INNOVATIVE 500 MHz BROADBAND CONVERTOR
for 1~4 Gbps modems over Twisted Pair and/or Coax

Sparnex CTX allows to use twisted pair modem technology over Coax providing bandwidth for modems up to 4 Gbps (> PON speed) over a distance that has never been reached before !

1 Gbps over 1500 meter of coax RG-6 without repeater
1,3 Gbps over 100 meter of twisted pair 0,5 PE (CAT5)
4 Gbps or 2 Gbps symmetric over 250 meter of coax RG-6

100 Ω TWISTED PAIR to COAX 75 Ω

Cat3 Cat5 Cat6 Cat7 ⟷ **COAX RG-6 RG-11 RG-59**

combine CTX with Fiber when end-user is not within fiber reach

Twisted pair modems like xDSL and G.(mg)fast can now connect Broadband Subscribers over Coax thanks to the **new innovative compact high-end Coax-Twisted Pair convertor from Sparnex** keeping up with highest transmission quality, speed and functions for today's and future broadband network needs.

- Passive non-intrusive convertor
- Excellent impedance matching that outperforms any other solution
- Signal dimming introduced by the convertor < 1dB @ 100 MHz
- Linear signal conversion over entire spectrum
- passes ISDN, ADSL(-2plus), VDSL2 (35b), G.fast 106-212, G.mgfast 424, SPE 10BASE-T1L/S, G.Hn, Gigawire, Eth-APL, Fieldbus, ..
- Signal integrity of PAM, 2B1Q, 3B2T, 4B3T, DMT, QAM, OFDM, ..
- For modems up to 4 Gbps, transparent for PoE, Reverse Power Feeding
- Compliant to different EMC and safety standards (Cenelec, UL, EN, IEC, ..)
- Green: no local power AC or DC required, no power consumption, no heating
- no signal degradation, no EMI, outstanding return loss, proven technology
- common F-connector at coax side, RJ11/RJ45/pigtail/LSA/IDC/HFD at TP side
- Applicable for coaxial and twisted pair networks in USA, Canada, Japan, Asia Pacific, Europe and Australia.

INNOVATIVE 500 MHz BROADBAND CONVERTOR for 1~4 Gbps modems over Twisted Pair and/or Coax

Product models

CTX-S300	Single Coax–UTP/STP bandwidth DC – 300 MHz (G.fast 212)
CTX-S500	Single Coax–UTP/STP bandwidth DC – 500 MHz (G.mgfast 424)
CTX-8	8 x Coax – UTP/STP bandwidth DC – 500 MHz
CTX-16	16 x Coax – UTP/STP bandwidth DC – 500 MHz
CTX-16/IP65	16 x Coax – UTP/STP bandwidth DC – 500 MHz / Outdoor

Cable connection types (**S =** Standard **/ O =** Optional **/ - =** Not possible)

Type	Interface	CTX S-300	CTX S-500	CTX-8	CTX-16	CTX-16 IP65
	Male F-Connector	**1**	**1**	**8**	**16**	**16**
	RJ-11 female	O	O	O	O	-
	RJ-11/RJ-45 female	**S**	**S**	O	O	-
	Tail with RJ-11 male	O	O	O	O	O
	Tail with RJ-45 male	O	O	O	O	O
	IDC/LSA strips	-	-	O	O	O
	Pigtail cable	-	-	**S**	**S**	**S**

Datasheet

Insertions loss

Frequency band	Insertion Loss limits
30 kHz- 422 kHz	< 2,6dB
2 MHz – 106 MHz	< 1dB
106 MHz – 212 MHz	< 1dB

Insertions loss variation

Frequency band	Insertion Loss limits
2 MHz-70 MHz	max 0.025 dB
70 MHz –212 MHz	max 0.035 dB

Nominal insertions loss variation of 2 convertors back-to-back in presence of 60V/200 mA

Frequency band	Insertion Loss limits with 2 baluns b-t-b
10 MHz - 300 MHz	max 0.01 dB

Harmonic distortion of 2 back-to-back convertors

	Harmonic distortion
Balanced 100 Ohm to Unbalance 75 Ohm	< -75 dbc
Unbalanced 75 Ohm to balanced 100 Ohm	< -75 dbc
Back-to-back balanced 100 Ohm to unbalance 50 Ohm	< -75 dbc
Back-to-back unbalance 75 Ohm to balanced 100 Ohm	< -75 dbc

Return Loss @ 100 Ohm twisted pair and 75 Ohm Coax F-connetor

Frequency Band	Return Loss @ balanced 100 Ohm
2 MHz - 30 MHz	> 20 dB
30 MHz - 106 MHz	> 20 dB
106 MHz - 212 MHz	> 22 dB

Frequency Band	Return Loss @ balanced 75 Ohm
2 MHz - 30 MHz	> 20 dB
30 MHz - 106 MHz	> 20 dB
106 MHz - 212 MHz	> 22 dB

CMRR Common Mode rejection ratio

No common mode is added at unbalance with a 0,2° to max 1,8° phase unbalance for a 0,6 to 0,3 dB amplitude unbalance over the entire band from 2 MHz resulting in an outstanding CMRR.

Longitudinal conversion loss

Frequency	LCL
2 MHz	> 80 dB
6 MHz	> 80 dB
50 MHz	> 58 dB
70 MHz	> 55 dB
100 MHz	> 55 dB
150 MHz	> 48 dB
180 MHZ	> 38 dB
200 MHz	> 38 dB

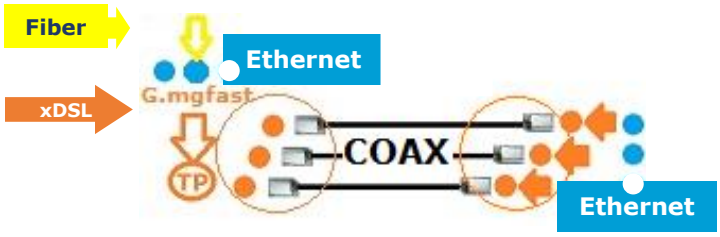
Impact on embedded dying gasp pulsing and fast signaling

60Vdc-0Vdc	Impulse signaling	Continuous Power	Peak power	Impact
Brick wall Voltage	170 uS	375 mA	425 mA	no
Brick wall voltage	50 uS	375 mA	425 mA	no
Brick wall Voltage	3V/uS	375 mA	425 mA	No

Broadband to every household, apartment, office, building over fiber with twisted pair and coax convertor

Coax RG-6 FEET	Coax RG-6 METER	Aggregated Speed	Symmetric Speed
800	250	4 Gbps	2 Gbps
4,875	1,500	1 Gbps	500 Mbps

Package per 2 units



Package per single unit