

## **WAVE.GSN**

GPRS Support Node GGSN & SGSN

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ADC's WAVE.GSN (GPRS Support Node) is a key component for supporting General Packet Radio Service (GPRS) and is ideally suited for small size GSM/GPRS networks. WAVE.GSN is standard compliant, fully manageable and a cost-effective platform engineered to facilitate easy deployment in community and enterprise GPRS networks. The system is run-time configurable to function as a Serving GPRS Support Node (SGSN), a Gateway GPRS Support Node (GGSN) or a combined GSN (SGSN + GGSN).

ADC's WAVE.GSN (GPRS Support Node) is a cost effective, fully manageable product that is easily integrated with an existing GSM network to provide GPRS services in corporate and community networks. It offers a complete set of standard GPRS interfaces related to a GSN node. WAVE.GSN also supports its signaling and data interfaces over Frame Relay (FR) and SS7 or the Internet Protocol (IPv4) to provide seamless integration with packet-based networks. Plus, ADC Wireless' WAVE.GSN provides both local management capability with a GUI-based local manager and a remote management with an SNMP agent. The WAVE.GSN Local Manager implements GUI based statistics reporting, configuration management, alarms, status and user actions.

SPEC SHEET



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# WAVE.GSN

## GPRS Support Node GGSN & SGSN

ADC Wireless' WAVE.GSN is run-time configurable to function as a Serving GPRS Support Node (SGSN), a Gateway GPRS Support Node (GGSN) or a combined GSN (SGSN + GGSN). Interface Specifications: ETSI TS 101 299, GPRS BSS-SGSN Interface; Network Service (GSM 08.16 version 7.1.0 Release 1998)

ETSI TS 101 343, GPRS BSS-SGSN; BSS GPRS Protocol (BSSGP) (GSM 08.18 version 7.1.0 Release 1998)

Draft ETSI EN 300 940, Digital cellular telecommunications system (Phase 2+);

Mobile radio interface signaling layer 3 specification (GSM 04.08 version 7.4.0 Release 1998)

ETSI TS 101 345, Digital cellular telecommunications system (Phase 2+);

General Packet Radio Service (GPRS); Serving GPRS Support Node (SGSN) – Visitors Location Register (VLR); Gs interface network service specification (GSM 09.16 version 7.0.1 Release 1998)

Draft ETSI EN 301 347, Digital cellular telecommunications system (Phase 2+);

General Packet Radio Service (GPRS); GPRS Tunneling Protocol (GTP) across the Gn and Gp Interface (GSM 09.60 version 7.3.0 Release 1998)

ETSI TS 101 297, Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) – Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDP) (GSM 04.65 version 7.1.1 Release 1998)

ETSI TS 101 351, Digital cellular telecommunications system (Phase 2+);

General Packet Radio Service (GPRS); Mobile Station – Serving GPRS Support Node (MS-SGSN) Logical Link Control (LLC) layer specification (GSM 04.64 version 7.1.1 Release 1998)

ETSI TS 100 974 V7.1.0 (1999-08) Technical Specification Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification

(GSM 09.02 version 7.1.0 Release 1998)

SS7 TCAP specification ITU-T Q.771 – Q.774, ETSI ETS 300 134, ETS 300 287, ANSI T1.114

Higher capacity levels can be supported via multiple GSNs to form a distributed network.



# WAVE.GSN

## GPRS Support Node GGSN & SGSN

7/08 • 106422AE WAVE.GSN

Configuration Options	Combined GSN (WAVE.GSN)
	SGSN (WAVE.SGSN)
	GGSN (WAVE.GGSN)
SGSN Interconnections	Base Station Subsystem/PCU (Gb)
	HLR/EIR (Gr and Gf)
	MSC/VLR (Gs)
	Charging Gateway (Ga)
	Other GSN (Gn and Gp)
SGSN Supported Features	GPRS Mobility Management (GMM)
	Session Management (SM)
	Short Message Service (SMS)
	Sub-Network Dependent Convergence Protocol (SNDCP); compression, S-CDR
	Standard GPRS Ciphering
	Quality of Service (QOS)
	Restart and Recovery Procedures
GGSN Interconnections	Internet (Gi)
	HLR (Gc)
	Charging Gateway (Ga)
	Other GSN (Gn and Gp)
GGSN Supported Features	Dynamic Addressing using DHCP
	Authentication using External RADIUS
	RADIUS Accounting
	Network Initiated PDP context activation
	Restart and Recovery Procedures
Management	GUI based Local Manager
	Remote management with an SNMP agent
	Statistics reporting
	Configuration Management
	Alarms
	Status
	User Action
Major Interfaces	Gb over ITU-T Frame Relay or IPv4
	Gr, Gs, Gd over ITU SS7 or IETF SIGTRAN suit
	Ga, Gn, Gp, Gc, Gi over IP (Ethernet)
	Remote GSN admin via SNMP agent over IP
	Physical I/F 4-8 E1 or T1 ports and 2 Ethernet ports

SPEC SHEET

Hardware Platform	Industrial Grade PC Platform
	2.0 GHz P4 Processor with 1GB RAM
	20 GB hard drive
	Network cards
	DVD-RW drive
	19" rack mount with 2U form factor
	Monitor and keyboard for Local Manager
	1-2 Adax HDC card (4 E1 or T1 ports per card) for FR or SS7
	Red Hat Linux ES 4 (pre-loaded)
Capacity	WAVE.GSN 300: 300 attached users and 500 PDP contexts
	WAVE.GSN 1000: 1000 attached users and 1500 PDP contexts
	WAVE.GSN 3000: 3000 attached users and 4500 PDP contexts
	WAVE.GSN 5000: 5000 attached users and 7500 PDP contexts
	WAVE.GGSN up to 15000 active users
	WAVE.SGSN up to 50000 attached users



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