmen, Luohe West, Lvboyuan, Mengzhuang, Miluo East, Mianchi South, Minggang East, Nanco, Nanjiang, Nanyangzhai, Pingyaogucheng, Pucheng East, Qixian East, Qishan, Qingyuan, Qingsheng, Sanmenxia South, Sansui, Shaoguan, Shaoshan South, Shaodong, Shaoyang, Shaoyang North, Shenzhen North, Shijiazhuang, Shuangfeng North, Songchenglu, Taigu West, Taiyuan South, Tongren South, Weinan North, Wenxi West, Wuhan, Wuzhi, Xian North, Xianning North, Xianyangqindu, Xiangtan North, Xiangfen West, Xiaogan North, Xinhua South, Xinhuang West, Xinxiang East, Xinzhengjichang, Xinyang East, Xingtai East, Xiuwu West, Xuchang East, Xupu South, Yanan, Yangquan North, Yangling South, Yingde West, Yongji North, Yueyang East, Yuncheng North, Changsha South, Zhengdingjichang, Zhengzhou, Zhengzhou East, Zhengzhou West, Zhijiang, Zhuzhou West, Zhumadian West, Zhuozhou East	安阳东,百宜,宝鸡南,保定东,北京西,郴州西,赤壁北,大荔,定州东,福田,富县东,高碑店东,高邑西,巩义南,光明城,广州北,广州南,贵定北,贵阳,邯郸东,鹤壁东,衡山西,衡阳东,洪洞西,侯马西,虎门,华山北,怀化南,黄河景区,黄陵南,霍州东,焦作,介休东,晋中,开阳,凯里南,耒阳西,临汾西,灵宝西,灵石东,娄底南,洛湾三江,洛阳龙门,漯河西,绿博园,孟庄,汨罗东,浉池南,明港东,南曹,南江,南阳寨,平遥古城,蒲城东,祁县东,岐山,清远,庆盛,三门峡南,三穗,韶关,韶山南,邵东,邵阳,邵阳北,深圳北,石家庄,双峰北,宋城路,太谷西,太原南,铜仁南,渭南北,闻喜西,武汉,武陟,西安北,咸宁北,咸阳秦都,湘潭北,襄汾西,孝感北,新化南,新晃西,新乡东,新郑机场,信阳东,邢台东,修武西,许昌东,溱浦南,延安,阳泉北,杨陵南,英德西,永济北,岳阳东,运城北,长沙南,正定机场,郑州,郑州东,郑州西,芷江,株洲西,驻马店西,涿州东
	M2	Anqing, Anting North, Badong, Baohuashan, Bishan, Cangxi, Changzhou, Chengdu East, Chengdu South, Chizhou, Dazhou, Daying East, Dazu South, Dantu, Danyang, Dangtu East, Dean, Deyang, Emeishan, Ezhou, Enshi, Fanchang West, Feidong, Fengdu, Fuling North, Fuzhou, Gongqingcheng, Guangan South, Guanghan North, Guangyuan, Haianxian, Hanchuan, Hankou, Hechuan,Hefei South, Hongan West,	安庆,安亭北,巴东,宝华山,璧山,苍溪,常州,成都东,成都南,池州,达州,大英东,大足南,丹徒,丹阳,当涂东,德安,德阳,峨眉山,鄂州,恩施,繁昌西,肥东,丰都,涪陵北,抚州,共青城,广安南,广汉北,广元,海安县,汉川,汉口,合川,合肥南,红安西,花桥,黄石,

Module Class	Module code	HSR Stations (English Name)	HSR Stations (Chinese Name)
		Huaqiao, Huangshi, Huishan, Jianyang South, Jianningxian North, Jianshi, Jiangdu, Jiangning West, Jiangyou, Jiangle, Jiangyan, Jinzhai, Jingzhou, Jiujiang, Kunshan South, Langzhong, Leshan, Lichuan, Luan,Longchang North, Lushan, Luojiang East, Macheng North, Maanshan East, Meishan East, Mianyang, Nanbu, Nanchang, Nancheng, Nanchong, Nanchong North, Nanfeng, Nanjing, Nantong, Nanxiang North, Neijiang North, Pengshan North, Pengan, Qishuyan, Qianjiang, Qingbaijiang East, Qinglian, Qingshen, Quanjiao, Rongchang North, Rugao, Ruichang, Sanming North, Shanghai, Shanghai West, Shizhuxian, Shuangliujichang, Shuangliu West, Suzhou, Suzhouxinqu, Suzhouyuanqu, Suining, Taining, Taizhou, Tianmen South, Tongling, Tongnan, Tuxi, Wuxi, Wuxixinqu, Wuhu, Wusheng, Xianlin, Xiantao West, Xindu East, Xinjin, Xinjin South, Yangzhou, Yangchenghu, Yangxin, Yichang East, Yijiang, Yingshan, Yongchuan East, Yongtai, Yongxiu, Youxi, Yuechi, Changshou North, Zhenjiang, Zhijiang North, Chongqing North, Ziyang North, Zizhong North	惠山,简阳南,建宁县北,建始,江都,江宁西,江油,将乐,姜堰,金寨,荆州,九江,昆山南,阆中,乐山,利川,六安,隆昌北,庐山,罗江东,麻城北,马鞍山东,眉山东,绵阳,南部,南昌,南城,南充,南充北,南丰,南京,南通,南翔北,内江北,彭山北,蓬安,戚墅堰,潜江,青白江东,青莲,青神,全椒,荣昌北,如皋,瑞昌,三明北,上海,上海西,石柱县,双流机场,双流西,苏州,苏州新区,苏州园区,遂宁,泰宁,泰州,天门南,铜陵,潼南,土溪,无锡,无锡新区,芜湖,武胜,仙林,仙桃西,新都东,新津,新津南,扬州,阳澄湖,阳新,宜昌东,弋江,营山,永川东,永泰,永修,尤溪,岳池,长寿北,镇江,枝江北,重庆北,资阳北,资中北
	M3	Bengbu South, Beijing South, Cangzhou West, Changle, Changzhou North, Chaohu East, Chuzhou, Danyang North, Dexing, Dezhou East, Dingyuan, Gaomi, Haiyang North, Hefei, Huainan East, Huangshan North, Jimo North, Jinan, Jinan East, Jinan West, Jixi East, Jiaozhou North, Jingxian, Jingde, Kaifeng, Laixi North, Laiyang, Langfang, Muping, Nanjing South, Nanling, Qingdao, Qingdao North, Qingzhoushi, Qufu East, Rongcheng, Shangqiu, Shuijiahua, Suzhou North, Taian, Taocun North, Tengzhou East, Tianjin South, Tongling North, Weihai, Weihai North, Weifang, Wendeng East, Wuwei, Wuxi East, Wuyuan, Shexian North, Suzhou East, Xuzhou, Xuzhou East, Yantai, Yantai South, Zaozhuang, Zhangqiu, Changlinhe, Zhenjiang South, Zibo	蚌埠南,北京南,沧州西,昌乐,常州北,巢湖东,滁州,丹阳北,德兴,德州东,定远,高密,海阳北,合肥,淮南东,黄山北,即墨北,济南,济南东,济南西,绩溪北,胶州北,泾县,旌德,开封,莱西北,莱阳,廊坊,牟平,南京南,南陵,青岛,青岛北,青州市,曲阜东,荣成,商丘,水家湖,苏州北,泰安,桃村北,滕州东,天津南,铜陵北,威海,威海北,潍坊,文登东,无为,无锡东,婺源,歙县北,宿州东,徐州,徐州东,烟台,烟台南,枣庄,章丘,长临河,镇江南,淄博

Module Class	Module code	HSR Stations (English Name)	HSR Stations (Chinese Name)
	M4	Aojiang, Cang South, Chaoshan, Chaoyang, Deqing, Fenghua, Fuan, Fuding, Fuqing, Fuzhou, Fuzhou South, Fuzhou East, Ganzhou, Gaoan, Gutian North, Gutianhuizhi, Guanzhaishan, Haining West, Hanjiang, Hangzhou, Hangzhou East, Hefeibeicheng, Houmen, Huzhou, Huian, Huidong, Huizhou South, Jiashan South, Jiaxing South, Jianou West, Jiangning, Jiangshan, Jiaomei, Jinhua, Jinhua South, Jinshan North, Jinxian South, Jinjiang, Jinyun West, Jurong West, Kuitan, Yueqing, Liling East, Lishui, Lishui, Liyang, Lianjiang, Linhai, Longshanzhen, Longyan, Longyou, Lufeng, Luoyuan, Mingqing North, Nanchang West, Nanjing, Nanping North, Ningbo, Ningde, Ninghai, Pingxiang North, Putian, Puning, Qingtian, Quzhou, Quanzhou, Raoping, Ruian, Ruijin, Sanmenxian, Xiamen, Xiamen North, Shanwei, Shanghaiahongqiao, Shangrao, Shangyu North, Shaoxing North, Shenfang, Shenzhenpingshan, Songjiang South, Taizhou, Taimushan, Tongxiang, Wawushan, Wenling, Wenzhou South, Wufushan, Wuyishan North, Wuyishan East, Wuyi North, Xiapu, Xianyou, Xinyu North, Yandangshan, Yichun, Yixing, Yiyang, Yiwu, Yingtan North, Yongjia, Yongkang South, Yudu, Yuhang, Yuyao North, Yushan South, Yunxiao, Zhangpu, Zhangzhou, Changting South, Changxing, Zhaoan, Zhuji, Zhuangqiao	鳌江,苍南,潮汕,潮阳,德清,奉化,福安,福鼎,福清,福州,福州南,抚州东,赣州,高安,古田北,古田会址,冠豸山,海宁西,涵江,杭州,杭州东,合肥北城,鲟门,湖州,惠安,惠东,惠州南,嘉善南,嘉兴南,建瓯西,江宁,江山,角美,金华,金华南,金山北,进贤南,晋江,缙云西,句容西,葵潭,乐清,醴陵东,丽水,溧水,溧阳,连江,临海,龙山镇,龙岩,龙游,陆丰,罗源,闽清北,南昌西,南靖,南平北,宁波,宁德,宁海,萍乡北,莆田,普宁,青田,衢州,泉州,饶平,瑞安,瑞金,三门县,厦门,厦门北,汕尾,上海虹桥,上饶,上虞北,绍兴北,绅坊,深圳坪山,松江南,台州,太姥山,桐乡,瓦屋山,温岭,温州南,五府山,武夷山北,武夷山东,武义北,霞浦,仙游,新余北,雁荡山,宜春,宜兴,弋阳,义乌,鹰潭北,永嘉,永康南,于都,余杭,余姚北,玉山南,云霄,漳浦,漳州,长汀南,长兴,诏安,诸暨,庄桥
	M5	Anda, Antuxi, Anshan West, Bayuquan, Bazhou West, Baigou, Baiyangdian, Baoding, Beidaihe, Beijing, Beijingzi, Benxi, Benxincheng, Binhai, Binhai North, Cangzhou, Changtu West, Chengzitan, Dagushan, Dalian, Dalian North, Daqingdong, Daqing West, Dandong, Dandong West, Dehui West, Dezhou, Dengshahe, Dongdaihe, Donggang North, Dunhua, Fengcheng East, Fuyubei North, Fushun, Fushun North, Gaizhou West, Gongzhuling South, Guangningsi, Haerbin, Haerbin North, Haerbin West, Haicheng West, Huludao North, Huayuankou, Hunchun, Jilin, Jiaohe West, Jinzhou, Jinzhou South, Jiutai South, Junliangcheng North, Kaiyuan West, Lishizhai, Liaoyang, Liaozhong, Longjia, Luanhe, Luanxian, Nanfen North, Panjin, Panjin North, Pikou, Piaoertun, Puwan, Qiqihaer, Qiqihaer South, Qinhuangdao, Qingdui, Shanhaiguan, Shenyang, Shenyang North, Shenyang South, Shengfang, Shuangcheng North, Siping East, Suizhong North, Taian, Taikang, Tangshan, Tangshan North, Tanggu, Tianjin, Tianjin West,	安达,安图西,鞍山西,鲅鱼圈,霸州西,白沟,白洋淀,保定,北戴河,北京,北井子,本溪,本溪新城,滨海,滨海北,沧州,昌图西,城子坦,大孤山,大连,大连北,大庆东,大庆西,丹东,丹东西,德惠西,德州,登沙河,东戴河,东港北,敦化,凤城东,扶余北,抚顺,抚顺北,盖州西,公主岭南,广宁寺,哈尔滨,哈尔滨北,哈尔滨西,海城西,葫芦岛北,花园口,珥春,吉林,蛟河西,金州,锦州南,九台南,军粮城北,开原西,李石寨,辽阳,辽中,龙嘉,滦河,滦县,南芬北,盘锦,盘锦北,皮口,瓢儿屯,普湾,齐齐哈尔,齐齐哈尔南,秦皇岛,青堆,山海关,沈阳,沈阳北,沈阳南,胜芳,双城北,四平东,绥中北,台安,泰康,唐山,唐山北,塘沽,天津,天津西,铁岭西,通远

Module Class	Module code	HSR Stations (English Name)	HSR Stations (Chinese Name)
		Tieling West, Tongyuanpu West, Tumen North, Wafangdian West, Wulongbei East, Wuqing, Xingshutun, Xushui, Yanji West, Yingkou East, Yujiapu, Changchun, Changchun West, Zhaodong, Zhengding, Zhuanghe North	堡西,图们北,瓦房店西,五龙背东,武清,杏树屯,徐水,延吉西,营口东,于家堡,长春,长春西,肇东,正定,庄河北
	M6	Baise, Beihai, Binyang, Congjiang, Dongan East, Duyun East, Fangchenggang North, Gongcheng, Guangning, Guidingxian, Guigang, Guiyang North, Guilin, Guilin North, Guilin West, Guiping, Hepu, Hezhou, Huaiji, Laibin North, Liuzhou, Longdongbao, Longli North, Longan East, Luzhai North, Nanjiangkou, Nanning, Nanning East, Nanning West, Pingguo, Pingnan South, Qidong, Qiyang, Qinzhou East, Quanzhou South, Rongjiang, Sanduxian, Sanjiang South, Sanshui South, Tengxian, Tiandong North, Tianyang, Wuzhou South, Xingan North, Yangshuo, Yongfu South, Yongzhou, Yunan, Yunfu East, Zhaoqing East, Zhongshan West	百色,北海,宾阳,从江,东安东,都匀东,防城港北,恭城,广宁,贵定县,贵港,贵阳北,桂林,桂林北,桂林西,桂平,合浦,贺州,怀集,来宾北,柳州,龙洞堡,龙里北,隆安东,鹿寨北,南江口,南宁,南宁东,南宁西,平果,平南南,祁东,祁阳,钦州东,全州南,榕江,三都县,三江南,三水南,藤县,田东北,田阳,梧州南,兴安北,阳朔,永福南,永州,郁南,云浮东,肇庆东,钟山西
Dependent modules	D1	Ande, Chengdu, Dujiangyan, Hongguangzhen, Liduigongyuan, Pengzhou, Pixian, Pixian West, Qingchengshan, Xipu, Xipu East, Yingbinlu	安德,成都,都江堰,红光镇,离堆公园,彭州,郫县,郫县西,青城山,犀浦,犀浦东,迎宾路
	D2	Beijiao, Bijiang, Dongsheng, Guzhen, Jiangmen, Mingzhu, Nanlang, Nantou, Qianshan, Ronggui, Shunde, Shundexueyuan, Tangjiawan, Xiaolan, Xinhui, Zhongshan, Zhongshan North, Zhuhai, Zhuhai North	北滘,碧江,东升,古镇,江门,明珠,南朗,南头,前山,容桂,顺德,顺德学院,唐家湾,小榄,新会,中山,中山北,珠海,珠海北
	D3	Changping, Dawang, Dinghu East, Dinghushan, Dongguan, Duanzhou, Guangzhou, Guangzhou East, Sanshui North, Shenzhen, Shishan, Shishan North, Sihui, Yundonghai, Zhangmutou, Zhaoqing	常平,大旺,鼎湖东,鼎湖山,东莞,端州,广州,广州东,三水北,深圳,狮山,狮山北,四会,云东海,樟木头,肇庆
	D4	Anlu, Daye North, Ezhoudong, Gedian South, Gucheng, Heshengqiao East, Henggouqiao East, Huahu, Huashan South, Huarong East, Huarong South, Huanggang, Huanggang East, Huanggang West, Huangshi North, Miaoshan, Nanhu East, Puan, Shanpo East, Shiyan, Suizhou, Tangxunhu, Tuditang East, Wulongquan South, Wuchang, Xianning East, Xianning South, Xiangyang, Xiangyang East, Yunmeng, Zaoyang, Zhifang East, Zuoling	安陆,大冶北,鄂州东,葛店南,谷城,贺胜桥东,横沟桥东,花湖,花山南,华容东,华容南,黄冈,黄冈东,黄冈西,黄石北,庙山,南湖东,普安,山坡东,十堰,随州,汤逊湖,土地堂东,乌龙泉南,武昌,咸宁东,咸宁南,襄阳,襄阳东,云梦,枣阳,纸坊东,左岭

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Independent modules	I1	Changping East, Huihuan, Lilin North, Longfeng, Xihu East, Xiaojinkou, Yiping, Yunshan, Zhangmutou East, Zhongkai	常平东,惠环,沥林北,龙丰,西湖东,小金口,银瓶,云山,樟木头东,仲恺
	I2	Datong West, Gaotai South, Hami, Haidong West, Jiayuguan South, Jiuquan South, Lanzhou, Lanzhou West, Lanzhouxinqu, Ledu South, Linze South, Liuyuan South, Menyuan, Minhe South, Minle, Qingshui North, Shanshan North, Tuha, Turpan North, Urumqi South, Xining, Yumen, Zhangye West, Zhongchuanjichang	大通西,高台南,哈密,海东西,嘉峪关南,酒泉南,兰州,兰州西,兰州新区,乐都南,临泽南,柳园南,门源,民和南,民乐,清水北,鄯善北,吐哈,吐鲁番北,乌鲁木齐南,西宁,玉门,张掖西,中川机场
	I3	Baotou, Baotou East, Dalate West, Dongsheng West, Erdos, Hohhot, Hohhot East, Jining South, Salaqi, Zhuozi East	包头,包头东,达拉特西,东胜西,鄂尔多斯,呼和浩特,呼和浩特东,集宁南,萨拉齐,卓资东
	I4	Baimajing, Boao, Dongfang, Fenghuangjichang, Fushanzhen, Haikou, Haikou East, Huangliu, Jianfeng, Laochengzhen, Ledong, Lingao South, Lingshui, Meilan, Qiziwan, Qionghai, Sanya, Shenzhou, Wanning, Wenchang, Yazhou, Yalongwan, Yintan	白马井,博鳌,东方,凤凰机场,福山镇,海口,海口东,黄流,尖峰,老城镇,乐东,临高南,陵水,美兰,棋子湾,琼海,三亚,神州,万宁,文昌,崖州,亚龙湾,银滩