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<b>Technical Datasheet</b>	<b>NovaTec S5+</b>	<b>NovaTec S6</b>	<b>NovaTec S20 / S20+</b>
			

<b>Mechanical Data</b>	<b>S5+</b>	<b>S6</b>	<b>S20 / S20+</b>
<b>Width x Depth x Height</b>	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		
<b>Rack Units</b>	1,5 RU	3 RU	6 RU
<b>Weight (depending on expansion stage)</b>	2 up to 4 kg	7 up to 10 kg	7 up to 15,8 kg
<b>Fastening Method</b>	Screwing in a 19" rack or desktop model S5+: wall-mounted chassis: wall holders		
<b>Construction</b>	Modular assembly with plug-in modules and sub-modules		
<b>Electrical Data</b>	<b>S5+</b>	<b>S6</b>	<b>S20 / S20+</b>
<b>Power Supply</b>	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 <sub>-</sub>
<b>Power Input</b>	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 <sub>-</sub>
<b>Electric Supply</b>	Rubber Connector (IEC 320)	Rubber Connector (IEC 320)	Rubber Connector (at 230 V~ and 115 V~)
<b>Earthing</b>	Separately via earth cable with a cross section of min. 2.5 mm <sup>2</sup>		
<b>Overvoltage Protection</b>	Internal overvoltage protection		
<b>Available Interfaces (depending on expansion stage)</b>	<ul style="list-style-type: none"> <li>• 1 x V.24 (CCU-3)</li> <li>• 1 x Ethernet according to IEEE 802.3/802.3u (CCU-3, MCU, V4U and BCU)</li> <li>• ISDN BRI, EDSS1 (applicable in all CCU-3, MCU, V4U and CAU)</li> <li>• ISDN PRI, EDSS1 (applicable in all CCU-3, MCU, V4U and CAU)</li> <li>• ISDN U<sub>0</sub>, EDSS1 (applicable in all CCU-3, MCU, V4U und CAU)</li> <li>• Analogue interfaces (applicable in all CCU-3, MCU, V4U und CAU)</li> <li>• GSM</li> </ul>		
<b>BRI Interface</b>	<ul style="list-style-type: none"> <li>• According to CTR 3, TBR 3, ITAAB</li> <li>• Supply S5+: 0 V or external with the USS (feeding unit)</li> <li>• Supply S6, S20/S20+: 40 V, 50 mA with the DC4 module 0 V without DC4 module</li> <li>• Range: max. 220 m (passive bus) max. 900 m (extended passive bus) max. 1000 m (point-to-point)</li> </ul>		
<b>PRI Interface</b>	<ul style="list-style-type: none"> <li>• According to CTR 4 A1, 98/520/EG</li> <li>• Range: max. 1000 m using a 0,6 mm cable</li> </ul>		
<b>U Interface</b>	<ul style="list-style-type: none"> <li>• According to ANSI T1.601, CTR 3, TBR 3 (2B1Q)</li> <li>• Supply S5+: 0 V</li> <li>• Supply S6, S20/S20+: 0 V or 110 V ± 5 V, 25 mA (depending on module)</li> <li>• Range: max. 8000 m using a 0,6 mm cable</li> <li>• Max. allowed cable attenuation: 40 dB/40 kHz</li> </ul>		



Electrical Data	S5+	S6	S20 / S20+
<b>Analogue Interface</b>	<ul style="list-style-type: none"> <li>• Automatic identification between IWV and MFV (ETSI Standards ETSI ES 201 235-1,2 V1.1.1)</li> <li>• Range up to 10,000 m (depending on cable type)</li> <li>• High ringing voltage with up to 5 US REN (Ringer Equivalent Number) according AT&amp;T / 125 V Peak ringing voltage and protection from temperature rise</li> <li>• Adjustment of the line impedance for 15 countries (Austria, ..., Germany, ..., USA)</li> <li>• Caller ID after Bellcore/Telcordia GR-30-CORE <u>Bell202 FSK</u> CID Coding and ETSI 300-659-1/2/3 V1.3.1 <u>V.23 FSK</u> Coding for transmission of CID</li> <li>• Call charge pulse is 12/16 kHz configurable</li> <li>• Modem standards up to V.90</li> <li>• Fax standards up to V.34</li> <li>• Fax/Modem/Speech identification (Fax/Modem Switch)</li> </ul>		
<b>GSM Interface</b>	<ul style="list-style-type: none"> <li>• GSM-Class Small MS</li> <li>• Dualband EGSM900 and GSM 1800 (GSM-Phase 2+)</li> <li>• Class 4 (2W) for EGSM900</li> <li>• Class 1 (1W) for GSM1800</li> <li>• Half Rate (ETS 06.20), Full Rate (ETS 06.10)</li> <li>• Extended Full Rate (ETS 06.50 / 06.60 / 06.80)</li> <li>• Output: 900 MHz = 2 Watt</li> <li>• Output: 1800 MHz = 1 Watt</li> <li>• Speech-Codec</li> </ul>		
<b>IP Interface</b>	<ul style="list-style-type: none"> <li>• SIP 2.0 → RFC3261</li> <li>• ITU V.110 → data interface between ISDN, IP and GSM</li> <li>• TLS and sRTP</li> <li>• Optional GPS receiver for synchronisation</li> </ul>		
<b>Clock Accuracy</b>	<p>Clock accuracy <b>without</b> GPS synchronisation:</p> <ul style="list-style-type: none"> <li>• Worst Case: +/- 50 ppm</li> <li>• Temp. Drift: +/- 25 ppm at -20°C to +70°C</li> <li>• Pull Range: +/- 100 ppm</li> </ul> <p>Clock accuracy <b>with</b> GPS synchronisation:</p> <ul style="list-style-type: none"> <li>• Long period (2 days) measurement: +/- 0.5 ppm (5 * 10<sup>-7</sup>)</li> <li>• Measured maximum short time variations caused by the GPS receiver: +/- 2 ppm (2 * 10<sup>-6</sup>)</li> <li>• Worst Case and guaranteed: +/- 5 ppm (5 * 10<sup>-6</sup>)</li> </ul>		
<b>Encryption (SIP Gateway only)</b>	<ul style="list-style-type: none"> <li>• SRTP according to RFC3711 and RFC4711 (AES-CM-128 / HMAC-SHA1-32)</li> <li>• TLS Version 1.0 according to RFC2246 and RFC3268</li> </ul> <p>Key Agreement: RSA and Diffie Hellmann            Cipher Suite: AES, DES and 3DES            Certificate: X509v3            Hash Functions : SHA and MD5</p>		



Electrical Data	S5+	S6	S20 / S20+
<b>Codec and Speech Compression</b>	<ul style="list-style-type: none"> <li>• G.711 incl. Annex I (BFI) and Annex II (VAD/CNG)</li> <li>• G.726 incl. VAD/CNG, BFI error concealment and payload support RTP according "RFC 3551"</li> <li>• G.728, 16 kbit/s</li> <li>• G.729 A/B, 8 kbit/s</li> <li>• Fax Relay, T.38 support V.21, V.27ter, V.29 and V.17</li> <li>• 30 ms Voice Packet size (all Codecs, upstream)</li> <li>• Adaptive/ Fixed Jitter Buffer maximal 200 msec</li> <li>• Jitter Buffer inband Modem Support</li> <li>• RTP/SRTP Protocol Support according to RFC3550 and RFC3711</li> <li>• Payload Byte Counter (H248.1 Annex E)</li> <li>• X-CCD &amp; Clear Mode for data transmission</li> <li>• Silence Compression</li> <li>• Comfort Noise Generation</li> </ul>		
<b>Analogue Signalling</b>	<ul style="list-style-type: none"> <li>• The Near Line Echo Canceller (16 msec) is compatible with applicable ITU-T G.165 and G.168 standards.</li> <li>• Caller ID Sender (CIDS), V.23 and Bel202</li> <li>• Caller ID Receiver (CIDR), V.23 and Bel202</li> <li>• DTMF/AT Generator</li> <li>• DTMF Receiver (DTMFR) ) according to ITU-T Q.23.</li> <li>• Universal Tone Generator (UTG)</li> <li>• Universal Tone Detector (UTD) according to ITU-T V.8</li> <li>• Text Phone V.18 A Detector</li> <li>• Call Progress Tone Detector (CPTD)</li> <li>• Answering Tone Detector (ATD)</li> <li>• Digital Identification Signal (DIS) V.21 Detector</li> <li>• DTMF Event Support according to RFC2833</li> </ul>		
Environmental Specifications	S5+	S6	S20 / S20+
<b>Storage and Transport</b>	-20° C up to +90° C 0% up to 95% relative humidity (not condensing)		
<b>Operation</b>	+5° C up to +40° C 0% up to 95% relative humidity (not condensing)		
<b>Max./Min. Temperature</b>	0 up to 40° C		
<b>Heat Loss</b>	64 J	270 J	360 J