We change the shape of the world

Technical Datasheet	NovaTec S5+ 	NovaTec S6 	NovaTec S20 / S20+ 

Mechanical Data	S5+	S6	S20 / S20+
Width x Depth x Height	19" chassis: 480 x 220 x 60 mm	19“ chassis: 480 x 220 x 135 mm	19“ chassis: 480 x 235 x 265 mm
	Desk top or wall-mounted chassis: 365 x 220 x 60 mm		
Rack Units	1,5 RU	3 RU	6 RU
Weight **(depending on expansion stage)**	2 up to 4 kg	7 up to 12 kg	7 up to 18 kg
Fastening Method	Screwing in a 19” rack or desktop model S5+: wall-mounted chassis: wall holders		
Construction	Modular assembly with plug-in modules and sub-modules		
Electrical Data	**S5+**	**S6**	**S20 / S20+**
Power supply without redundance			
Power Supply	100 – 240 V~ 50 to 60 Hz	100 – 240 V~ 47 to 63 Hz	230 V~ (115 V~) ± 10% 47 to 400 Hz to 48 $V_{=}$
Power Input	0,7 A~, 42 to 80 VA	3 A at 230 V~ 6 A at 115 V~	506 VA (2,2 A) at 230 V~ 483 VA (4,2 A) at 115 V~ max. 8 A at 48 $V_{=}$
Power supply redundant			
Current supply per power supply	----	115-230 ~	115-230 V~
Power input	----	Nominal: 135 VA Max: 210 VA	Nominal: 380 VA Max: 427 VA
Characteristics	----	• Temperature controlled airing in front plate • Integrated active fuse separation between the power supplies • Frontal mains connection	
Electric Supply	Rubber Connector (IEC 320)	Rubber Connector (IEC 320)	Rubber Connector (at 230 V~ and 115 V~)
Earthing	Separately via earth cable with a cross section of min. 2.5 mm^2		
Overvoltage Protection	Internal overvoltage protection		
Available Interfaces **(depending on expansion stage)**	• 1 x V.24 (CCU3) • 1x USB (CCU4) • 1 x Ethernet according to IEEE 802.3/802.3u (CCU3, MCU, V4U and BCU) • 2 x Ethernet according to IEEE 802.3/802.3u/802.3ab/802.3x (CCU4) • ISDN BRI, EDSS1 (applicable in all CCU3/, MCU, V4U and CAU) • ISDN PRI, EDSS1 (applicable in all CCU3/4, MCU, V4U and CAU) • ISDN U_0, EDSS1 (applicable with all CCU3/4, MCU, V4U und CAU) • Analogue interfaces (applicable in all CCU3/4, MCU, V4U und CAU) • GSM (not applicable in CCU4)		
BRI Interface	• According to CTR 3, TBR 3, ITAAB • Supply S5+: 0 V or external with the USS (feeding unit) • Supply S6, S20/S20+: 40 V, 50 mA with the DC4 module 0 V without DC4 module • Range: max. 220 m (passive bus) max. 900 m (extended passive bus) max. 1000 m (point-to-point)		

NovaTec Kommunikationstechnik GmbH
Technologiepark 9 / DE-33100 Paderborn
www.novatec.de / info@novatec.de

Electrical Data	S5+	S6	S20 / S20+
PRI Interface	• According to CTR 4 A1, 98/520/EG • Range: max. 1000 m using a 0,6 mm cable		
U Interface (ULU module)	• According to ANSI T1.601, CTR 3, TBR 3 (2B1Q) • Supply S5+: 0 V • Supply S6, S20/S20+: 0 V or 110 V ± 5 V, 25 mA (depending on module) • Range: max. 8000 m using a 0,6 mm cable • Max. allowed cable attenuation: 40 dB/40 kHz		
U0 interface (U0 board)	• According to ANSI T1.601, CTR 3, TBR 3 (2B1Q) • If supply is available: 72 V ± 5 V, 30 mA • Range: max. 8000 m using a 0,6 mm cable • Max. allowed cable attenuation: 40 dB (80 kHz)		
Uk0 interface (Uk0 board)	• According to ETSI TS 102 080 V1.3.1 (1998), ITU-T G.961 (1995) (4B3T) • If supply is available: 72 V ± 5 V, 30 mA • Range: max. 6000 m using a 0,6 mm cable • Max. allowed cable attenuation: 35 dB (120kHz)		
Up0 Interface	• Electronic Manufacturing Industry Association of Germany, Information & Communication Technology Group (ZVEI Zentralverband Elektrotechnik, Fachverband Informations- und Kommunikationstechnik (I+K Forum)). *ZVEI Documentation DKZ-N; Interfaces and signaling protocols for ISDN telecommunication installations. (only available in German under title: ZVEI Dokumentation DKZ-N; Schnittstellen und Signalisierungsprotokolle für Telekommunikationsanlage im ISDN)*, Mai 1989. Volume IV: DKZ-N part 1.2, DKZ-N2 part 2.2. • The transmission via this interface is only effected in half duplex operation. • Supply: 40 V, 50 mA when using the DC4 module 0 V without DC4 module • Range: ca. 2 to 4 km		
Analogue Interface	• Automatic identification between IWV and MFV (ETSI Standards ETSI ES 201 235-1,2 V1.1.1) • Range up to 10,000 m (depending on cable type) • High ringing voltage with up to 5 US REN (Ringer Equivalent Number) according AT&T / 125 V Peak ringing voltage and protection from temperature rise • Adjustment of the line impedance for 15 countries (Austria, ..., Germany, ..., USA) • Caller ID after Bellcore/Telcordia GR-30-CORE Bell202 FSK CID Coding and ETSI 300-659-1/2/3 V1.3.1 V.23 FSK Coding for transmission of CID • Call charge pulse is 12/16 kHz configurable • Modem standards up to V.90 • Fax standards up to V.34 • Fax/Modem/Speech identification (Fax/Modem Switch)		
GSM Interface	• GSM-Class Small MS • Dualband EGSM900 and GSM 1800 (GSM-Phase 2+) • Class 4 (2W) for EGSM900 • Class 1 (1W) for GSM1800 • Half Rate (ETS 06.20), Full Rate (ETS 06.10) • Extended Full Rate (ETS 06.50 / 06.60 / 06.80) • Output: 900 MHz = 2 Watt • Output: 1800 MHz = 1 Watt • Speech-Codec		
IP Interface	• SIP 2.0 → RFC3261 • ITU V.110 → data interface between ISDN, IP and GSM (GSM only with CCU3) • TLS and sRTP		

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Electrical Data	S5+	S6	S20 / S20+
Clock Accuracy CCU3	• Worst Case: +/- 50 ppm • Temp. Drift: +/- 25 ppm at -20°C to +70°C • Pull Range: +/- 100 ppm Clock accuracy with RMCS option: • Long period (2 days) measurement: +/- 0.5 ppm (5 * 10-7) • Worst Case and guaranteed: +/- 5 ppm (5 * 10-6)		
Clock Accuracy CCU4	• Worst Case: +/- 2ppm at 0°C to +40°C • Pull Range: +/- 100 ppm Clock accuracy RMCS option: • Long period (2 days) measurement: +/- 0.5 ppm (5 * 10-7) • Worst Case and guaranteed: +/- 5 ppm (5 * 10-6)		
Encryption (SIP Gateway only)	• SRTP according to RFC3711 and RFC4711 (AES-CM-128 / HMAC-SHA1-32) • TLS Version 1.0 according to RFC2246 and RFC3268 Key Agreement: RSA and Diffie Hellmann Cipher Suite: AES, DES and 3DES Certificate: X509v3 Hash Functions : SHA and MD5		
Codec and Speech Compression	• G.711 incl. Annex I (BFI) and Annex II (VAD/CNG) • G.726 incl. VAD/CNG, BFI error concealment and payload support RTP according "RFC 3551" • G.728, 16 kbit/s • G.729 A/B, 8 kbit/s • Fax Relay, T.38 support V.21, V.27ter, V.29 and V.17 (only CCU3) • 10, 20 und 30 ms Voice Packet size (all Codecs, upstream) configurable • CCU3: Adaptive/ Fixed Jitter Buffer maximal 200 msec • CCU4: Adaptive Jitter Buffer max. 180 msec, fixed Jitter Buffer max. 300 msec • Jitter Buffer inband Modem Support • RTP/SRTP Protocol Support according to RFC3550 and RFC3711 • Payload Byte Counter (H248.1 Annex E) • X-CCD & Clear Mode for data transmission • Silence Compression • Comfort Noise Generation		
Analogue Signalling	• The Near Line Echo Canceller (16 msec) is compatible with applicable ITU-T G.165 and G.168 standards. • Caller ID Sender (CIDS), V.23 and Bel202 • Caller ID Receiver (CIDR), V.23 and Bel202 • DTMF/AT Generator • DTMF Receiver (DTMFR)) according to ITU-T Q.23. • Universal Tone Generator (UTG) • Universal Tone Detector (UTD) according to ITU-T V.8 • Text Phone V.18 A Detector • Call Progress Tone Detector (CPTD) • Answering Tone Detector (ATD) • Digital Identification Signal (DIS) V.21 Detector • DTMF Event Support according to RFC2833		

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Environmental Specifications	S5+	S6	S20 / S20+
Storage and Transport	-20° C up to +90° C 0% up to 95% relative humidity (not condensing)		
Operation	+5° C up to +40° C 0% up to 95% relative humidity (not condensing)		
Max./Min. Temperature	0 up to 40° C		
Heat Loss (with power supplies without redundancy)	115 kJ / 32 Wh	796 kJ / 221 Wh	2380 kJ / 661 Wh
Heat Loss (with redundant power supplies)	---	Nominal: 205 kJ / 57 Wh Max.: 837 kJ / 233 Wh	Nominal: 335 kJ / 93 Wh Max.: 2360 kJ / 656 Wh

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