GSMA Roaming Database
IR.21 Data

RAEX IR.21 Information

Creation date:	2019-03-13
Creation time:	04:40:47+01:00
File type:	IR.21
Sender TADIG:	SGPSH
Publish Comment:	v88
TADIG-GEN schema version:	2.4
RAEX-IR.21 schema version:	12.1

ORGANISATION INFORMATION

Section ID: 1 (Mandatory)

Organisation name:	StarHub Mobile Pte Ltd
Country initials:	SGP

History of changes

TADIG Code	Section ID	Section	Date	Description
SGPSH	17	IP Roaming/Networking Information	2019-03-12	Removal of 115.178.178.128/27,115.178.178.0/27,115.178.178.192/26 and 115.178.178.185/32.
SGPSH	4	Routing Information	2019-03-04	StarHub MVNO NDC 65 8842 and 65 8843 added
SGPSH	17	IP Roaming/Networking Information	2019-01-09	Please replace 115.178.178.134/27 with 115.178.178.128/27 and 115.178.178.2/27 with 115.178.178.0/27. New IP address range 203.81.182.248/29 added.
SGPSH	21	Contact Information	2019-01-09	Contact updated.
SGPSH	4	Routing Information	2018-12-19	Clarification on StarHub's IP address
SGPSH	17	IP Roaming/Networking Information	2018-12-19	203.116.17.96/28, 203.116.17.112/28, 115.178.178.134/27, 115.178.178.2/27, 115.178.178.192/26 and 115.178.178.185/32 added.
SGPSH	17	IP Roaming/Networking Information	2018-11-12	103.231.48.128/26 replaced by 103.231.48.128/25 and 103.231.49.128/26 replaced by 103.231.49.128/25.
SGPSH	20	LTE Roaming Information	2018-08-21	Correction: EPC realm should read epc.mnc005.mcc525.3gppnetwork.org
SGPSH	4	Routing Information	2018-08-20	StarHub MVNO NDC 65 8785 and 65 8791 added.
SGPSH	13	Network Elements Information	2018-08-20	Added IP address range to SGSN-3G GT. Added MSC/VLR GT 65 9854 0007. GT 65 98540057 and 65 98540058 removed.
SGPSH	16	Packet Data Service Information	2018-08-20	Added APN Type.
SGPSH	20	LTE Roaming Information	2018-08-20	IPX Provider Info added.
SGPMM	16	Packet Data Service Information	2018-08-20	Added APN Type.
SGPSH	4	Routing Information	2018-05-11	MSISDN CC NDC, 65 8754 to 65 8760 and 65 8769 to 65 8772 belong to StarHub MVNO
SGPSH	13	Network Elements Information	2018-05-11	New MMSC +65 98541097 added.
SGPSH	16	Packet Data Service Information	2018-05-11	2G data reference is removed
SGPSH	18	MMS Interworking Information	2018-05-11	New MMSC Domain name. (Target to go live in June 2018)
SGPMM	16	Packet Data Service Information	2018-05-11	2G Data reference is removed.
SGPSH	17	IP Roaming/Networking Information	2017-12-18	Previously published IP range 115.178.160.40/27 and 115.178.164.40/27 are invalid. Please implement 115.178.160.32/27 and 115.178.164.32/27 instead.
SGPSH	4	Routing Information	2017-12-13	A short explanation on our IP ranges.
SGPSH	17	IP Roaming/Networking Information	2017-12-13	IP ranges 115.178.160.0/27, 115.178.160.40/27 and 115.178.164.40/27 added. Old IP ranges 115.178.160.0/19, 115.178.192.0/19 and 115.178.224.0/19 removed. IPX carriers updated.
SGPSH	17	IP Roaming/Networking Information	2017-10-24	Old IP range 27.146.1.0/27, 27.146.1.32/27, 42.153.1.0/24, 183.78.8.0/24 removed. New IP 213.137.159.0/24 added. Old ASN 45960, 64569 removed. New ASN 6774 added.
SGPSH	17	IP Roaming/Networking Information	2017-10-24	Applicable to SGPMM.
SGPSH	20	LTE Roaming Information	2017-10-24	Applicable to SGPMM.
SGPSH	21	Contact Information	2017-10-24	Contact Updated
SGPSH	4	Routing Information	2017-09-01	MSISDN CC NDC, 65 8754 to 65 8760 belong to StarHub MVNO.
SGPSH	13	Network Elements Information	2017-09-01	SGSN-2G+3G 65 90247976-7 removed. 3G 65 98540057-8 updated. SMSC GT 65 98541096 added. StarHub MVNO SMSC numbers added
SGPSH	15	CAMEL Information	2017-09-01	StarHub MVNO SCP info added
SGPSH	17	IP Roaming/Networking Information	2017-09-01	New IP address range 115.112.166.16/32 added. ASN 64562 added. GRX Provider BBIX Info updated.
SGPSH	21	Contact Information	2017-09-01	GPRS IREG contact updated
SGPSH	17	IP Roaming/Networking Information	2016-10-06	DNS IP address 203.116.22.51 and 203.116.22.52 are removed. IP range 193.240.51.81/32, 193.240.51.82/32, 4.15.38.105/32, 4.15.38.106/32 and 103.4.245.32/30 are removed.

TADIG Code	Section ID	Section	Date	Description
SGPSH	17	IP Roaming/Networking Information	2016-10-06	New ASN 24545 added. New IP ranges 192.234.88.48/28, 185.81.136.160/28, 193.240.51.80/29, 4.15.38.104/29, 192.234.88.112/28, 103.4.245.32/29 are added.
SGPSH	20	LTE Roaming Information	2016-10-06	GSMA new format
SGPSH	13	Network Elements Information	2016-09-09	New SMSC GT +65 6598541097 and +65 6598541098, and SGSN +65 98541093 are added.
SGPSH	17	IP Roaming/Networking Information	2016-09-09	New IP range 103.4.245.32/30 is added.
SGPSH	17	IP Roaming/Networking Information	2016-06-20	New ASN 65450 and 61262 added. New IP range 185.39.52.24/29, 185.39.54.24/29, 193.240.51.81/32, 193.240.51.82/32, 192.234.88.32/28, 192.234.88.96/28, 4.15.38.105/32, 4.15.38.106/32. GRX Provider Info updated.
SGPSH	21	Contact Information	2016-06-20	Contact updated.
SGPSH	5	International SCCP Gateway	2016-04-08	New comment for Type: STP added.
SGPSH	17	IP Roaming/Networking Information	2016-04-08	New ASN 9874 and 65010 added. New IP range 103.231.49.128/26 added.
SGPSH	21	Contact Information	2016-04-08	Escalation contact is updated.
SGPSH	17	IP Roaming/Networking Information	2016-02-22	New IP range 203.116.42.16/29, 203.116.42.24/29, 203.116.42.32/27, 203.116.42.64/28, 203.116.22.144/28, 203.116.22.160/27 and 183.78.8.0/24 is added. New ASN 45960 is added. New DNS address 203.116.22.244 (Pri), 203.116.42.28 (Sec) added.
SGPSH	13	Network Elements Information	2015-12-22	New MSC/VLR +65 98541095 and SGSN +65 6598541085 added.
SGPSH	17	IP Roaming/Networking Information	2015-11-07	New ASN 18004, 4832 and 64569 added. New IP Range 27.146.1.0/27, 27.146.1.32/27 and 202.62.29.0/24 added.
SGPSH	13	Network Elements Information	2015-08-28	+65 98540023/24/26/28 node type changed to MSC/VLR.
SGPSH	17	IP Roaming/Networking Information	2015-08-28	New ASN 22870 for Syniverse GRX migration is added.
SGPSH	5	International SCCP Gateway	2015-06-26	Added existing SCCP information.
SGPSH	17	IP Roaming/Networking Information	2015-06-26	New Inter-PLMN IP added.
SGPSH	21	Contact Information	2015-06-26	IREG Contact is updated.
SGPSH	4	Routing Information	2015-05-08	New NDCs 65 8789, 65 8790, 65 8829, 65 8830 and 65 8831 added. MSRN 65 8241 reinstated.
SGPSH	13	Network Elements Information	2015-05-08	New NT-HLR GT 6598541011 to 6598541018 and 6598541021 to 6598541025 added.
SGPSH	17	IP Roaming/Networking Information	2015-05-08	ASN 38322 is added. New IP Range 42.153.1.0/24 is added.
SGPSH	20	LTE Roaming Information	2015-05-08	Diameter and LTE QoS Profile List updated.
SGPMM	4	Routing Information	2015-05-08	MSRN details added. Bogus ASN 23456 is removed.
SGPSH	17	IP Roaming/Networking Information	2015-03-04	ASN 64851 is added.
SGPSH	4	Routing Information	2015-02-13	New ASN 131591 added. While waiting for the next new schema version 9.2 to be ready, ASN 131591 is added to Additional Information field in Routing section.
SGPSH	17	IP Roaming/Networking Information	2015-02-13	New ASN 131591 added. While waiting for the next new schema version 9.2 to be ready, ASN 131591 is added to Additional Information field in Routing section.
SGPMM	4	Routing Information	2015-02-13	New ASN 131591 added. While waiting for the next new schema version 9.2 to be ready, ASN 131591 is added to Additional Information field in Routing section.
SGPSH	4	Routing Information	2014-11-06	658241 is removed Network Nodes Global Range.
SGPSH	13	Network Elements Information	2014-11-06	SMSC GT 65 8241 is removed.
SGPSH	17	IP Roaming/Networking Information	2014-11-06	New IP Range 103.231.48.128/26 is added. Note: Only applicable when StarHub is HPMN.
SGPMM	4	Routing Information	2014-11-06	658241 is removed Network Nodes Global Range.
SGPSH	17	IP Roaming/Networking Information	2014-11-03	Info for second IMSI range 525-08 (SGPMM) is removed.
SGPSH	20	LTE Roaming Information	2014-11-03	Info for second IMSI range 525-08 (SGPMM) is removed.
SGPSH	21	Contact Information	2014-11-03	GPRS Contact is updated.

TADIG Code	Section ID	Section	Date	Description
SGPMM	16	Packet Data Service Information	2014-11-03	Info for second IMSI range 525-08 (SGPMM) is added.
SGPSH	4	Routing Information	2014-08-18	658241 is added to Network Nodes Global Range.
SGPSH	13	Network Elements Information	2014-08-18	No new change. Table is rearranged for easy viewing.
SGPSH	17	IP Roaming/Networking Information	2014-08-18	New IP Range 199.255.4.0/24 added. Note: IP add 199.255.4.0/24 ,116.68.0.16/28 and 116.68.0.32/28 are only applicable when StarHub is HPMN.
SGPMM	4	Routing Information	2014-08-18	658241 is added to Network Nodes Global Range.
SGPSH	17	IP Roaming/Networking Information	2014-05-30	New IP address ranges added.
SGPSH	20	LTE Roaming Information	2014-05-30	New IP Address 203.116.249.252 added.
SGPSH	21	Contact Information	2014-05-30	GPRS IREG Contact is updated.
SGPSH	13	Network Elements Information	2014-04-30	New MSC/VLR +65 90247912 added.
SGPSH	20	LTE Roaming Information	2014-03-05	2G/3G/LTE Roaming Agreement Scenario 3 & 4 updated.
SGPSH	16	Packet Data Service Information	2014-02-01	IP range 203.116.42.128/26 missing in previous version reinstated.
SGPSH	4	Routing Information	2014-01-21	New NDCs: 65 8724, 65 8725, 65 8726, 65 8727 & 65 8729 added. Information on Fixed NDCs updated. StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	5	International SCCP Gateway	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	8	Subscriber Identity Authentication	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	10	MAP	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	13	Network Elements Information	2014-01-21	MAP Gateway/SMSC Nos: 65 98540023-98540024, 65 98540026 & 65 985440028 are added. StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	15	CAMEL Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	16	Packet Data Service Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	17	IP Roaming/Networking Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	18	MMS Interworking Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	20	LTE Roaming Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	21	Contact Information	2014-01-21	Contact list updated.
SGPSH	21	Contact Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	21	Contact Information	2014-01-21	GPRS IREG contact is updated.
SGPMM	4	Routing Information	2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
SGPSH	13	Network Elements Information	2013-08-12	New GMSC nodes GT 6598540002/3 added.
SGPSH	21	Contact Information	2013-08-12	Contact list is updated.
SGPSH	20	LTE Roaming Information	2013-05-04	LTE information is added.
SGPSH	16	Packet Data Service Information	2013-03-02	APN Operator Identifier corrected. It should read mnc005.mcc525.gprs.
SGPSH	18	MMS Interworking Information	2013-03-02	MMSC Domain Name corrected. It should read imms.mnc005.mcc525.gprs.

NETWORK

TADIG code: SGPSH
Section ID: 2 (Mandatory, Repeating)

TADIG code:	SGPSH
Network name:	StarHub Mobile Pte Ltd
Network type:	Terrestrial
Technology:	**Frequency list:**
2G-GSM frequencies:	Unsupported
3G-UTRA/FDD frequencies:	8 - 900 MHz, 1 - IMT 2.1 GHz
3G-UTRA/TDD frequencies:	Unsupported
4G-E-UTRAN frequencies:	1 - IMT 2.1 GHz, 3 - DCS 1800, 7 - 2.6 GHz, 38 - TDD 2.6 GHz
4G-E-UTRAN-MIoT-LTE-M frequencies:	Unsupported
4G-E-UTRAN-MIoT-NB-IOT frequencies:	Unsupported
Presentation of country initials and MNN:	SGP StarHub
Abbreviated MNN:	StarHub

NETWORK INFORMATION

TADIG code: SGPSH
Section ID: 3 (Mandatory)

The following information refer to the network identified by TADIG code SGPSH

StarHub

ROUTING INFORMATION

TADIG code: SGPSH
Section ID: 4 (Mandatory)
Effective date of change: 2019-03-13

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	SN Range Start	SN Range Stop	Primary International DPC	Secondary International DPC	MVNO Number
MSISDN number ranges (s)							
	65	8110					
	65	8111					
	65	8112					
	65	8113					
	65	8114					
	65	8115					
	65	8116					
	65	8117					
	65	8118					
	65	8119					
	65	8130					
	65	8131					
	65	8132					
	65	8133					
	65	8134					
	65	8135					
	65	8136					
	65	8137					
	65	8138					
	65	8139					
	65	8141					
	65	8142					
	65	8143					
	65	8144					
	65	8145					
	65	8146					
	65	8147					
	65	8148					
	65	8149					
	65	8150					
	65	8151					
	65	8152					
	65	8153					
	65	8154					
	65	8155					
	65	8156					
	65	8157					
	65	8158					
	65	8159					
	65	8160					
	65	8161					

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CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	SN Range Start	SN Range Stop	Primary International DPC	Secondary International DPC	MVNO Number
MSISDN number ranges (s)							
	65	8162					
	65	8163					
	65	8164					
	65	8165					
	65	8166					
	65	8167					
	65	8168					
	65	8169					
	65	8180					
	65	8183					
	65	8184					
	65	8185					
	65	8186					
	65	8187					
	65	8189					
	65	8198					
	65	8200					
	65	8201					
	65	8202					
	65	8203					
	65	8204					
	65	8205					
	65	8206					
	65	8207					
	65	8208					
	65	8209					
	65	8220					
	65	8221					
	65	8224					
	65	8225					
	65	8226					
	65	8227					
	65	8229					
	65	8230					
	65	8231					
	65	8232					
	65	8233					
	65	8234					
	65	8235					
	65	8236					
	65	8237					
	65	8238					
	65	8239					
	65	8240					
	65	8241					

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CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	SN Range Start	SN Range Stop	Primary International DPC	Secondary International DPC	MVNO Number
MSISDN number ranges (s)							
	65	8242					
	65	8243					
	65	8244					
	65	8245					
	65	8246					
	65	8247					
	65	8248					
	65	8249					
	65	8250					
	65	8251					
	65	8252					
	65	8253					
	65	8254					
	65	8255					
	65	8256					
	65	8257					
	65	8258					
	65	8259					
	65	8268					
	65	8290					
	65	8291					
	65	8292					
	65	8293					
	65	8294					
	65	8295					
	65	8296					
	65	8297					
	65	8298					
	65	8321					
	65	8322					
	65	8328					
	65	8330					
	65	8331					
	65	8332					
	65	8334					
	65	8335					
	65	8336					
	65	8337					
	65	8352					
	65	8361					
	65	8362					
	65	8363					
	65	8364					
	65	8365					
	65	8367					

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	*SN Range Start*	*SN Range Stop*	*Primary International DPC*	*Secondary International DPC*	*MVNO Number*
MSISDN number ranges (s)							
	65	8369					
	65	8370					
	65	8373					
	65	8377					
	65	8378					
	65	8380					
	65	8384					
	65	8389					
	65	8390					
	65	8391					
	65	8392					
	65	8394					
	65	8395					
	65	8396					
	65	8397					
	65	8400					
	65	8468					
	65	8470					
	65	8471					
	65	8472					
	65	8473					
	65	8474					
	65	8475					
	65	8476					
	65	8477					
	65	8478					
	65	8479					
	65	8490					
	65	8491					
	65	8492					
	65	8493					
	65	8494					
	65	8495					
	65	8498					
	65	8501					
	65	8503					
	65	8505					
	65	8508					
	65	8509					
	65	8512					
	65	8513					
	65	8514					
	65	8516					
	65	8517					
CCITT E.164 Number series	65	8519					

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	SN Range Start	SN Range Stop	Primary International DPC	Secondary International DPC	MVNO Number
MSISDN number ranges (s)							
	65	8520					
	65	8521					
	65	8526					
	65	8527					
	65	8528					
	65	8529					
	65	8530					
	65	8531					
	65	8538					
	65	8557					
	65	8559					
	65	8560					
	65	8561					
	65	8562					
	65	8563					
	65	8564					
	65	8565					
	65	8566					
	65	8567					
	65	8568					
	65	8569					
	65	8570					
	65	8571					
	65	8572					
	65	8592					
	65	8593					
	65	8594					
	65	8596					
	65	8597					
	65	8598					
	65	8599					
	65	8601					
	65	8602					
	65	8603					
	65	8604					
	65	8605					
	65	8606					
	65	8607					
	65	8608					
	65	8609					
	65	8658					
	65	8659					
	65	8660					
	65	8661					
	65	8680					

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CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	*SN Range Start*	*SN Range Stop*	*Primary International DPC*	*Secondary International DPC*	*MVNO Number*
MSISDN number ranges (s)							
	65	8681					
	65	8682					
	65	8689					
	65	8690					
	65	8700					
	65	8722					
	65	8724					
	65	8725					
	65	8726					
	65	8727					
	65	8728					
	65	8729					
	65	8765					
	65	8789					
	65	8790					
	65	8829					
	65	8830					
	65	8831					
	65	9001					
	65	9002					
	65	9003					
	65	9004					
	65	9005					
	65	9006					
	65	9007					
	65	9008					
	65	9009					
	65	9020					
	65	9021					
	65	9022					
	65	9023					
	65	9024					
	65	9025					
	65	9026					
	65	9027					
	65	9028					
	65	9029					
	65	9060					
	65	9061					
	65	9062					
	65	9063					
	65	9064					
	65	9065					
	65	9066					
	65	9067					

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CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	*SN Range Start*	*SN Range Stop*	*Primary International DPC*	*Secondary International DPC*	*MVNO Number*
MSISDN number ranges (s)							
	65	9068					
	65	9069					
	65	9100					
	65	9101					
	65	9102					
	65	9103					
	65	9104					
	65	9105					
	65	9106					
	65	9107					
	65	9108					
	65	9109					
	65	9140					
	65	9141					
	65	9142					
	65	9143					
	65	9144					
	65	9145					
	65	9146					
	65	9147					
	65	9148					
	65	9149					
	65	9160					
	65	9161					
	65	9162					
	65	9163					
	65	9164					
	65	9165					
	65	9166					
	65	9167					
	65	9168					
	65	9169					
	65	9180					
	65	9181					
	65	9182					
	65	9183					
	65	9184					
	65	9185					
	65	9186					
	65	9187					
	65	9188					
	65	9189					
	65	9199					
	65	9237					
	65	9238					

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	*SN Range Start*	*SN Range Stop*	*Primary International DPC*	*Secondary International DPC*	*MVNO Number*
MSISDN number ranges (s)							
	65	9239					
	65	9240					
	65	9241					
	65	9242					
	65	9243					
	65	9244					
	65	9245					
	65	9246					
	65	9247					
	65	9248					
	65	9249					
	65	9270					
	65	9271					
	65	9272					
	65	9335					
	65	9336					
	65	9337					
	65	9338					
	65	9339					
	65	9380					
	65	9381					
	65	9382					
	65	9383					
	65	9384					
	65	9385					
	65	9386					
	65	9387					
	65	9388					
	65	9389					
	65	9420					
	65	9421					
	65	9422					
	65	9423					
	65	9424					
	65	9425					
	65	9426					
	65	9427					
	65	9428					
	65	9429					
	65	9450					
	65	9451					
	65	9452					
	65	9453					
	65	9454					
	65	9455					

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	*SN Range Start*	*SN Range Stop*	*Primary International DPC*	*Secondary International DPC*	*MVNO Number*
MSISDN number ranges (s)							
	65	9456					
	65	9457					
	65	9458					
	65	9459					
	65	9480					
	65	9481					
	65	9482					
	65	9483					
	65	9484					
	65	9485					
	65	9486					
	65	9487					
	65	9488					
	65	9489					
	65	9499					
	65	9800					
	65	9813					
	65	9814					
	65	9850					
	65	9851					
	65	9852					
	65	9853					
	65	9854					
	65	9855					
	65	9856					
	65	9857					
	65	9858					
	65	9859					
	65	9880					
	65	9881					
	65	9882					
	65	9883					
	65	9884					
	65	9885					
	65	9886					
	65	9887					
	65	8754					Yes
	65	8755					Yes
	65	8756					Yes
	65	8757					Yes
	65	8758					Yes
	65	8759					Yes
	65	8760					Yes
	65	8769					Yes
	65	8770					Yes

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	SN Range Start	SN Range Stop	Primary International DPC	Secondary International DPC	MVNO Number
MSISDN number ranges (s)							
	65	8771					Yes
	65	8772					Yes
	65	8785					Yes
	65	8791					Yes
	65	8842					Yes
	65	8843					Yes
Network Nodes Global Title Number Range(s)							
	65	9854					
	65	9024					
MSRN Number Range(s)							
	65	9854					
	65	9024					
	65	9184					
	65	8241					

E. 212 Number series	Mobile Country Code (MCC)	Mobile Network Code (MNC)
	525	05

E. 214 Mobile Global Title (MGT)	Country Code of MGT (CC)	Network Code of MGT (NC)
	65	9854

Does Number Portability apply ?	Yes

Is 15 Digit MSISDN Supported ?	No

USIM SIM Header	896505

E. 164 Number Ranges due to Number Portability	CC	NDC	SN Range Start	SN Range Stop
	65	8		
	65	9		

Additional Information
Fixed Network (PSTN/ISDN) +65 6300, 6400-6409, 6491-6493, 6519-6528, 6618, 6622, 6630, 6633, 6635, 6638-6641, 6644, 6646-6653, 6656, 6667, 6670, 6673-6674, 6678-6680, 6685, 6687, 6689 ,6693, 6696, 6698-6701, 6712, 6720-6729, 6808-6809, 6818, 6820-6829.
IP Telephony +65 3105, 3110, 3112-3113, 3115-3124 and 3126-3152.
MSISDN has a fixed length of 10 digits. In Singapore's networks, a mobile subscriber number (MSISDN) is fully integrated into the Singapore's PSTN network. NDC is not used in Singapore.
StarHub's 2nd IMSI range 52508 and new 15 digits numbering format 6514410-xxxxxxxx are reserved for M2M services.
MSISDN CC NDC, 65 8754 to 65 8760 and 65 8769 to 65 8772 belong to StarHub MVNO.
In case you are using only IP as criteria for your customer billing, please refer to our IP ranges below:
203.116.22.0/26, 203.116.22.64/26, 203.116.22.144/28, 203.116.22.160/27, 203.116.22.224/27, 203.116.42.24/29, 203.116.42.80/28, 203.116.42.96/27, 203.116.42.128/26, 203.116.42.192/26, 203.116.249.128/25, 203.116.249.184/29, 203.116.249.248/29,
203.116.42.64/28, 203.116.42.32/27, 203.116.42.16/29, 203.116.17.96/28, 203.116.17.112/28

History of changes

Date	Description
2019-03-04	StarHub MVNO NDC 65 8842 and 65 8843 added

Date	Description
2018-12-19	Clarification on StarHub's IP address
2018-08-20	StarHub MVNO NDC 65 8785 and 65 8791 added.
2018-05-11	MSISDN CC NDC, 65 8754 to 65 8760 and 65 8769 to 65 8772 belong to StarHub MVNO
2017-12-13	A short explanation on our IP ranges.
2017-09-01	MSISDN CC NDC, 65 8754 to 65 8760 belong to StarHub MVNO.
2015-05-08	New NDCs 65 8789, 65 8790, 65 8829, 65 8830 and 65 8831 added. MSRN 65 8241 reinstated.
2015-02-13	New ASN 131591 added. While waiting for the next new schema version 9.2 to be ready, ASN 131591 is added to Additional Information field in Routing section.
2014-11-06	658241 is removed Network Nodes Global Range.
2014-08-18	658241 is added to Network Nodes Global Range.
2014-01-21	New NDCs: 65 8724, 65 8725, 65 8726, 65 8727 & 65 8729 added. Information on Fixed NDCs updated. StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

INTERNATIONAL SCCP GATEWAY

TADIG code: SGPSH
Section ID: 5 (Optional)
Effective date of change: 2016-04-08

International SCCP carrier list	
SCCP carrier name:	SCCP Carrier
Connectivity information:	Primary
Comments:	STARHUB
MNO TADIG code list:	

DPC info:	
Signature:	TSS2
Type:	STP
International DPC:	5.47.5
Comments:	This applies to operators who have direct SCCP routing with StarHub.

DPC info:	
Signature:	KBS2
Type:	STP
International DPC:	5.47.4
Comments:	This applies to operators who have direct SCCP routing with StarHub.

SCCP carrier name:	SCCP Carrier
Connectivity information:	Backup
Comments:	BICS
MNO TADIG code list:	

DPC info:	
Signature:	BRUSSEL/H
Type:	SCCP
International DPC:	2.13.1
Comments:	

DPC info:	
Signature:	BRUSSEL/H
Type:	SCCP
International DPC:	2.14.7
Comments:	

SCCP carrier name:	SCCP Carrier
Connectivity information:	Backup
Comments:	ORANGE
MNO TADIG code list:	

DPC info:	
Signature:	PARIS TK1
Type:	SCCP
International DPC:	2.202.3
Comments:	

DPC info:	
Signature:	REIMS TK2
Type:	SCCP
International DPC:	2.202.4
Comments:	

SCCP carrier name:	SCCP Carrier
Connectivity information:	Backup
Comments:	TATA (Teleglobe)
MNO TADIG code list:	

DPC info:	
Signature:	VPD
Type:	SCCP
International DPC:	3.4.1
Comments:	ITU

DPC info:	
Signature:	VPD
Type:	SCCP
International DPC:	1.44.30
Comments:	ANSI

History of changes

Date	Description
2016-04-08	New comment for Type: STP added.
2015-06-26	Added existing SCCP information.
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

SUBSCRIBER IDENTITY AUTHENTICATION

TADIG code: SGPSH
Section ID: 8 (Optional)
Effective date of change: 2014-01-21

Authentications	Performed (Yes / No)
Authentication performed for Roaming subscribers at the commencement of GSM service	Yes
Authentication performed for roaming subscribers in case of GPRS	Yes
A5 Cipher Algorithm version in use	A5/1,A5/2

History of changes

Date	Description
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

MOBILE APPLICATION PART (MAP)

TADIG code: SGPSH
Section ID: 10 (Optional)
Effective date of change: 2014-01-21

Interworking specifically for roaming				
Application context name	**Current version in**			**Comments**
	Inbound roaming		**Outbound roaming**	
	MSC/VLR	**SGSN**	**Outbound roaming**	
networkLocUp	MAPv3	N/A	MAPv3	
roamingNumberEnquiry	MAPv3	N/A	MAPv3	
InfoRetrieval	MAPv3	-	MAPv3	
subscribeDataMngt	MAPv3	-	MAPv3	
networkFunctionalSs	MAPv2	N/A	MAPv2	
mwdMngt	MAPv3	-	MAPv3	
shortMsgMT-Relay (called shortMsgRelay in v1)	MAPv2	-	MAPv3	
shortMsgMO-Relay (called shortMsgRelay in v1)	MAPv3	-	MAPv3	
ss-InvocationNotification	MAPv3	N/A	-	
subscriberInfoEnquiry	MAPv3	-	MAPv3	
gprsLocationUpdate	N/A	MAPv3	-	
locationCancellation	MAPv3	MAPv3	MAPv3	
msPurging	MAPv3	-	MAPv2	
reset	MAPv2	-	MAPv2	
networksUnstructuredSs	-	N/A	-	
reporting	-	N/A	-	
callCompletion	-	N/A	-	
istAlerting	-	N/A	-	
service Termination	-	N/A	-	
locationSvcGateway	N/A	N/A	-	
mm-EventReporting	-	N/A	-	
authenticationFaillureReport	-	-	-	
imsiRetrieval	-	N/A	-	
gprsNotifyContext	N/A	-	-	
gprsLocationInfoRetrieval	N/A	-	-	
faillureReport	N/A	-	-	
secureTransportHandling	-	-	-	

History of changes

Date	Description
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

NETWORK ELEMENTS INFORMATION

TADIG code: SGPSH
Section ID: 13 (Optional)
Effective date of change: 2018-08-20

Node type	Node ID	GT address / Address range	IP address / Address range	IPv6 address / Address range	Vendor info	SW / HW version	UTC offset
HLR		65 98540010					+08:00
HLR		65 98540011					+08:00
HLR		65 98541011					+08:00
HLR		65 98541012					+08:00
HLR		65 98541013					+08:00
HLR		65 98541014					+08:00
HLR		65 98541015					+08:00
HLR		65 98541016					+08:00
HLR		65 98541017					+08:00
HLR		65 98541018					+08:00
HLR		65 98541021					+08:00
HLR		65 98541022					+08:00
HLR		65 98541023					+08:00
HLR		65 98541024					+08:00
HLR		65 98541025					+08:00
MMSC		65 90247926					+08:00
MMSC		65 90247972					+08:00
MMSC		65 98541097					+08:00
MSC/VLR		65 90247912					+08:00
MSC/VLR		65 98540002					+08:00
MSC/VLR		65 98540003					+08:00
MSC/VLR		65 98540005					+08:00
MSC/VLR		65 98540006					+08:00
MSC/VLR		65 98540008					+08:00
MSC/VLR		65 98540009					+08:00
MSC/VLR		65 98540023					+08:00
MSC/VLR		65 98540024					+08:00
MSC/VLR		65 98540026					+08:00
MSC/VLR		65 98540028					+08:00
MSC/VLR		65 98541095					+08:00
SGSN-3G		65 98541085	203.116.42.64/26				+08:00
SGSN-3G		65 98541093	203.116.22.160/27				+08:00
SMSC		65 90247944					+08:00
SMSC		65 90247948					+08:00
SMSC		65 90247966					+08:00
SMSC		65 90247967					+08:00
SMSC		65 90247968					+08:00
SMSC		65 90247969					+08:00
SMSC		65 98540020					+08:00
SMSC		65 98540021					+08:00
SMSC		65 98540022					+08:00
SMSC		65 98540025					+08:00
SMSC		65 98540027					+08:00
SMSC		65 98540029					+08:00
SMSC		65 98540034					+08:00
SMSC		65 98540035					+08:00
SMSC		65 98540042					+08:00
SMSC		65 98540045					+08:00
SMSC		65 98541096					+08:00
SMSC		65 98541097					+08:00
SMSC		65 98541098					+08:00
SMSC		65 98541100					+08:00
SMSC		65 98541101					+08:00
SMSC		65 98541102					+08:00
SMSC		65 98541110					+08:00
SMSC		65 98541111					+08:00
SMSC		65 98541112					+08:00
MSC/VLR		65 98540007					+08:00

History of changes

Date	Description
2018-08-20	Added IP address range to SGSN-3G GT. Added MSC/VLR GT 65 9854 0007. GT 65 98540057 and 65 98540058 removed.
2018-05-11	New MMSC +65 98541097 added.
2017-09-01	SGSN-2G+3G 65 90247976-7 removed. 3G 65 98540057-8 updated. SMSC GT 65 98541096 added. StarHub MVNO SMSC numbers added
2016-09-09	New SMSC GT +65 6598541097 and +65 6598541098, and SGSN +65 98541093 are added.
2015-12-22	New MSC/VLR +65 98541095 and SGSN +65 6598541085 added.
2015-08-28	+65 98540023/24/26/28 node type changed to MSC/VLR.
2015-05-08	New NT-HLR GT 6598541011 to 6598541018 and 6598541021 to 6598541025 added.
2014-11-06	SMSC GT 65 8241 is removed.
2014-08-18	No new change. Table is rearranged for easy viewing.
2014-04-30	New MSC/VLR +65 90247912 added.
2014-01-21	MAP Gateway/SMSC Nos: 65 98540023-98540024, 65 98540026 & 65 985440028 are added. StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
2013-08-12	New GMSC nodes GT 6598540002/3 added.

CAMEL INFO

TADIG code: SGPSH
Section ID: 15 (Conditional)
Effective date of change: 2017-09-01

gsmSSF/MSC			
CAP Version supported (Inbound)		**CAP Version supported (Outbound)**	
CAPv1 CAPv2		**CAPv1 CAPv2**	
CAMEL Functionality Information			
Service(s) Name	**SK**	**CAP Version**	**SCP GT addresses**
Voice	85	CAPv2	6590247920 6590247921
MVNO	132	CAPv2	6598541103 6598541104 6598541105 6598541113 6598541114 6598541115
CAPv4 Partial Implementations			
CAMEL Phase 4 CSIs:	**Supported (Yes / No)**		*Planned Date*
MT-SMS-CSI			
MG-CSI			
PSI Enhancements			

History of changes

Date	Description
2017-09-01	StarHub MVNO SCP info added
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

StarHub

Packet Data Services Information

TADIG code: SGPSH
Section ID: 16 (Conditional)
Effective date of change: 2018-08-20

List of APN Operator Identifiers

APN Operator Identifier	Description	Example
mnc005.mcc525.gprs		

List of APN's available for testing and troubleshooting

APN WEB List

APN Credential			APN Type	ISP DNS IP address (primary)	ISP DNS IP address (secondary)
APN	Username	Password			
shwap			H-APN	203.116.1.78	203.116.254.150

APN WAP List

APN Credential			APN Type	WAP Gateway IP address	WAP Server URL	WAP Port ver 1	WAP Port ver 2
APN	Username	Password					
shwap			H-APN	10.12.1.2	http://gee-select.starhubgee.com.sg/wap	9201	80

APN MMS List

APN Credential			WAP Gateway IP address for MMS	Messaging Server URL
APN	Username	Password		
shmms			10.12.1.80	http://mms.starhubgee.com.sg:8002

IPv6 Connectivity Information

	IPv6 PDP Supported	IPv4v6 PDP Supported
SGSN Support	No	No
GGSN Support	No	No

List of 2G/3G QOS profiles

Profile name:	LTE3G
Traffic class:	Interactive
ARP:	3
Evolved ARP support:	Yes
Evolved ARP priority level:	8
Evolved APR preemption vulnerability list:	
Evolved APR preemption capability list:	

GTP Version

SGSN	GTPv1
GGSN	GTPv1

List of Data Service supported

2G Data Services	Multislot Class Capability
-	-

3G Data Services	UE 3G Category
HSDPA	
HSUPA	
3GPS	

Multiple PDP Context Support	
Number of Primary PDP Context	2

History of changes

Date	Description
2018-08-20	Added APN Type.

Date	Description
2018-05-11	2G data reference is removed
2014-02-01	IP range 203.116.42.128/26 missing in previous version reinstated.
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
2013-03-02	APN Operator Identifier corrected. It should read mnc005.mcc525.gprs.

IP - Roaming and IP - Interworking Information
TADIG code: SGPSH
Section ID: 17 (Conditional)
Section is also applicable for the following TADIG codes:
SGPMM

Effective date of change: 2019-03-13

List of All IP address ranges used by PMN for connection to inter - PMN IP backbone	IP Address Range
	203.116.17.112/28
	203.116.17.96/28
	203.116.22.0/26
	203.116.22.144/28
	203.116.22.160/27
	203.116.22.224/27
	203.116.22.64/26
	203.116.249.128/25
	203.116.42.128/26
	203.116.42.16/29
	203.116.42.192/26
	203.116.42.24/29
	203.116.42.32/27
	203.116.42.64/28
	203.116.42.80/28
	203.116.42.96/27
	103.231.48.128/25
	103.4.245.32/29
	115.112.166.16/32
	115.178.160.0/27
	115.178.160.32/27
	115.178.164.32/27
	116.68.0.16/28
	116.68.0.32/28
	185.39.52.24/29
	185.39.54.24/29
	185.81.136.160/28
	192.234.88.112/28
	192.234.88.32/28
	192.234.88.48/28
	192.234.88.96/28
	193.240.51.80/29
	199.255.4.0/24
	203.128.248.0/22
	213.137.159.0/24
	4.15.38.104/29
	203.81.182.248/29

List of Autonomous System Number (ASN):	ASN
	64624
	64851
	38322
	4832
	18004
	9874
	65010
	65450
	61262
	24545
	64562
	6774
	64624
	64851
	38322
	4832
	18004
	9874
	65010
	65450
	61262
	24545
	64562
	6774

List of Autonomous System Number (ASN4B):	ASN4B
	131591
	131591

List of PMN authoritative DNS server IP addresses and names		
IP address	**IPv6 address**	**DNS Name**
203.116.22.244		Primary
203.116.42.28		Secondary

List of GRX Providers	GRX Provider
	Syniverse CMI BBIX

History of changes

Date	Description
2019-03-12	Removal of 115.178.178.128/27,115.178.178.0/27,115.178.178.192/26 and 115.178.178.185/32.
2019-01-09	Please replace 115.178.178.134/27 with 115.178.178.128/27 and 115.178.178.2/27 with 115.178.178.0/27. New IP address range 203.81.182.248/29 added.
2018-12-19	203.116.17.96/28, 203.116.17.112/28, 115.178.178.134/27, 115.178.178.2/27, 115.178.178.192/26 and 115.178.178.185/32 added.
2018-11-12	103.231.48.128/26 replaced by 103.231.48.128/25 and 103.231.49.128/26 replaced by 103.231.49.128/25.
2017-12-18	Previously published IP range 115.178.160.40/27 and 115.178.164.40/27 are invalid. Please implement 115.178.160.32/27 and 115.178.164.32/27 instead.
2017-12-13	IP ranges 115.178.160.0/27, 115.178.160.40/27 and 115.178.164.40/27 added. Old IP ranges 115.178.160.0/19, 115.178.192.0/19 and 115.178.224.0/19 removed. IPX carriers updated.
2017-10-24	Old IP range 27.146.1.0/27, 27.146.1.32/27, 42.153.1.0/24, 183.78.8.0/24 removed. New IP 213.137.159.0/24 added. Old ASN 45960, 64569 removed. New ASN 6774 added.
2017-10-24	Applicable to SGPMM.
2017-09-01	New IP address range 115.112.166.16/32 added. ASN 64562 added. GRX Provider BBIX Info updated.
2016-10-06	DNS IP address 203.116.22.51 and 203.116.22.52 are removed. IP range 193.240.51.81/32, 193.240.51.82/32, 4.15.38.105/32, 4.15.38.106/32 and 103.4.245.32/30 are removed.
2016-10-06	New ASN 24545 added. New IP ranges 192.234.88.48/28, 185.81.136.160/28, 193.240.51.80/29, 4.15.38.104/29, 192.234.88.112/28, 103.4.245.32/29 are added.

Date	Description
2016-09-09	New IP range 103.4.245.32/30 is added.
2016-06-20	New ASN 65450 and 61262 added. New IP range 185.39.52.24/29, 185.39.54.24/29, 193.240.51.81/32, 193.240.51.82/32, 192.234.88.32/28, 192.234.88.96/28, 4.15.38.105/32, 4.15.38.106/32. GRX Provider Info updated.
2016-04-08	New ASN 9874 and 65010 added. New IP range 103.231.49.128/26 added.
2016-02-22	New IP range 203.116.42.16/29, 203.116.42.24/29, 203.116.42.32/27, 203.116.42.64/28, 203.116.22.144/28, 203.116.22.160/27 and 183.78.8.0/24 is added. New ASN 45960 is added. New DNS address 203.116.22.244 (Pri), 203.116.42.28 (Sec) added.
2015-11-07	New ASN 18004, 4832 and 64569 added. New IP Range 27.146.1.0/27, 27.146.1.32/27 and 202.62.29.0/24 added.
2015-08-28	New ASN 22870 for Syniverse GRX migration is added.
2015-06-26	New Inter-PLMN IP added.
2015-05-08	ASN 38322 is added. New IP Range 42.153.1.0/24 is added.
2015-03-04	ASN 64851 is added.
2015-02-13	New ASN 131591 added. While waiting for the next new schema version 9.2 to be ready, ASN 131591 is added to Additional Information field in Routing section.
2014-11-06	New IP Range 103.231.48.128/26 is added. Note: Only applicable when StarHub is HPMN.
2014-11-03	Info for second IMSI range 525-08 (SGPMM) is removed.
2014-08-18	New IP Range 199.255.4.0/24 added. Note: IP add 199.255.4.0/24 ,116.68.0.16/28 and 116.68.0.32/28 are only applicable when StarHub is HPMN.
2014-05-30	New IP address ranges added.
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

MMS Interworking Information

TADIG code: SGPSH
Section ID: 18 (Optional)
Effective date of change: 2018-03-01

MMS Elementa Data

Domain name of MMSC	IP Address	Max. size of MMS allowed	Delivery Report allowed? (Yes / No)	Read Report allowed? (Yes / No)	IP address(es) of Incoming MTA	IP address(es) of Outgoing MTA
imms.mnc005.mcc525.gprs	61.8.235.241	100	Yes	No	61.8.235.241	61.8.235.241

List of MMS IW Hub Provider	MMS IW Hub Provider Name	GT address(es)
	Syniverse	

MMS Elementa Data

Domain name of MMSC	IP Address	Max. size of MMS allowed	Delivery Report allowed? (Yes / No)	Read Report allowed? (Yes / No)	IP address(es) of Incoming MTA	IP address(es) of Outgoing MTA
mms.mnc005.mcc525.gprs	61.8.235.243	100	Yes	No	61.8.235.243	61.8.235.243

List of MMS IW Hub Provider	MMS IW Hub Provider Name	GT address(es)
	Syniverse	

History of changes

Date	Description
2018-05-11	New MMSC Domain name. (Target to go live in June 2018)
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
2013-03-02	MMSC Domain Name corrected. It should read imms.mnc005.mcc525.gprs.

StarHub

LTE Roaming Information
TADIG code: SGPSH
Section ID: 20 (Optional)
Section is also applicable for the following TADIG codes:
SGPMM

Effective date of change: 2018-08-21

IPX Provider Name	IPX DA Realm Used	Diameter Architecture
Syniverse		

Primary IP address of DA	Secondary IP address of DA	

IPX Provider Name	IPX DA Realm Used	Diameter Architecture
CMI		

Primary IP address of DA	Secondary IP address of DA	

IPX Provider Name	IPX DA Realm Used	Diameter Architecture
BBIX		

Primary IP address of DA	Secondary IP address of DA	

Roaming Interconnection

EPC Realms For Roaming	
	epc.mnc005.mcc525.3gppnetwork.org

FQDN Diameter Edge Agent

FQDN	Primary IP Address DEA FQDN	Secondary IP Address DEA FQDN
dra.dra01.epc.mnc005.mcc525.3gppnetwork.org	203.116.249.188	203.116.249.252

S6a Supported without IWF	S6a MAP IWF supported to HSS	S6a MAP IWF supported to MME
true	false	false

S6d used for legacy SGSN	S9 used for PCC
false	false

SMS ITW

SMS delivery over IP	SMS delivery over SGs
false	true

Voice ITW

CSFB

Roaming CS Fallback

Roaming Retry (MTTR)

		HPMN	VPMN
LTE Roaming Agreement Only	LTE Only Roaming Supported	Yes	Yes
2G/3G Roaming Agreement Only	Scenario 2 Supported	Yes	Yes
	Scenario 3 Supported	Yes	Yes
2G/3G/LTE Roaming Agreement	Scenario 1 Supported	Yes	No
	Scenario 2 Supported	Yes	No
	Scenario 3 Supported	Yes	No
	Scenario 4 Supported	Yes	No
	Scenario 5 Supported	Yes	No
	Scenario 6 Supported	Yes	No

List of LTE QOS profiles

Profile name:	LTE
QCI Value List:	8
QOS ARP List:	12
ARP Preemption Vulnerability List:	0
ARP Preemption Capability List:	1

IPv6 Connectivity Information		
	IPv6 PDP Supported	IPv4v6 PDP Supported
MME Support	No	No
SGW Support	No	No
PGW Support	No	No

History of changes

Date	Description
2018-08-21	Correction: EPC realm should read epc.mnc005.mcc525.3gppnetwork.org
2018-08-20	IPX Provider Info added.
2017-10-24	Applicable to SGPMM.
2016-10-06	GSMA new format
2015-05-08	Diameter and LTE QoS Profile List updated.
2014-11-03	Info for second IMSI range 525-08 (SGPMM) is removed.
2014-05-30	New IP Address 203.116.249.252 added.
2014-03-05	2G/3G/LTE Roaming Agreement Scenario 3 & 4 updated.
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
2013-05-04	LTE information is added.

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CONTACT INFORMATION

TADIG code: SGPSH
Section ID: 21 (Optional, Repeating)
Effective date of change: 2019-01-09

List of Roaming Troubleshooting Contact Information				
Roaming Troubleshooting Contact Information				
Location		Singapore		
Office Time Zone in UTC		+08:00		
Office Hours	**Week Day (s)**	**Start Time**		**End Time**
	all week days	00:00:00		23:59:00
Main Contact for Troubleshooting (Office Hours)				
Team Name	**Tel.**	**Mobile**	**Fax**	**Email**
Converged Operation Service Assurance center (COSAC)	6568256640			nmc@starhub.com mnoc@starhub.com
Escalation Contact for Troubleshooting				
Person Name	**Tel.**	**Mobile**	**Fax**	**Email**
CS Core				nwccroaming@starhub.com
24 x 7 Troubleshooting (contact out of Office Hours)				
Team Name	**Tel.**	**Mobile**	**Fax**	**Email**
Converged Operation Service Assurance center (COSAC)	6568256640			nmc@starhub.com mnoc@starhub.com
Roaming Troubleshooting Contact Information				
Location		Singapore		
Office Time Zone in UTC		+08:00		
Office Hours	**Week Day (s)**	**Start Time**		**End Time**
	all week days	00:00:00		23:59:00
Main Contact for Troubleshooting (Office Hours)				
Team Name	**Tel.**	**Mobile**	**Fax**	**Email**
Converged Operation Service Assurance center (COSAC)	6568256640			nmc@starhub.com mnoc@starhub.com
Escalation Contact for Troubleshooting				
Person Name	**Tel.**	**Mobile**	**Fax**	**Email**
PS Core				gprsroaming@starhub.com
24 x 7 Troubleshooting (contact out of Office Hours)				
Team Name	**Tel.**	**Mobile**	**Fax**	**Email**
Converged Operation Service Assurance center (COSAC)	6568256640			nmc@starhub.com mnoc@starhub.com
Roaming Troubleshooting Ticketing System Information				
Ticket system web address				
Ticket system email address				
Additional Contacts				
SCCP Inquires and ordering of SS7 Routes				

	Person Name	**Tel.**	**Mobile**	**Fax**
	Ms. Shu Yen Ho	6568256407		6568217003
	JobTitle		**Email**	
			syho@starhub.com	

Roaming Coordinator

	Person Name	**Tel.**	**Mobile**	**Fax**
	Mr. Joseph Ngai	6568255211		
	JobTitle		**Email**	
			joseph.bb.ngai@starhub.com roaming@starhub.com	
	Person Name	**Tel.**	**Mobile**	**Fax**
	Ms. Katrina Tan	6568255527		
	JobTitle		**Email**	
			katrina.wq.tan@starhub.com roaming@starhub.com	

IREG Tests

	Person Name	**Tel.**	**Mobile**	**Fax**
	Mr. Joseph Ngai	6568255211		
	JobTitle		**Email**	
			joseph.bb.ngai@starhub.com roaming@starhub.com	

Person Name	Tel.	Mobile	Fax
Ms. Katrina Tan	6568255527		
JobTitle	**Email**		
	katrina.wq.tan@starhub.com roaming@starhub.com		
Person Name	**Tel.**	**Mobile**	**Fax**
Ms Hui Khim Tan	6568256271		6568216010
JobTitle	**Email**		
GSM IREG	nwccroaming@starhub.com tanhk@starhub.com		
Person Name	**Tel.**	**Mobile**	**Fax**
Ms Soe Sandar Sein Win	6568256130		6568216010
JobTitle	**Email**		
3G Data/LTE IREG	gprsroaming@starhub.com		

TADIG Tests

Person Name	Tel.	Mobile	Fax
Mr. Joseph Ngai	6568255211		
JobTitle	**Email**		
	joseph.bb.ngai@starhub.com roaming@starhub.com		
Person Name	**Tel.**	**Mobile**	**Fax**
Ms. Katrina Tan	6568255527		
JobTitle	**Email**		
	katrina.wq.tan@starhub.com roaming@starhub.com		
Person Name	**Tel.**	**Mobile**	**Fax**
Mr. Von Jeffrey Bulaon GALVEZ	6568255764		
JobTitle	**Email**		
	lsratingsupport@starhub.com		
Person Name	**Tel.**	**Mobile**	**Fax**
Billing Finance			
JobTitle	**Email**		
	rmbilling@starhub.com		

Contact Person(s) in PMN for GRX Provider

Person Name	Tel.	Mobile	Fax
Mr Satish Kalkunte Sundara Raja	6568256272		6568216010
JobTitle	**Email**		
	gprsroaming@starhub.com		

IR21 Distribution Email Address	Email
	roaming@starhub.com

History of changes

Date	Description
2019-01-09	Contact updated.
2017-10-24	Contact Updated
2017-09-01	GPRS IREG contact updated
2016-06-20	Contact updated.
2016-04-08	Escalation contact is updated.
2015-06-26	IREG Contact is updated.
2014-11-03	GPRS Contact is updated.
2014-05-30	GPRS IREG Contact is updated.
2014-01-21	Contact list updated.
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).
2014-01-21	GPRS IREG contact is updated.
2013-08-12	Contact list is updated.

SECTIONS NOT IN USE

TADIG Code	Section ID	Section Name
SGPSH	6	Domestic SCCP Gateway
SGPSH	7	SCCP Protocol available at PMN for connection for International SS7 Roaming
SGPSH	9	Test Numbers Information
SGPSH	11	MAP Optimal Routing Section
SGPSH	12	MAP Inter Operator SMS Enhancement
SGPSH	14	USSD Information
SGPSH	19	WLAN Information
SGPSH	22	Hosted Networks
SGPSH	23	M2M Roaming Information
SGPSH	24	MVNO Information
SGPSH	26	VoLTE Roaming Information Section

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NETWORK

TADIG code: SGPMM
Section ID: 2 (Mandatory, Repeating)

TADIG code:	SGPMM
Network name:	StarHub Mobile Pte Ltd
Network type:	Terrestrial
Technology:	**Frequency list:**
2G-GSM frequencies:	Unsupported
3G-UTRA/FDD frequencies:	1 - IMT 2.1 GHz, 8 - 900 MHz
3G-UTRA/TDD frequencies:	Unsupported
4G-E-UTRAN frequencies:	1 - IMT 2.1 GHz, 3 - DCS 1800, 7 - 2.6 GHz, 38 - TDD 2.6 GHz
4G-E-UTRAN-MIoT-LTE-M frequencies:	Unsupported
4G-E-UTRAN-MIoT-NB-IOT frequencies:	Unsupported
Presentation of country initials and MNN:	SGP StarHub
Abbreviated MNN:	StarHub

NETWORK INFORMATION

TADIG code: SGPMM
Section ID: 3 (Mandatory)

The following information refer to the network identified by TADIG code SGPMM

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ROUTING INFORMATION

TADIG code: SGPMM
Section ID: 4 (Mandatory)
Effective date of change: 2015-03-25

CCITT E.164 Number series	Country Code (CC)	National Destination Code (NDC)	SN Range Start	SN Range Stop	Primary International DPC	Secondary International DPC	MVNO Number
MSISDN number ranges (s)							
	65	14410					
Network Nodes Global Title Number Range(s)							
	65	9854					
	65	9024					
MSRN Number Range(s)							
	65	9854					
	65	9024					
	65	9184					
	65	8241					

E. 212 Number series	Mobile Country Code (MCC)	Mobile Network Code (MNC)
	525	08

E. 214 Mobile Global Title (MGT)	Country Code of MGT (CC)	Network Code of MGT (NC)
	65	9854

Does Number Portability apply ?	Yes

Is 15 Digit MSISDN Supported ?	No

Additional Information

StarHub's 2nd IMSI range 52508 and new 15 digits numbering format 6514410-xxxxxxxx are reserved for M2M services.

History of changes

Date	Description
2015-05-08	MSRN details added. Bogus ASN 23456 is removed.
2015-02-13	New ASN 131591 added. While waiting for the next new schema version 9.2 to be ready, ASN 131591 is added to Additional Information field in Routing section.
2014-11-06	658241 is removed Network Nodes Global Range.
2014-08-18	658241 is added to Network Nodes Global Range.
2014-01-21	StarHub introduced 2nd IMSI range and TADIG code (M2M roaming).

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Packet Data Services Information
TADIG code: SGPMM
Section ID: 16 (Conditional)
Effective date of change: 2018-08-20

List of APN Operator Identifiers

APN Operator Identifier	Description	Example
mnc008.mcc525.gprs		

List of APN's available for testing and troubleshooting

APN WEB List

APN Credential			APN Type	ISP DNS IP address (primary)	ISP DNS IP address (secondary)
APN	Username	Password			
SHM2M			H-APN	203.116.1.78	203.116.254.150

APN WAP List

APN Credential			APN Type	WAP Gateway IP address	WAP Server URL	WAP Port ver 1	WAP Port ver 2
APN	Username	Password					

APN MMS List

APN Credential			WAP Gateway IP address for MMS	Messaging Server URL
APN	Username	Password		

APN M2M List

APN	Username	Password	ISP DNS IP Address Primary	ISP DNS IP Address Secondary
SHM2M				

IPv6 Connectivity Information

	IPv6 PDP Supported	IPv4v6 PDP Supported
SGSN Support	No	No
GGSN Support	No	No

List of 2G/3G QOS profiles

Profile name:	LTE3G
Traffic class:	Interactive
ARP:	3
Evolved ARP support:	Yes
Evolved ARP priority level:	8
Evolved APR preemption vulnerability list:	
Evolved APR preemption capability list:	

GTP Version

SGSN	GTPv1
GGSN	GTPv1

List of Data Service supported

2G Data Services	Multislot Class Capability
-	-

3G Data Services	UE 3G Category
HSDPA	
HSUPA	
3GPS	

Multiple PDP Context Support

Number of Primary PDP Context	2

History of changes

Date	Description
2018-08-20	Added APN Type.
2018-05-11	2G Data reference is removed.
2014-11-03	Info for second IMSI range 525-08 (SGPMM) is added.

SECTIONS NOT IN USE

TADIG Code	Section ID	Section Name
SGPMM	5	International SCCP Gateway
SGPMM	6	Domestic SCCP Gateway
SGPMM	7	SCCP Protocol available at PMN for connection for International SS7 Roaming
SGPMM	8	Subscriber Identity Authentication
SGPMM	9	Test Numbers Information
SGPMM	10	Mobile Application Part (MAP) Section
SGPMM	11	MAP Optimal Routing Section
SGPMM	12	MAP Inter Operator SMS Enhancement
SGPMM	13	Network Elements Information
SGPMM	14	USSD Information
SGPMM	15	CAMEL Information
SGPMM	17	IP-Roaming and IP-Interworking Information
SGPMM	18	MMS Interworking Information
SGPMM	19	WLAN Information
SGPMM	20	Roaming in Long Term Evolution
SGPMM	22	Hosted Networks
SGPMM	21	Contact Information
SGPMM	23	M2M Roaming Information
SGPMM	24	MVNO Information
SGPMM	26	VoLTE Roaming Information Section