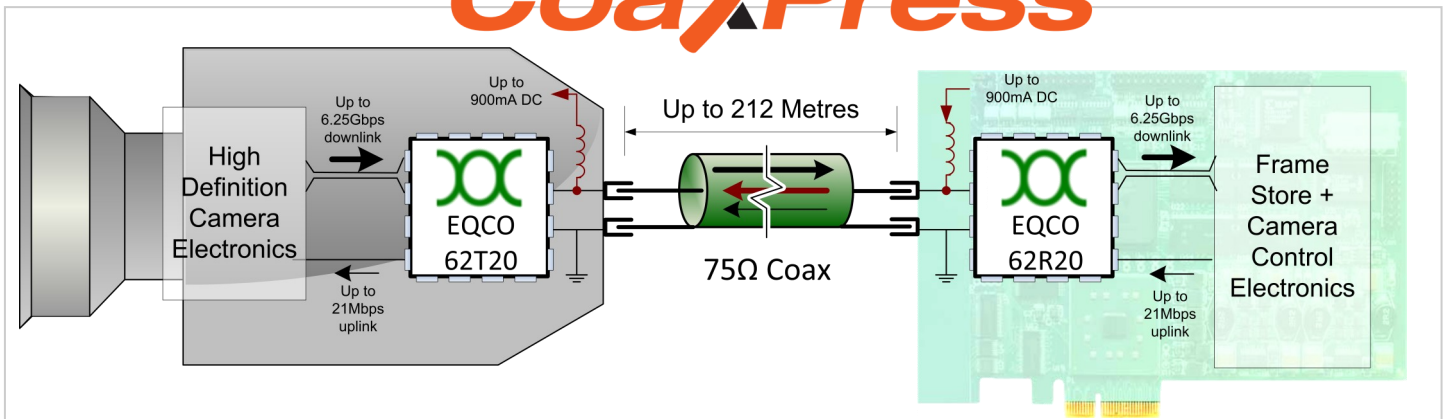# EqcoLogic Transceivers for CoaXPress® Camera Solutions

CoaXPress (CXP) is an asymmetric high speed point to point serial communication standard for the transmission of video and still images, scalable over single or multiple coaxial cables.
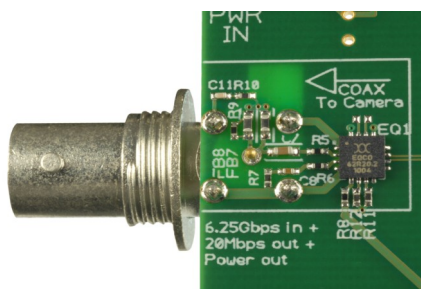
This solution supports a high speed downlink of up to 6.25Gbps per cable for video and images, plus a lower speed, 20Mbps, uplink for communications and control. Video transmission, power and data (control) are simultaneous over a single cable. Cable lengths of greater than 100m may be achieved.

Multiple cable links

Higher speed image transmission can be supported by using multiple CoaXPress links in parallel. For example, the fastest CoaXPress solutions today use four channels, offering up to 25Gbit/s downlink bandwidth.

EqcoLogic Transceiver Devices

The figure shows the integration of EqcoLogic transceivers in a typical camera/frame grabber configuration. The CoaXPress system uses the asymmetric (high speed one way, low speed the other) transceivers to transmit image data from the camera and control signals and triggering information from the frame grabber. The system also supports transmission of power from the frame grabber to the camera, making local power supplies unnecessary.

The product family supports variety of **data rates**:

- EQCO62T20: transmits ≤ 6.25Gbit/s; receives ≤ 20Mbit/s
- EQCO31T20: transmits ≤ 3.125Gbit/s; receives ≤ 20Mbit/s
- EQCO62R20: receives ≤ 6.25Gbit/s; transmits ≤20Mbit/s)
- EQCO31R20:receives ≤ 3.125Gbit/s; transmits ≤ 20Mbit/s)

Standardization

CoaXPress has been standardized by JIIA and has been accepted as a world standard by the G3 group including AIA and EMVA.

The original CoaXPress technology was developed by EqcoLogic, together with other members of the CoaXPress consortium, including Adimec and Active Silicon.

CoaXPress Transceiver 1.0 ©2011

Technical Specifications

CoaXPress Interface

Downlink Data Throughput	1.25 – 6.25 Gbps (EQCO62x20) / 1.25 – 3.125 Gbps (EQCO31x20)
Uplink Data Throughput	20 Mbps
Power Over Coax	Up to 13 W

Characteristics

Power supply	Single 1.2 V supply
Power Consumption	70 mW per chip
Temperature Range	-40 - +85 ˚C
Package	16 pin QFN 4 mm, Pb-free and RoHS compliant

Performance

BELDEN

Name		Belden 7731A	Belden 1694A	Belden 1505A	Belden 1505F	Belden 1855A
Type		Long Distance	Industry Standard	Compromis Coax	Flexible	Thinnest cable
Diameter	(mm)	10.3	6.99	5.94	6.15	4.03
1.25 Gbps	(m)	194	130	107	80	55
2.5 Gbps	(m)	162	110	94	66	55
3.125 Gbps	(m)	147	100	86	60	55
5.0 Gbps	(m)	87	60	52	35	38
6.25 Gbps	(m)	58	40	35	23	25

GEPCO

Name		Gepco VHD1100	Gepco VSD2001	Gepco VPM2000	Gepco VHD2000M	Gepco VDM230
Type		Long Distance	Industry Standard	Compromis Coax	Flexible	Thinnest cable
Diameter	(mm)	10.3	6.91	6.15	6.15	4.16
1.25 Gbps	(m)	212	140	109	81	66
2.5 Gbps	(m)	185	120	94	67	66
3.125 Gbps	(m)	169	110	86	61	62
5.0 Gbps	(m)	102	66	53	36	38
6.25 Gbps	(m)	68	44	35	24	25

CANARE*

Name		Canare L-7CFB	Canare L-5CFB	Canare L-4CFB	Canare L-3CFB	Canare L-2.5CFB
Type		Long Distance	Industry Standard	Compromis Coax	Thin Cable	Thinnest Cable
Diameter	(mm)	10.2	7.7	6.1	5.5	4
1.25 Gbps	(m)	165	118	94	72	43
2.5 Gbps	(m)	135	98	79	66	43
3.125 Gbps	(m)	122	88	71	60	43
5.0 Gbps	(m)	71	52	42	36	30
6.25 Gbps	(m)	46	34	28	24	20

* specs from Canare only up to 2GHz, 5 Gbps and 6.25 Gbps performance are by extrapolation!

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