



ISDN

ISDN Network Termination

- NTBA, NT1Q
- NTBA plug-in module/NT1Q plug-in module
- NT micro, ISDN bus power feeding
- NT1+, NT1+ web
- NT split, NT1+ split

ISDN Network Termination

Voice, text, data and video communication via the ISDN network is a standard today. To implement the ISDN basic access at the subscriber end network terminations (NTs) are required.

By its ISDN basic access NT FAMILY, *Professional Multimedia Network Systems* has created a flexible product platform. From the standard NTBA up to the NT1+ with integrated splitter function - the *pmns* NT FAMILY offers both approved and new solutions.

With more than two million ISDN NTs sold throughout the world, *pmns* is an established ISDN NT supplier. The development of the NT FAMILY is based on much experience in the manufacture of network termination and other ISDN access equipment and derives sophisticated software modules from various complex ISDN access devices.



NTBA

The NTBA is a standard NT for ISDN basic rate access. Via its two-wire U_{K0} line interface, information is transmitted by the 4B3T coding method. This information is offered to the subscriber on a four-wire S_0 bus. An integrated 230 V power supply unit provides up to 4.5 W to the S_0 interface. This serves for feeding up to four ISDN terminals. Inside the NTBA, there is an S_0/U_{K0} clip block that is easily accessible from outside. An LED indicates the ISDN remote feeding voltage.



NTBA micro/NT1Q micro

The NTBA micro/NT1Q micro is the ISDN basic access network termination that can be directly fitted into a telephone outlet. This integration of the NT into a telephone outlet makes unnecessary any installation of an additional surface-mounted unit for ISDN utilisation. The NTBA micro works on the basis of the 4B3T coding method, whereas the NT1Q micro uses 2B1Q. The NTBA micro/NT1Q micro is available in flush-mounted or surface-mounted design. Pluggable U_{K0} and S_0 terminal blocks make wiring the NTBA micro/NT1Q micro easier. From a functional point of view, the NTBA micro/NT1Q micro fully corresponds to the plug-in NT and also has an integrated APS detector circuit.



NT1Q

The NT1Q is a standard NT for ISDN basic access using the 2B1Q coding method. It also has an integrated power supply unit and an S_0/U_{K0} terminal block. Its two LEDs indicate the ISDN remote feeding voltage, on the one hand, and the mains voltage, on the other.

NTBA plug-in module/ NT1Q plug-in module

Both standard ISDN basic access units, the NTBA and then NT1Q, are also available as plug-in versions. They can be used in a 19" subrack.



ISDN bus power feeding

For the extended feeding of ISDN terminals via the S_0 bus (up to 4.5 W), the optional S_0 bus power feeding can be used for the NTBA micro/NT1Q micro and the NTBA plug-in module/NT1Q plug-in module.

The S_0 bus power feeding can be connected to any ISDN socket of the S_0 bus. With the optionally available S_0 bus power feeding, the function of the NT micro fully corresponds to that of the standard design NT.



NT1+

The NT1+ is an ISDN network termination (NT) provided with extensive performance features using an integrated ISDN terminal adapter (TA). It offers the subscriber one S_0 and two a/b interfaces. This facilitates the use of up to eight ISDN terminals and, at the same time, via two a/b interfaces, of analogue telephone sets, modems and group 3 fax machines. The NT1+ is available as one variant using the 2B1Q coding method and another variant using the 4B3T coding method. The CLIP function for the a/b interface can be used just as well as the 12/16 kHz metering pulse can.



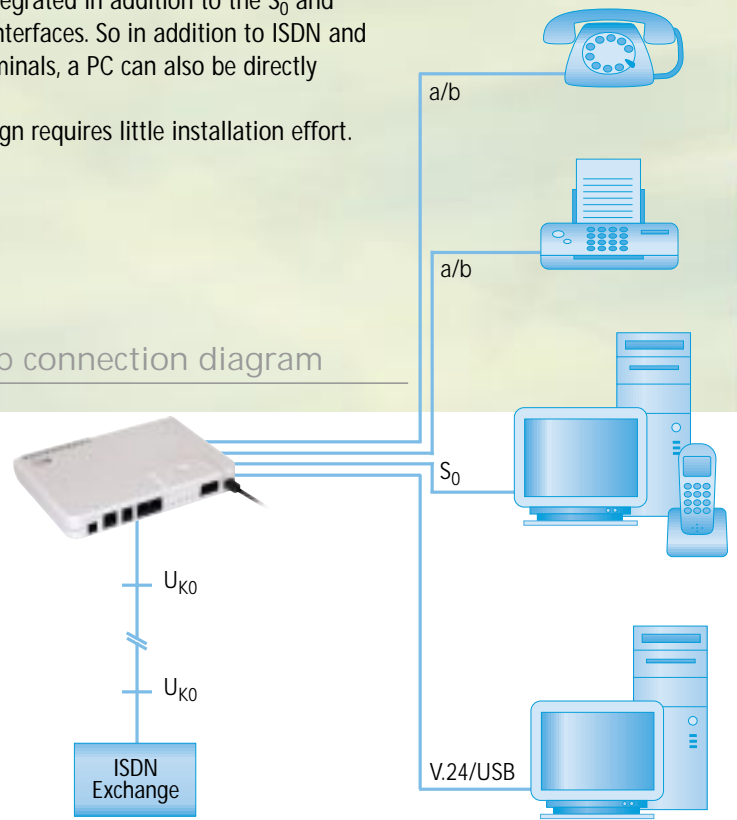
NT1+ web

In the NT1+ web, a USB and a V.24 interface have been integrated in addition to the S_0 and the two a/b interfaces. So in addition to ISDN and analogue terminals, a PC can also be directly connected. Compact design requires little installation effort.

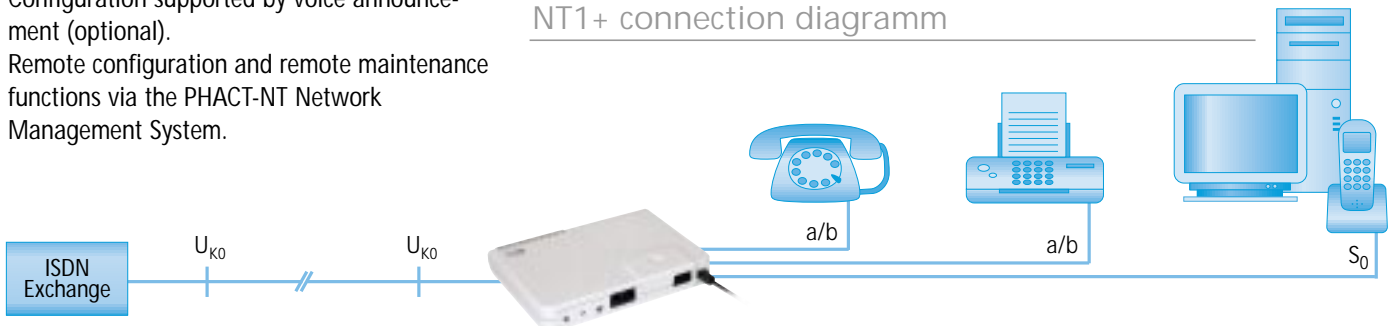
Configuration and operation

- Operating software downloadable (Flash-PROM).
- Device programming through the a/b interface by means of DTMF signalling.
- Configuration downloadable.
- Custom-made preprogramming.
- Up to 3 MSNs can be assigned to each a/b interface.
- In case of mains failure, restricted power mode can be configured through U_{K0} for one of the following modes: S_0 or a/b 1 or a/b 2 or auto a/b-Mode or ab1+ a/b 2.
- The S_0 interface can be deactivated by remote the configuration.
- Password-protected configuration.
- Configuration supported by voice announcement (optional).
- Remote configuration and remote maintenance functions via the PHACT-NT Network Management System.

NT1+ web connection diagram



NT1+ connection diagramm



ISDN Network Termination



NT split

The NT split is a standard NT with an integrated ADSL splitter. After the U-R2 interface is released, each subscriber-site ISDN access equipped with the NT split will already be suitable for ADSL by the integration of an ISDN NT and an ADSL splitter within one unit. To support the DSL strategy of the network providers, no more subscriber-site changes will be necessary when their customers are upgraded from ISDN to DSL+ISDN, due to the use of the NT split. This will contribute to considerable saving of logistic costs in upgrading from ISDN to ISDN+DSL.

Even for a new installation of ISDN+DSL, savings for the network providers and advantages for the customer will result, as only one network termination will still be required.

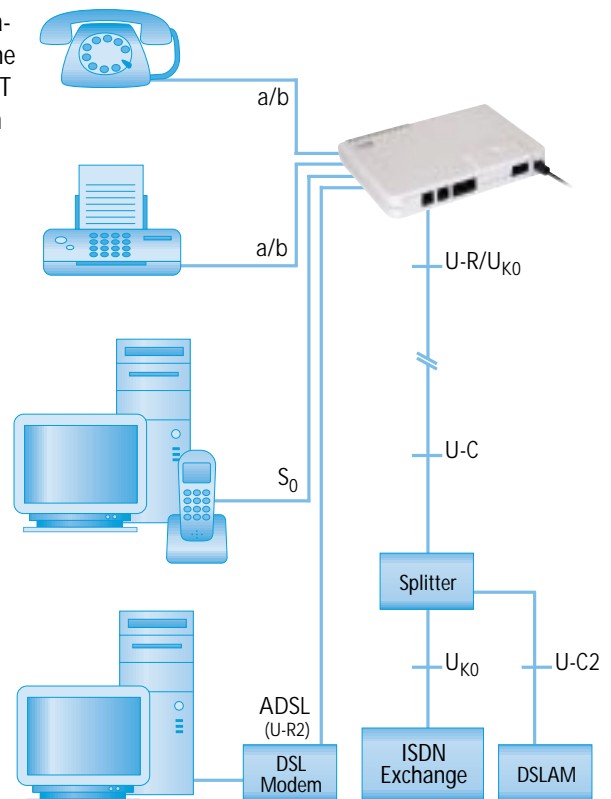
As to its functionality, the NT split is fully compatible with a standard NT and an ADSL splitter. The optimum tuning of an NT and a splitter in the NT split offers some advantages in the transmission behaviour.



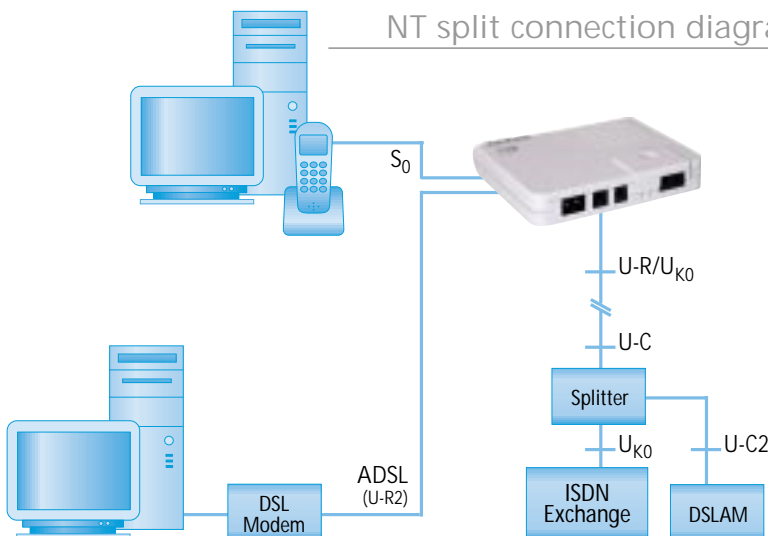
NT1+ split

In addition to the advantages of the NT split, the NT1+ split offers the convenience of an NT1+ with an integrated TA for two a/b interfaces. Thus, two a/b interfaces are available in addition to the S_0 and U-R2 interfaces. Compact design requires little installation effort.

NT1+ split connection diagramm

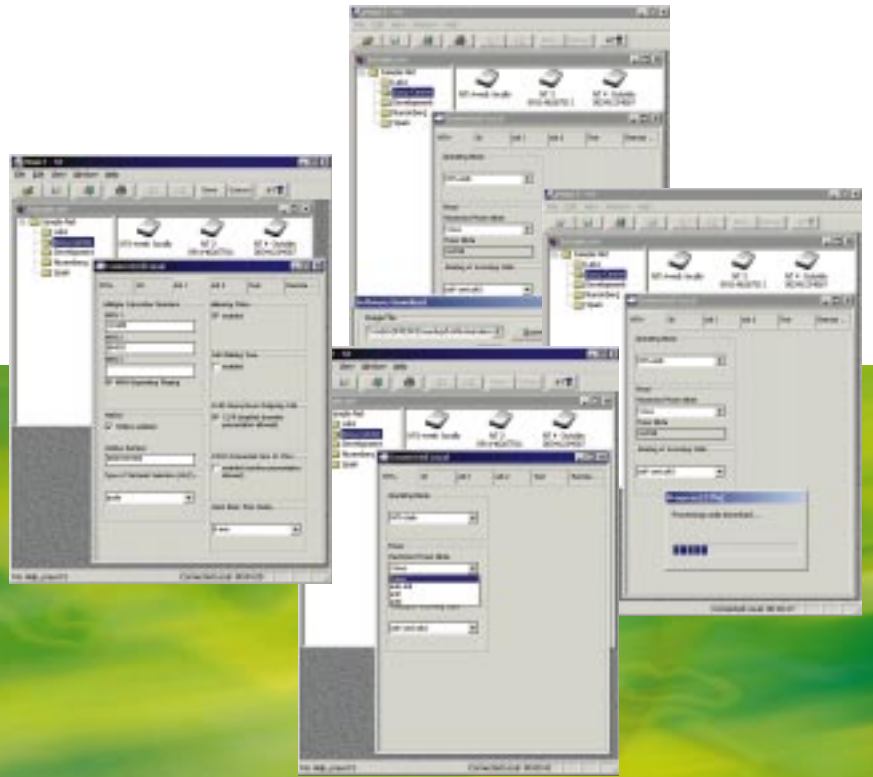


NT split connection diagramm

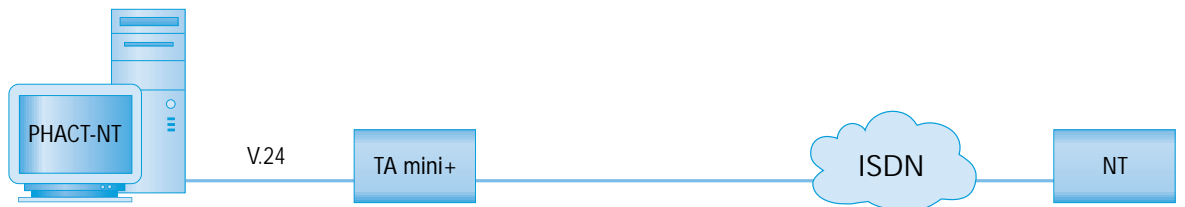


PHACT-NT

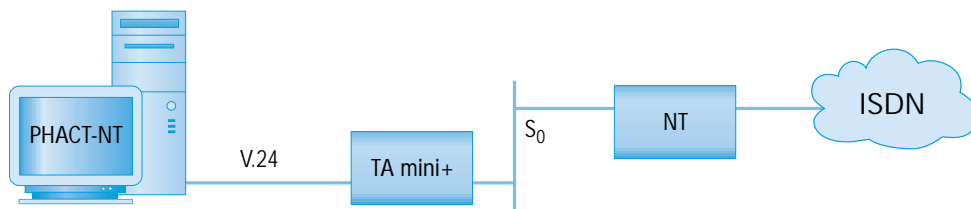
Network management software for ISDN Network Termination. PHACT-NT facilitates the comfortable and easy configuration and management of the NT1+, NT1+ web and NT1+ split from a PC. An intuitive windows user interface allows easy operation.



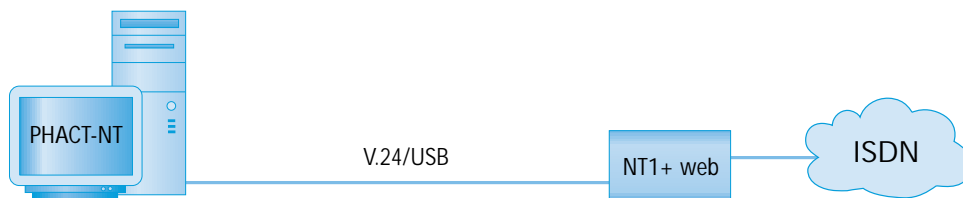
Version: PHACT-NT NMS



Version: PHACT-NT local Service via S₀



Version: PHACT-NT local user



	NTBA	NT1Q	NTBA micro
Available interfaces			
S ₀ interface	■	■	■
a/b 1	-	-	-
a/b 2	-	-	-
V.24/USB	-	-	-
ADSL (U-R2)	-	-	-
U _{K0}	■	■	■
U-R	-	-	-
S ₀ interface as per	ITU-T I.430, ANSI T1.605, ETS 300 012		
Transmission range			
Short passive bus	Up to 220 m	Up to 220 m	Up to 220 m
Point-to-point/extended passive bus	Up to 1100 m	Up to 1100 m	Up to 1100 m
Feeding power			
Normal mode from power supply unit	≤ 4.5 W	≤ 4.5 W	≤ 4.5 W*
Restricted power mode from rem. power supply	≤ 420 mW	≤ 420 mW	≤ 420 mW
U _{K0} interface as per	TS 102 080, ANSI T1.6		
Line code	4B3T	2B1Q	4B3T
Transmission range at BER ≥ 10 ⁻⁷	Up to 4.2 km for 0.4 mm wire diameter, ANSI Loops 1 ... 15, ETSI Loops 1 ... 8		
Voice announcement	No	No	No
Integrated internet access (active ISDN modem)	No	No	No
Copper bypass (Plug & Play)	No	No	No
Remotely fed interface (Restricted power mode)	S ₀	S ₀	S ₀
Supplementary Services			
D-channel			
Keypad			
Additional NT functions			
a/b interface			
Impedance			
Loop current			
Loop resistance			
Ringing			
Ringing amplitude			
Ringing frequency			
Ringing signal shape			
CLIP			
Metering pulse			
MWI (Messages waiting indication)			
Remote power feeding by the exchange			
Signal transmission			
Power supply			
Mains voltage	195 ... 263 V _{AC}	85 ... 263 V _{AC}	85 ... 263 V _{AC} *
Frequency	48 ... 63 Hz	48 ... 63 Hz	48 ... 63 Hz*
APS detector	No	No	Yes
General data			
Weight	0.6 kg	0.6 kg	UP** 0.15 kg, AP*** 0.25 kg
Dimensions (H x W x D in mm)	150 x 100 x 45	150 x 100 x 45	UP** 58 x 43 (Ø x T in mm) AP*** 80 x 80 x 50

NT1Q micro	NT split	NT1+	NT1+ web	NT1+ split
■	■	■	■	■
-	-	■	■	■
-	-	■	■	■
-	-	-	■	-
-	■	-	-	■
■	■	■	■	■
-	■	-	-	■
ITU-T I.430, ANSI T1.605, ETS 300 012				
Up to 220 m	Up to 220 m	Up to 220 m	Up to 220 m	Up to 220 m
Up to 1100 m	Up to 1100 m	Up to 1100 m	Up to 1100 m	Up to 1100 m
≤ 4.5 W*	≤ 4,5 W	≤ 4.5 W	≤ 4.5 W	≤ 4.5 W
≤ 420 mW	≤ 420 mW	≤ 420 mW	≤ 420 mW	≤ 420 mW
TS 102 080, ANSI T1.601				
2B1Q	2B1Q/4B3T	2B1Q/4B3T	2B1Q/4B3T	2B1Q/4B3T
Up to 4.2 km for 0.4 mm wire diameter, ANSI Loops 1 ... 15, ETSI Loops 1 ... 8				
No	No	Optional	Optional	Optional
No	No	No	Yes	No
No	No	Optional	Optional	No
S ₀	S ₀	S ₀ or a/b1 or a/b2 or a/b1+a/b2 or auto a/b-Mode		
CLIP, CLIR, COLP, COLR, AOCE, AOCD, HOLD, CW, 3PTY, CCBS, CFU, CFNR, CFB, MCID, TP				
		Yes	Yes	Yes
Hotline, MSN, MSN dependend Ring, Terminal Type, PABX Mode				
Programmable, complex or real				
Programmable, 22 mA max.				
700 Ω max.				
Unbalanced, balanced, not offset, offset				
37 V _{RMS} max. at 2.9 kΩ				
25 Hz/50 Hz				
Sinusoidal (distortion factor < 5 %), trapezoidal (distortion factor < 10 %)				
ETS 300 659				
12 kHz/16 kHz/polarity reversal				
		Yes	Yes	Yes
		Yes	Yes	Yes
ETS 300 439				
85 ... 263 V _{AC} *	85 ... 263 V _{AC}	85 ... 263 V _{AC}	85 ... 263 V _{AC}	85 ... 263 V _{AC}
48 ... 63 Hz*	48 ... 63 Hz	48 ... 63 Hz	48 ... 63 Hz	48 ... 63 Hz
Yes	No	No	No	No
UP** 0.15 kg, AP*** 0.25 kg	0.5 kg	0.6 kg	0.6 kg	0.6 kg
UP** 58 x 43 (Ø x T in mm)	110 x 145 x 35	150 x 205 x 35	150 x 205 x 35	150 x 205 x 35
AP*** 80 x 80 x 50				

* with optionally available ISDN bus feeding unit

** UP ≙ flush-mounted version

*** AP ≙ surface-mounted version

ISDN Network Termination

	NTBA	NT1Q	NTBA mirco	NT1Q micro	NT split	NT1+	NT1+ web	NT1+split
Product safety	EN/IEC 60950+A1, +A2, +A3, +A4, EN 41003, EN 60950, ETS 300 047, ITC 950							
Environmental conditions								
EMV as per	1TR9		1TR9		ETS 300 386, CISPR 22, EN 50022, IEC 801			
Protection as per					ETS 300 047, ITU-T K.12			
Storage as per					ETS 300 019 class 1.2			
Transport & handling as per					ETS 300 019 class 2.3			
Operation as per					ETS 300 019 class 3.2			



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