

Applications Overview

High Performance Analog

大盛唐电子集团有限公司

DST ELECTRONIC GROUP CO., LTD

www.szdst.com.cn

COMPANY CONFIDENTIAL

Broad Application Base

MEDICAL



Portable / High-end
Blood Analyzer



Portable
Ultrasound



Portable / High-end
Thermometer
MRI and
Ultrasound



Patient
Monitor



Pulse
Oximetry

Accurate affordable
medical equipment
for everyone

Low power for green
technology and longer
battery life

Integration to save
space and lower cost

Higher precision for
improved performance

Sensor Conditioning
Products

High performance analog
products that enable next
generation technology

INDUSTRIAL



Digital Oscilloscope



Traffic Camera
Network
Analyzer



Basestation
Repeater



Small/Large Weigh
Scales



Security
Systems



Car DVD



Home Appliance



Smoke
Detector



Set Top Box



Automatic
Meter
Reading



A New Direction in Mixed-Signal

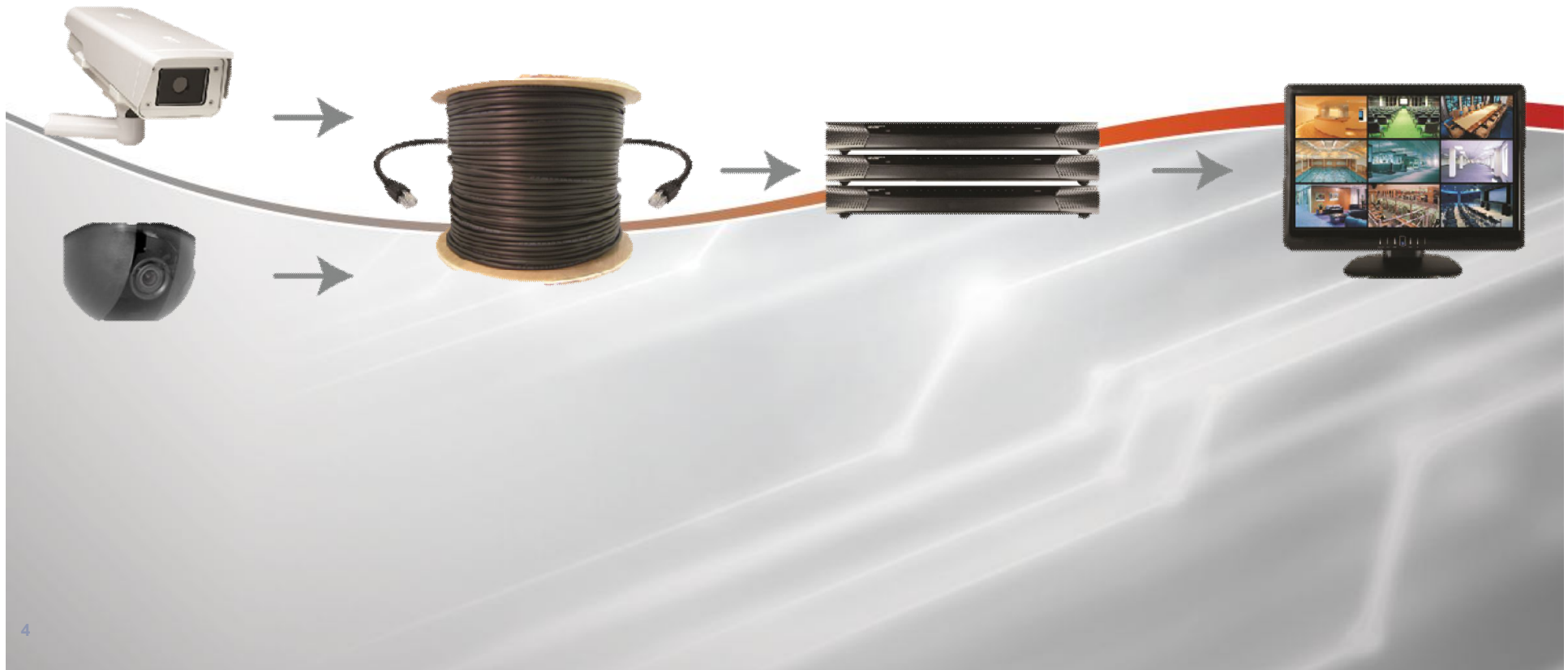
HPA Highlight Applications

- Battery ATE – CLC1200
- Video Splitter – CLC4601
- Barcode Scanner – CLC2011/CLC4011
- Laser Parking System – CLC1001/CLC1003/CLC2023
- Laser Range Finder – CLC1004
- Wireless Phone Charger – CLC2011 (Samsung Reference Design)
- E - Whiteboard – CLC2007
- Sensor / Transducer Interfaces – CLC1200/CLC1001/CLC1002/CLC1003
- Motor Control – CLC2011/CLC4011/CLC1003
- Video Surveillance – CLC2000/CLC4601/CLC2005/CLC2007
- aCVi (HD Video Transmission) – CLC2007/CDK3405/CDK2308
- Pro Audio – CLC2058/CLC2059/CLC1003
- Medical Imaging/Monitors – CDK8307/CDK3405/CDK3404

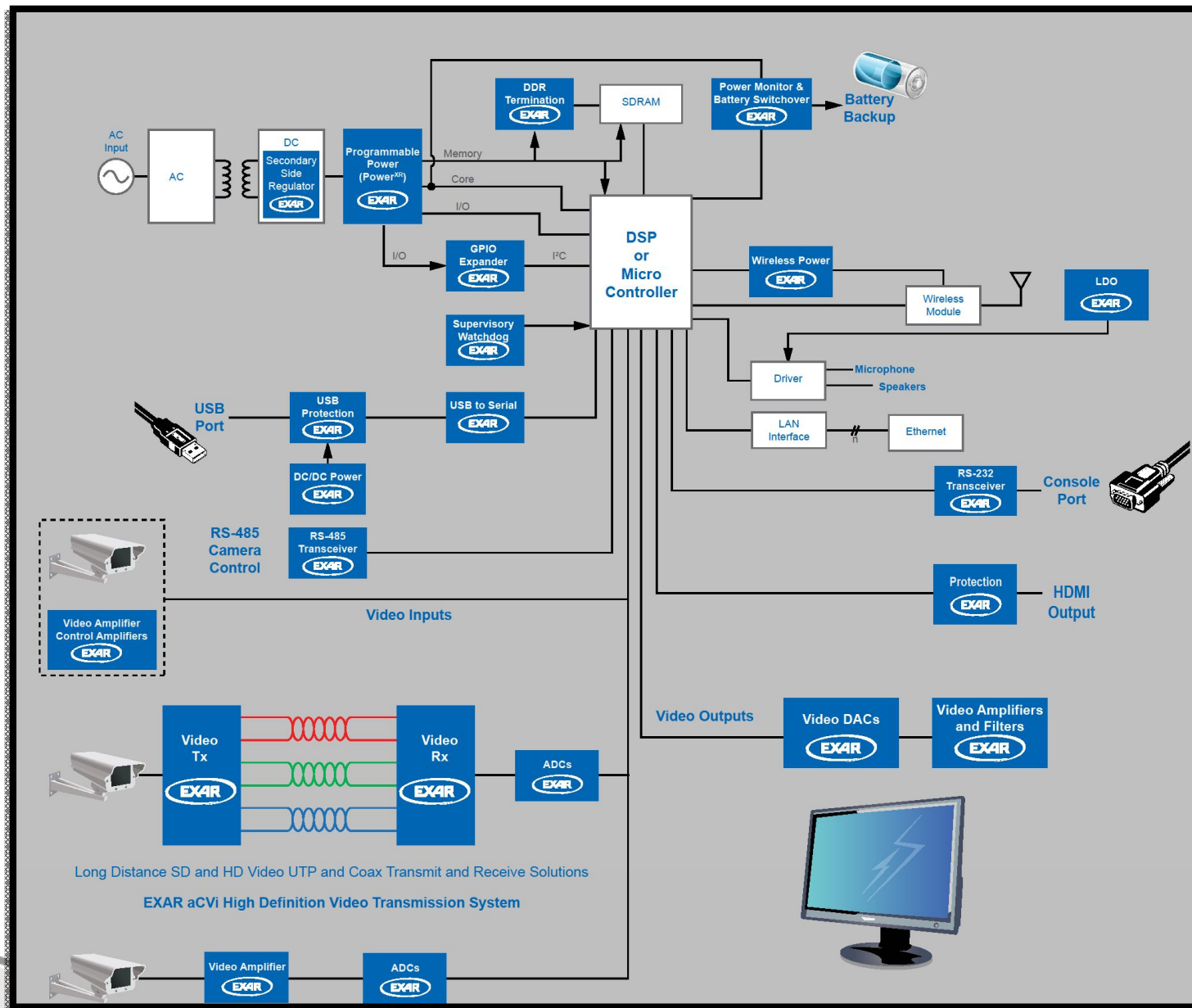


A New Direction in Mixed-Signal

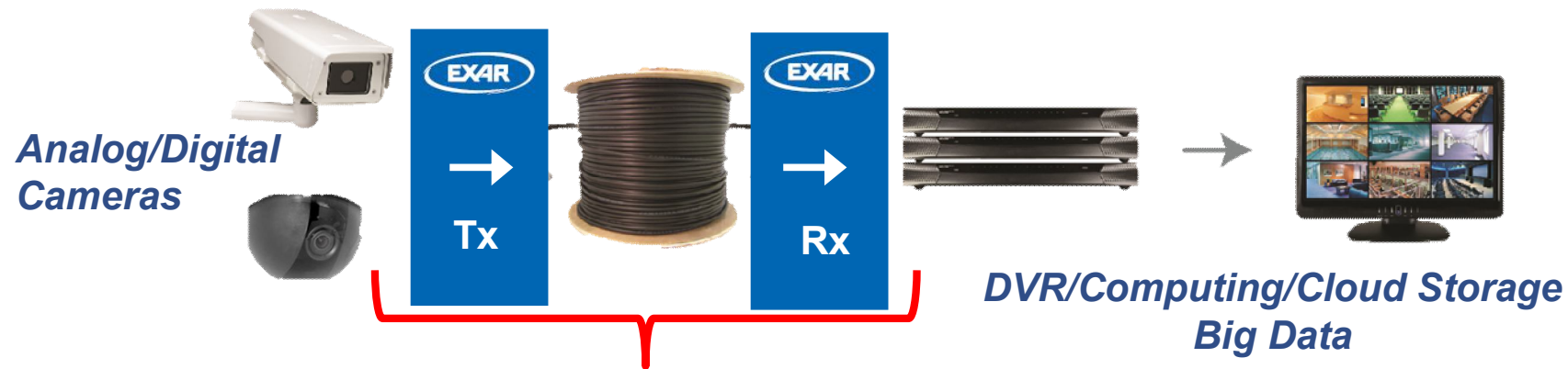
Video Solutions



Video Surveillance total EXAR Solution



Video Surveillance



- EXAR's Value to the System Application
 - Lowest Cost – Highest Performance signal transmission
 - System Flexibility – Widest variety of input/output devices
 - Supports both analog and digital cameras
 - Longest Cable driving solution in the industry
 - More secure than IP networked systems
 - Turn-Key reference designs – Ready to Go!

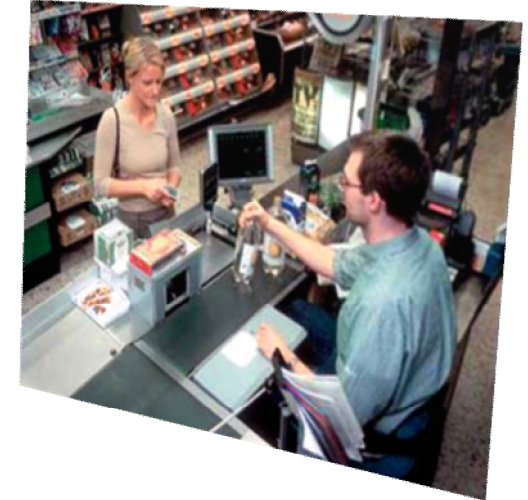
Video Surveillance & Distribution



Residential



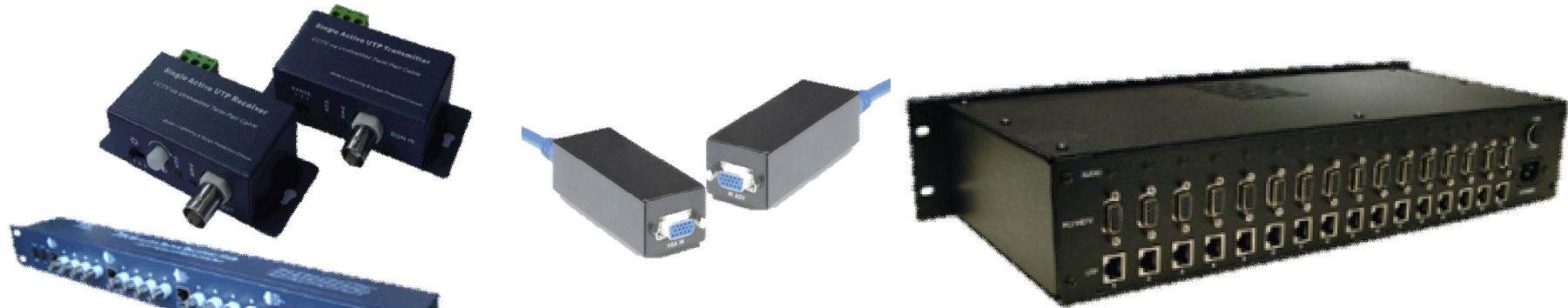
Industrial



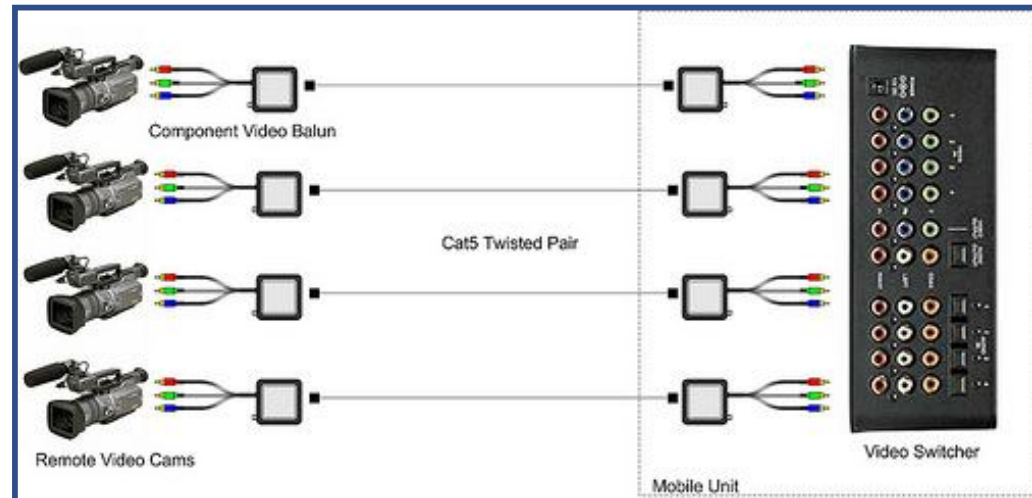
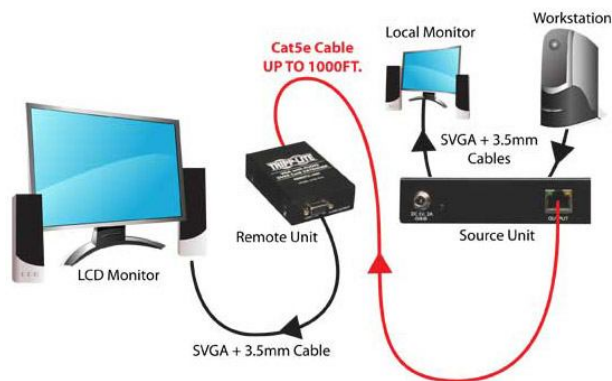
Retail

- EXAR's current solutions provide the critical transmit and receive components for a wide range of video surveillance applications and a wide range of video formats.

Video Surveillance & Distribution



Extend a VGA Video + Stereo Audio Signal up to 1000 ft.

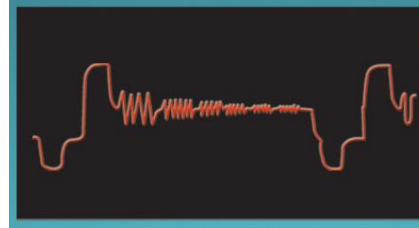


- EXAR supports a wide range of video, audio, and power distribution over twisted pair cable (Cat5e, Cat6...), coaxial, and video graphics adapter (VGA)cables.
- EXAR supports a variety of end equipment in many form factors.

Video Surveillance Over UTP



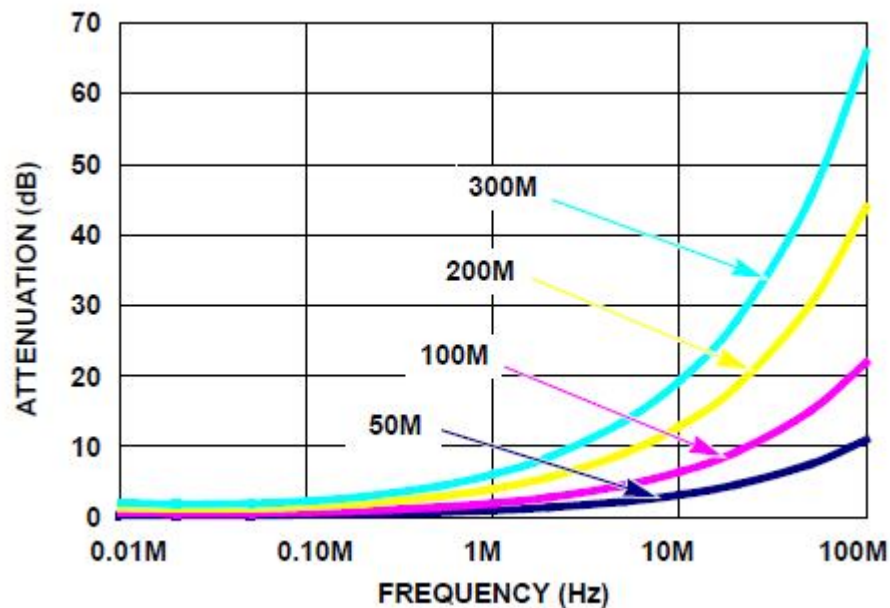
Original Signal



Via UTP



Equalization



- EXAR solves the signal loss associated with driving the low cost UTP (Cat5) cable.
- EXAR provides the industry's longest cable driving solutions up to 1800M
- EXAR analog solutions are superior to today's wired digital video transmission protocols due to:
 - Lower Cost
 - Longer Distance
 - More Secure
 - Better Image Integrity

Video Surveillance Reference Designs

- EXAR provides a variety of reference designs using EXAR components.
 - Composite Video (CVBS) Transmitter (Tx) and Receiver (Rx)
from 300M to 1800M (industries longest cable solution)
 - SDVGA Video Transmitter and Receiver for 300M
 - HDVGA Extender including audio and separate video sync in a single cable
 - SAG compensated CVBS and RS-485 compliant TX/Rx
 - Current Feedback based Receiver and Equalizer
 - CCTV multi circuit UTP transmission
 - ...
 - Custom solutions

Video Surveillance Reference Designs

- CVBS Solution

The image displays a CADEKA CVBS receiver module, a black printed circuit board (PCB) populated with various electronic components including capacitors, resistors, and integrated circuits. The board features several connectors: a BNC connector at the top, a USB connector on the left, and another BNC connector at the bottom. The board is labeled with 'CADEKA' and 'CVBS RECEIVER'.

Surrounding the module are reference design schematics and tables. The schematics show detailed circuitry for power regulation, signal processing, and control logic. The tables provide a structured layout for component values and design parameters.

Table 1: Revision History

REV	REV NO	APPROVED	DATE
1			

Table 2: Component Values

COMPONENT	VALUE	UNIT
R1	10K	Ω
R2	10K	Ω
R3	10K	Ω
R4	10K	Ω
R5	10K	Ω
R6	10K	Ω
R7	10K	Ω
R8	10K	Ω
R9	10K	Ω
R10	10K	Ω
R11	10K	Ω
R12	10K	Ω
R13	10K	Ω
R14	10K	Ω
R15	10K	Ω
R16	10K	Ω
R17	10K	Ω
R18	10K	Ω
R19	10K	Ω
R20	10K	Ω
R21	10K	Ω
R22	10K	Ω
R23	10K	Ω
R24	10K	Ω
R25	10K	Ω
R26	10K	Ω
R27	10K	Ω
R28	10K	Ω
R29	10K	Ω
R30	10K	Ω
R31	10K	Ω
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R33	10K	Ω
R34	10K	Ω
R35	10K	Ω
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R37	10K	Ω
R38	10K	Ω
R39	10K	Ω
R40	10K	Ω
R41	10K	Ω
R42	10K	Ω
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R44	10K	Ω
R45	10K	Ω
R46	10K	Ω
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R90	10K	Ω
R91	10K	Ω
R92	10K	Ω
R93	10K	Ω
R94	10K	Ω
R95	10K	Ω
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R98	10K	Ω
R99	10K	Ω
R100	10K	Ω

Table 3: Component Values

COMPONENT	VALUE	UNIT
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R92	10K	Ω
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R94	10K	Ω
R95	10K	Ω
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R97	10K	Ω
R98	10K	Ω
R99	10K	Ω
R100	10K	Ω

Table 4: Component Values

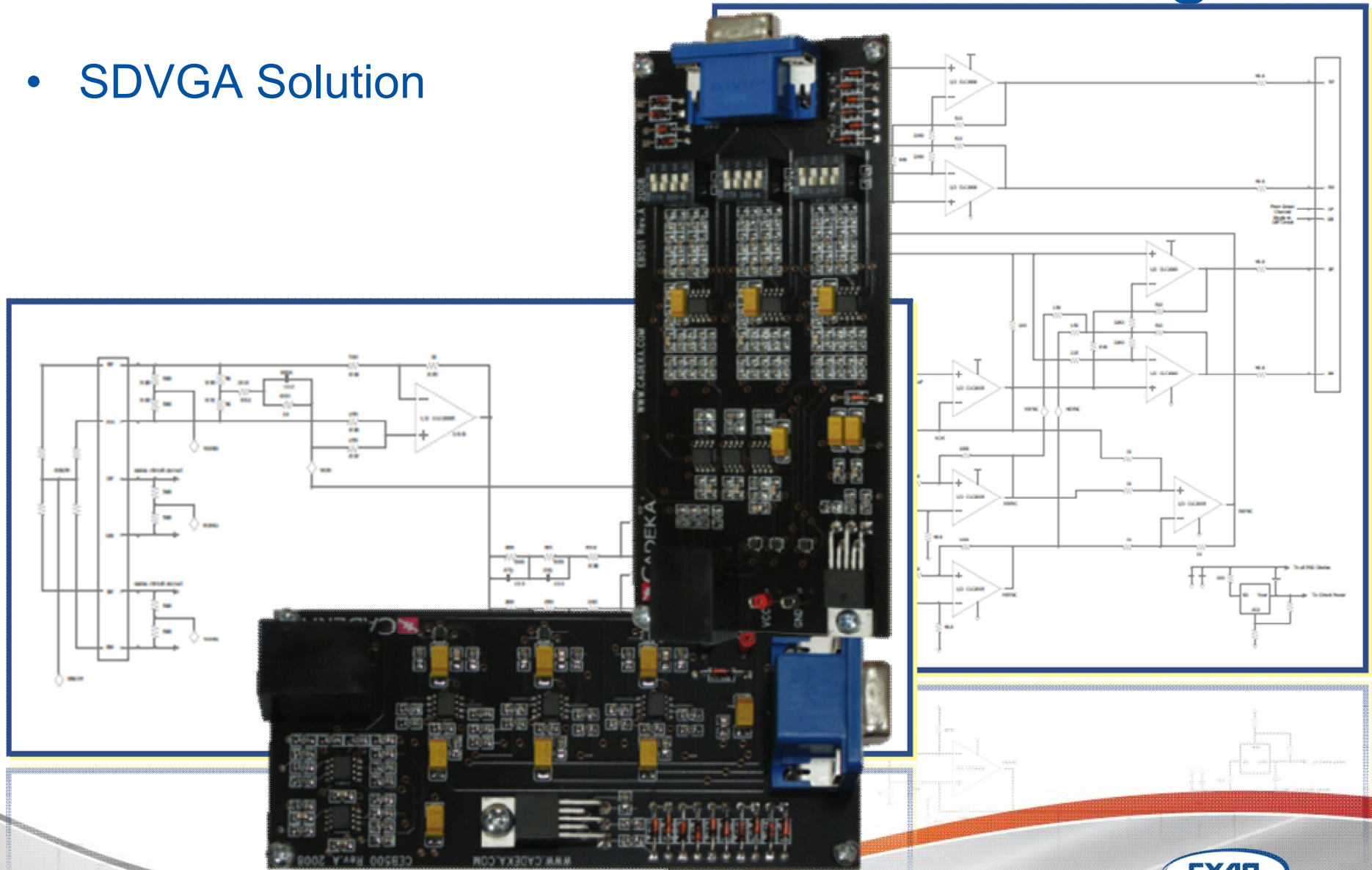
COMPONENT	VALUE	UNIT
R1	10K	Ω
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R3	10K	Ω
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R6	10K	Ω
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R13	10K	Ω
R14	10K	Ω
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R17	10K	Ω
R18	10K	Ω
R19	10K	Ω
R20	10K	Ω
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R26	10K	Ω
R27	10K	Ω
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R31	10K	Ω
R32	10K	Ω
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R36	10K	Ω
R37	10K	Ω
R38	10K	Ω
R39	10K	Ω
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R45	10K	Ω
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R47	10K	Ω
R48	10K	Ω
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R67	10K	Ω
R68	10K	Ω
R69	10K	Ω
R70	10K	Ω
R71	10K	Ω
R72	10K	Ω
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R79	10K	Ω
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R84	10K	Ω
R85	10K	Ω
R86	10K	Ω
R87	10K	Ω
R88	10K	Ω
R89	10K	Ω
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R91	10K	Ω
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R94	10K	Ω
R95	10K	Ω
R96	10K	Ω
R97	10K	Ω
R98	10K	Ω
R99	10K	Ω
R100	10K	Ω

Table 5: Component Values

COMPONENT	VALUE	UNIT
R1	10K	Ω
R2	10K	Ω
R3	10K	Ω
R4	10K	Ω
R5	10K	Ω
R6	10K	Ω
R7	10K	Ω
R8	10K	Ω
R9	10K	Ω
R10	10K	Ω
R11	10K	Ω
R12	10K	Ω
R13	10K	Ω
R14	10K	Ω
R15	10K	Ω
R16	10K	Ω
R17	10K	Ω
R18	10K	Ω
R19	10K	Ω
R20	10K	Ω
R21	10K	Ω
R22	10K	Ω
R23	10K	Ω
R24	10K	Ω
R25	10K	Ω
R26	10K	Ω
R27	10K	Ω
R28	10K	Ω
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R30	10K	Ω
R31	10K	Ω
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R43	10K	Ω
R44	10K	Ω
R45	10K	Ω
R46	10K	Ω
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R56	10K	Ω
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R65	10K	Ω
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R67	10K	Ω
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R78	10K	Ω
R79	10K	Ω

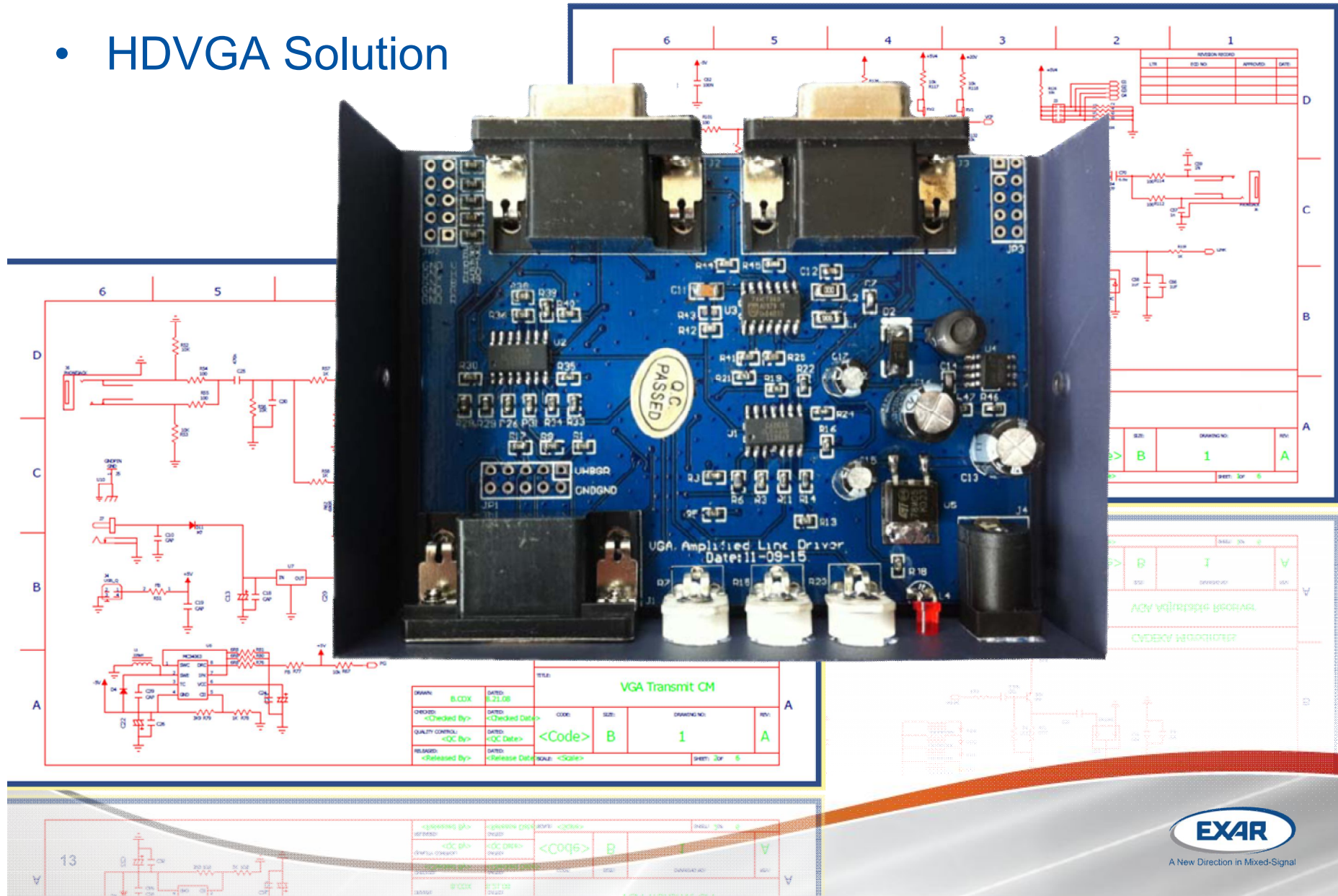
Video Surveillance Reference Designs

- SDVGA Solution

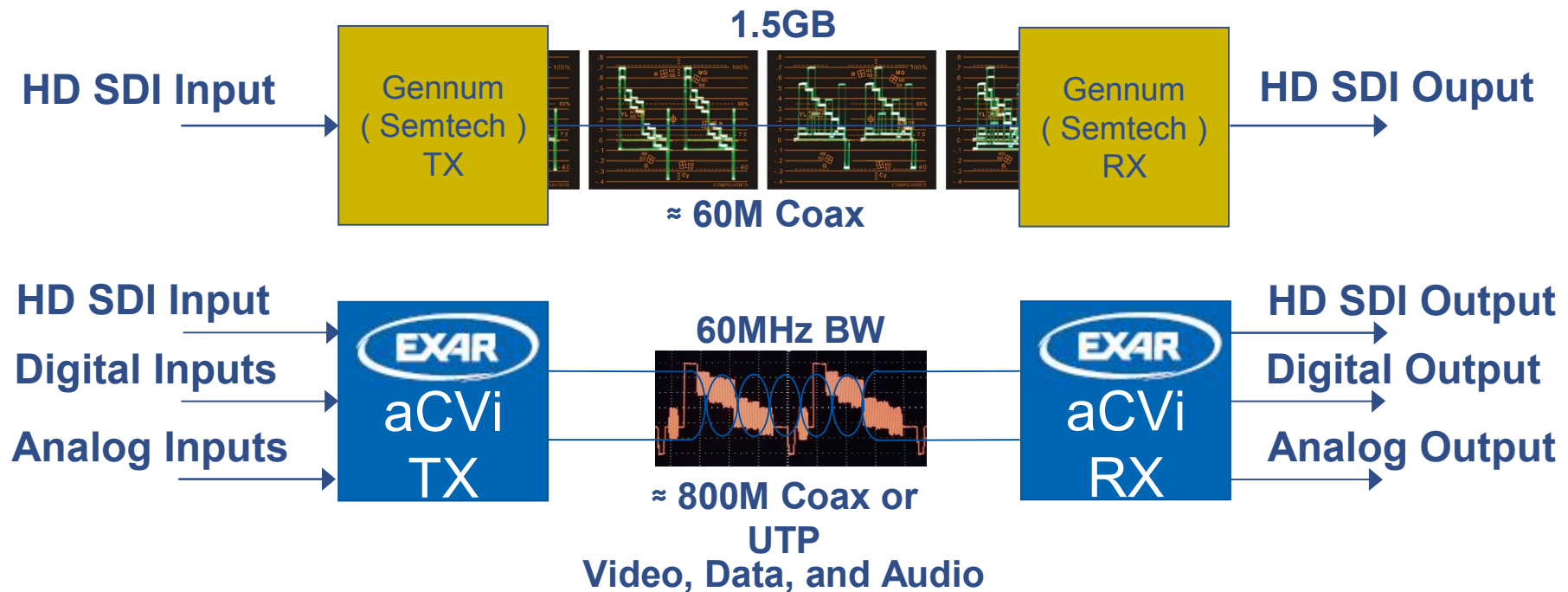


Video Surveillance Reference Designs

- HDVGA Solution



Video Surveillance Next Generation



Advanced Composite Video Interface



A New Direction in Mixed-Signal

Industrial & Medical Solutions



Application Overview



Current Shunt

- Test equipment
- Heavy industry
- Motor control
- Inverter



Pressure Sensor



Weight Scale Sensor



Flow Meters

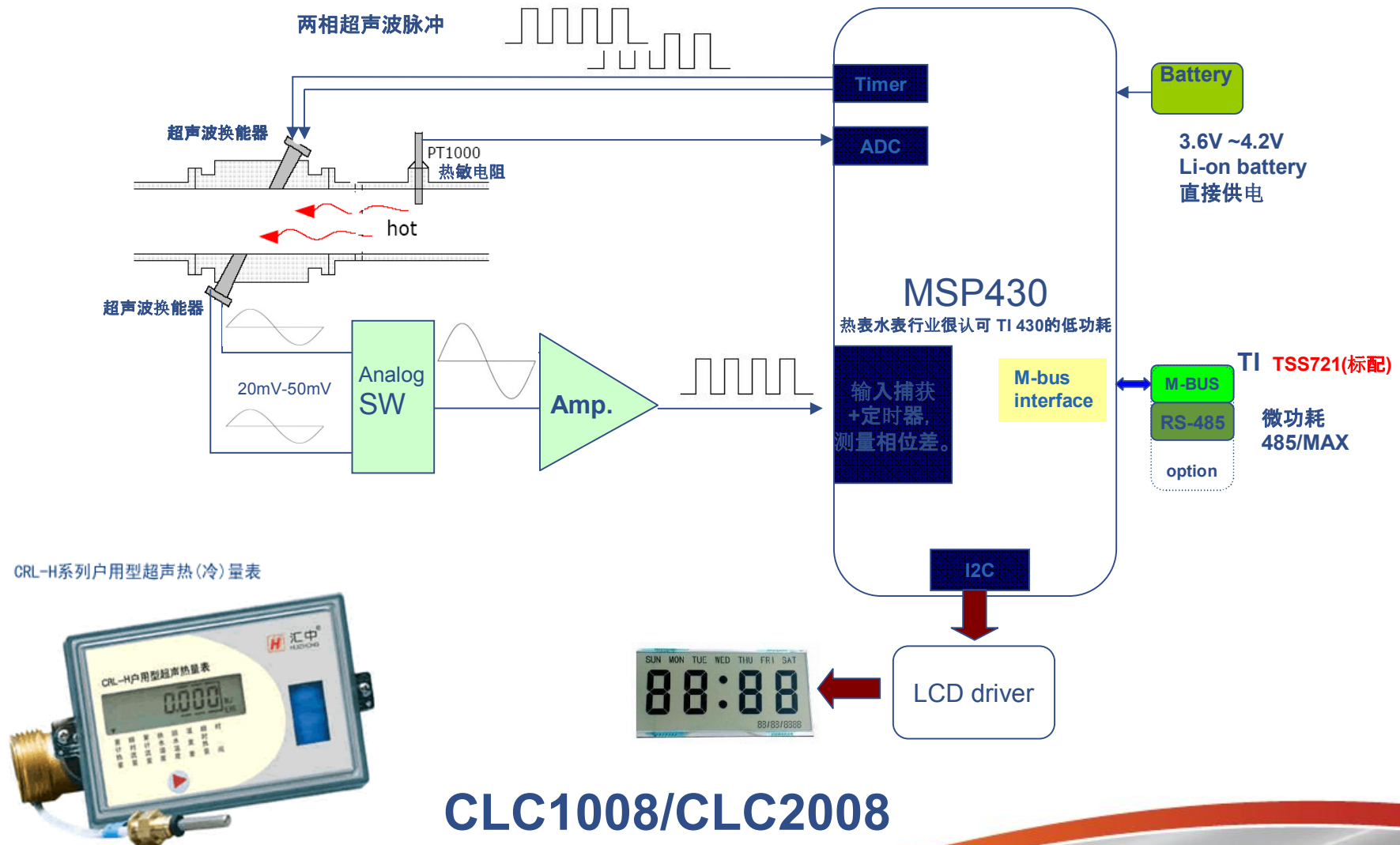
- Heat flow meter
- Magnetic flow meter



Medical

- ECG
- Pulse Oximeter

Flow Meters



ECG

- CLC1200, better frequency response in low gain setting compare to AD620.

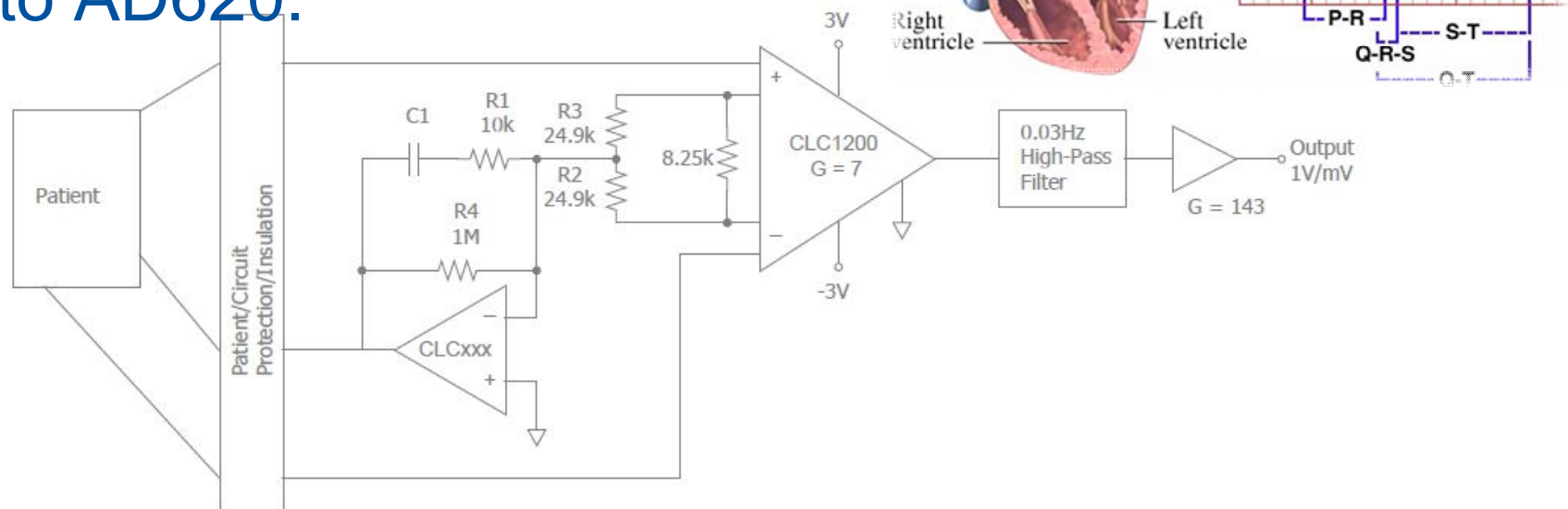


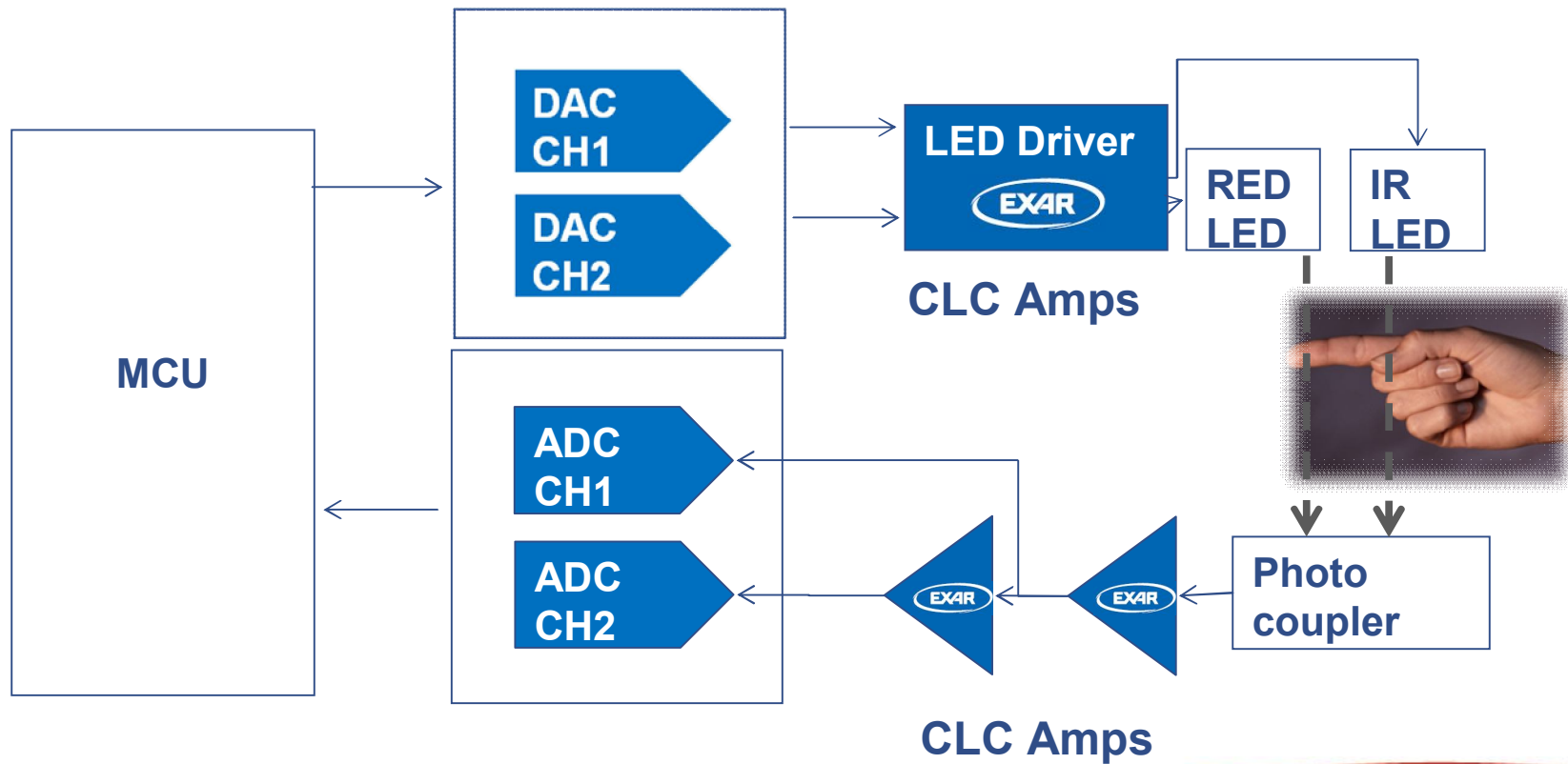
Figure 4: Typical Circuit for ECG Monitor Applications

Pulse Oximetry

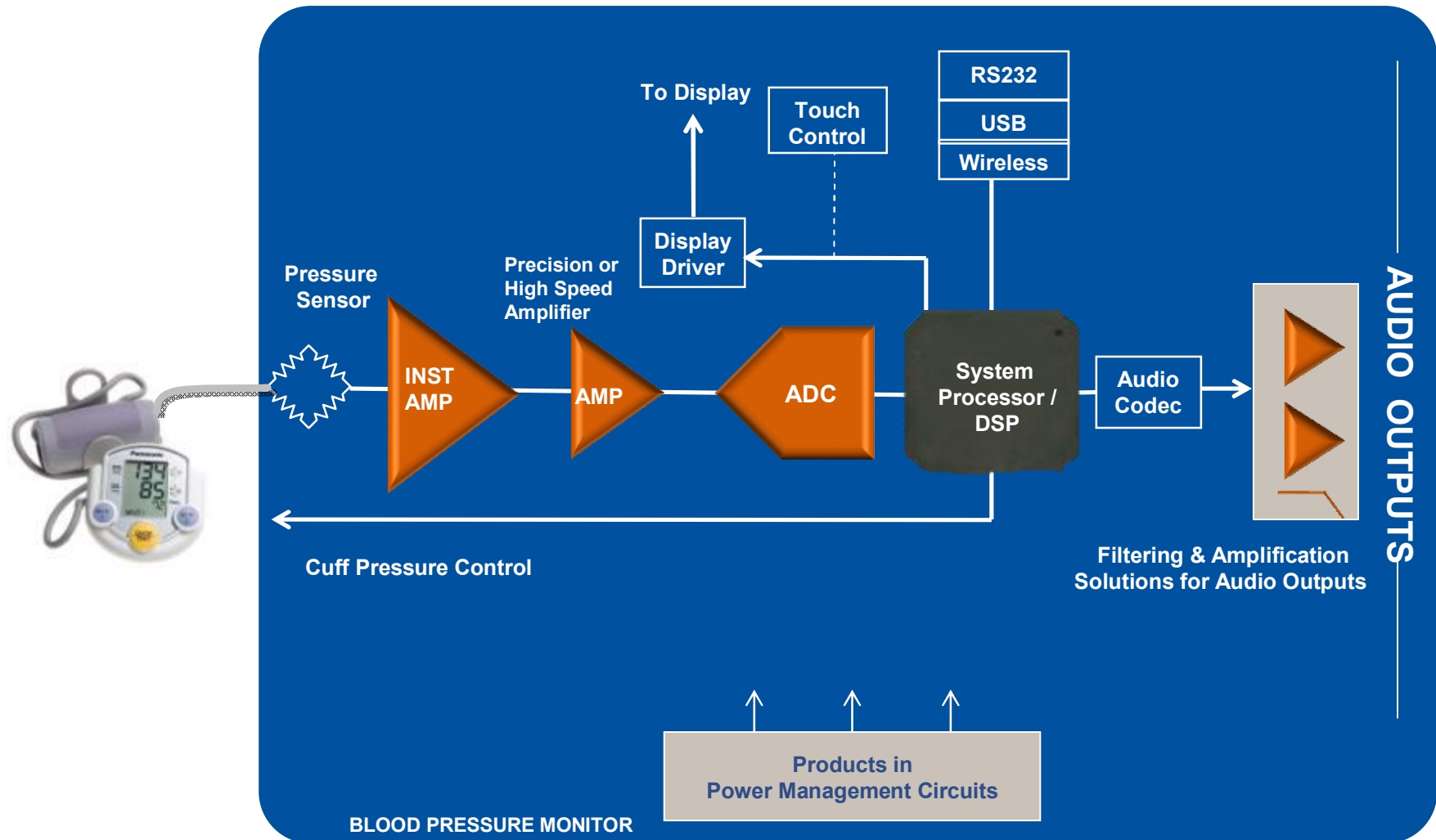
CLC2011

RRIO makes it easy to design

Better linearity than CMOS OPAMP

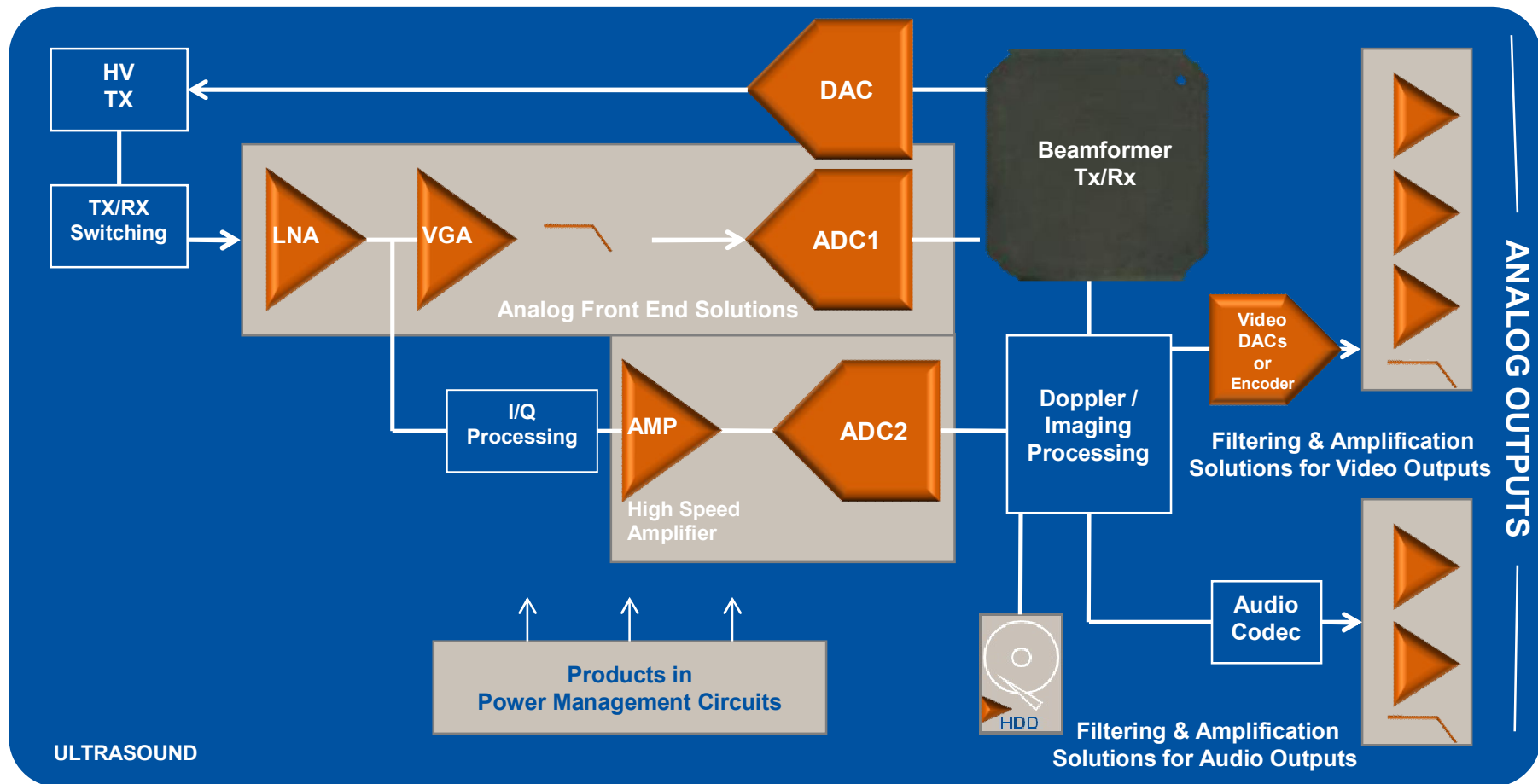


Blood Pressure Monitor



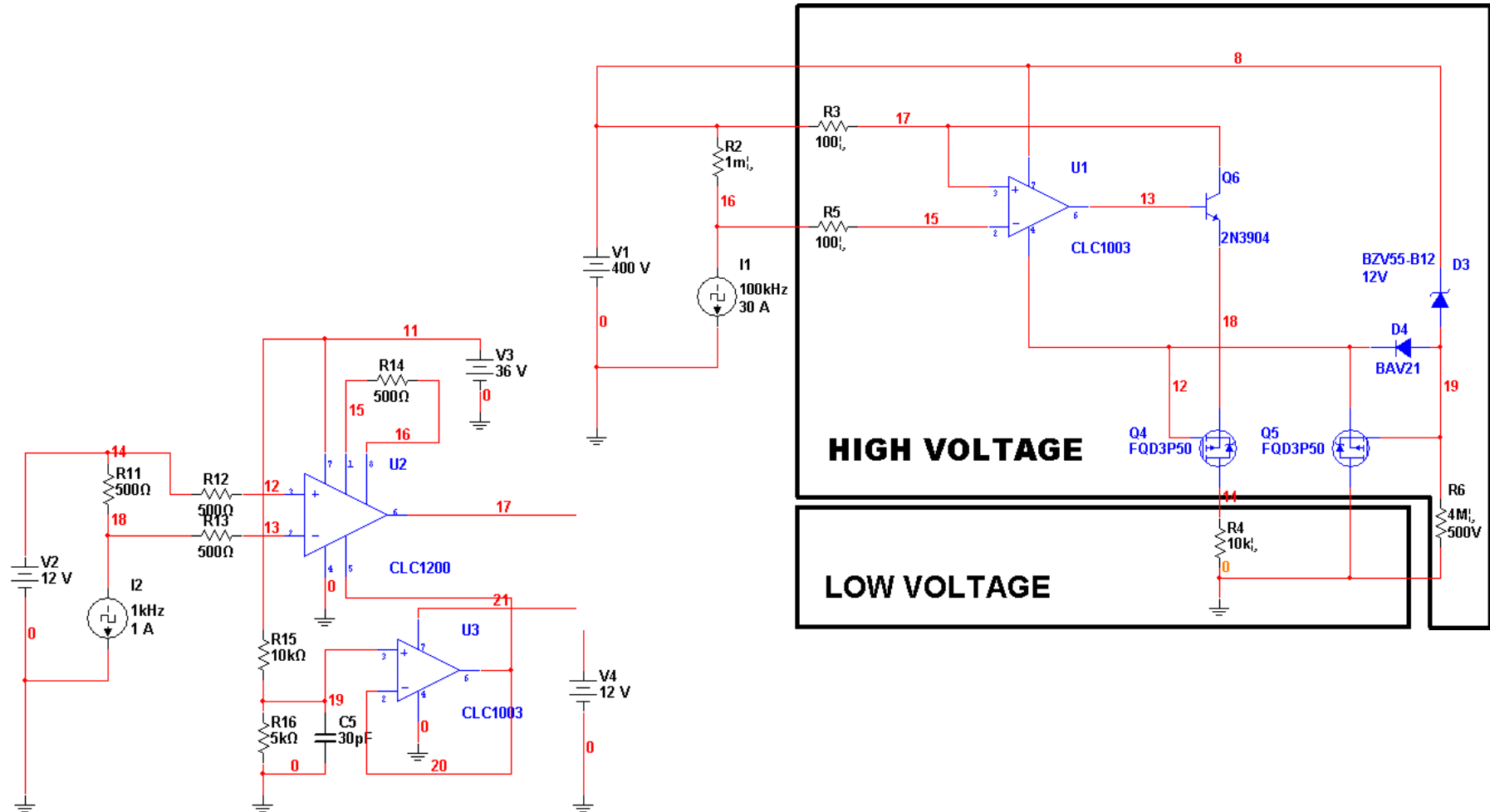
CLC1200 CLC1001 CLC1003

Ultrasound

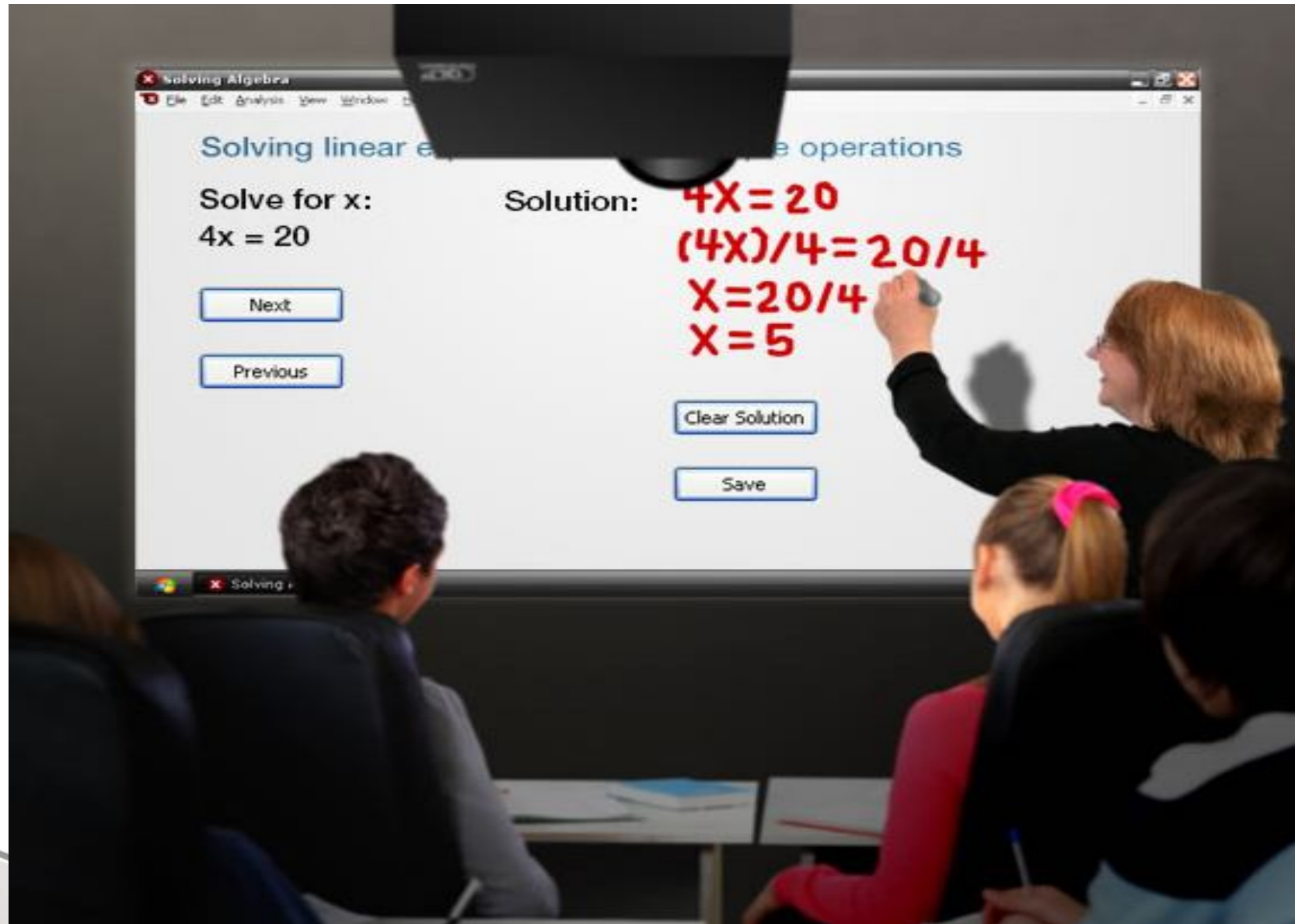


CLC1001 CDK8307 CDK3405

Miscellaneous Precision Circuit Design

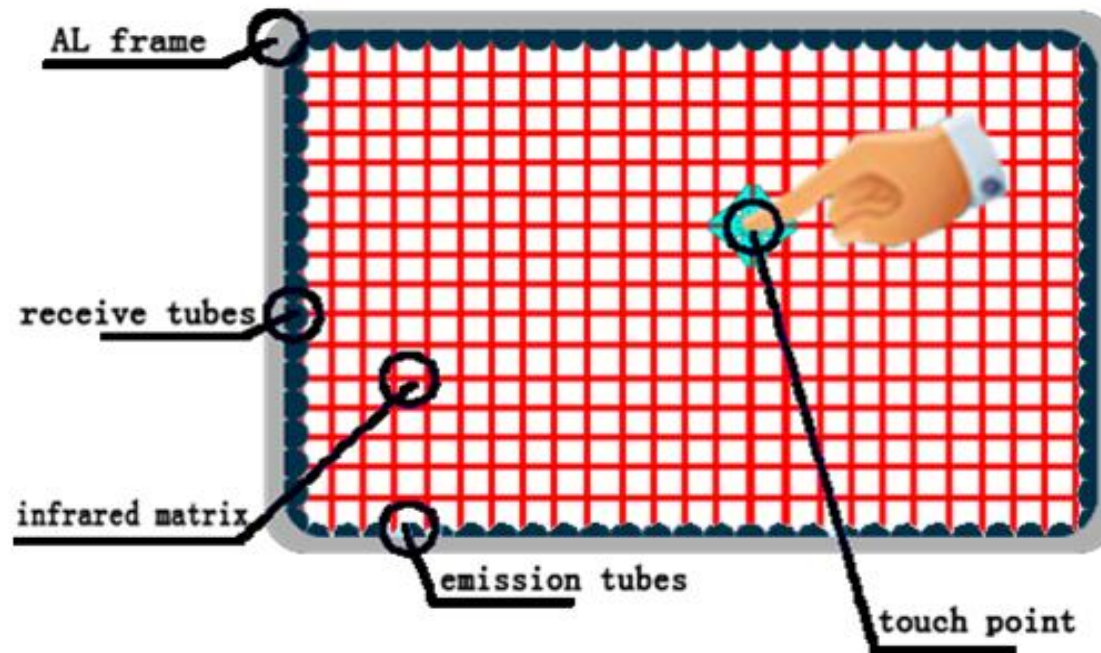


E - Whiteboard



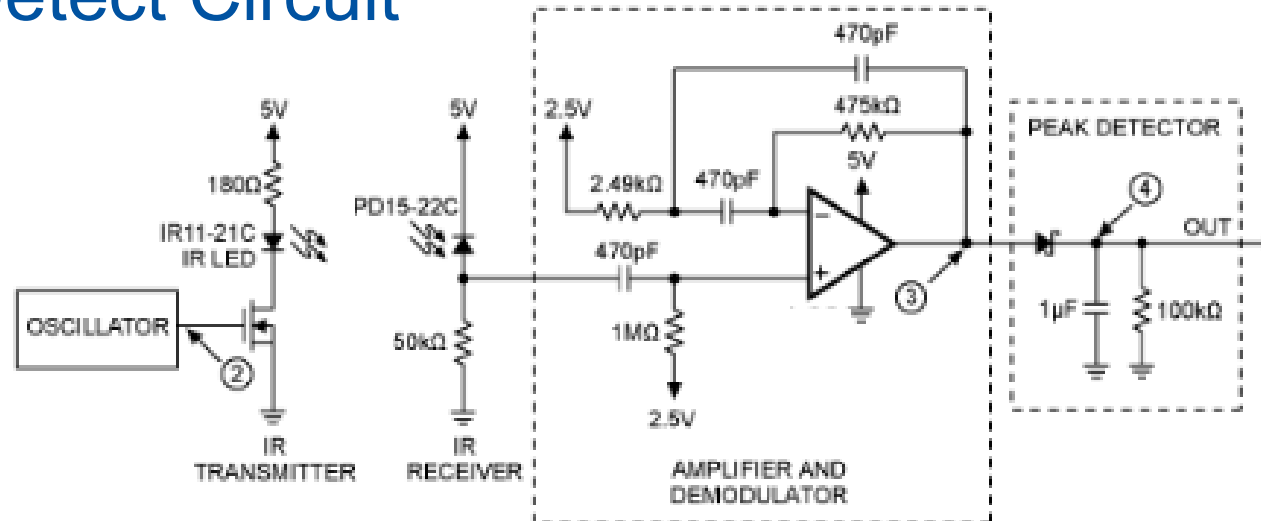
Infrared Scan EWB

- Principle: made of X, Y direction over the infrared matrix to detect and locate the user's touch area sensitively.
- Advantage: Touch by finger, no Touch Pen needed



Infrared Scan EWB

- IR Detect Circuit



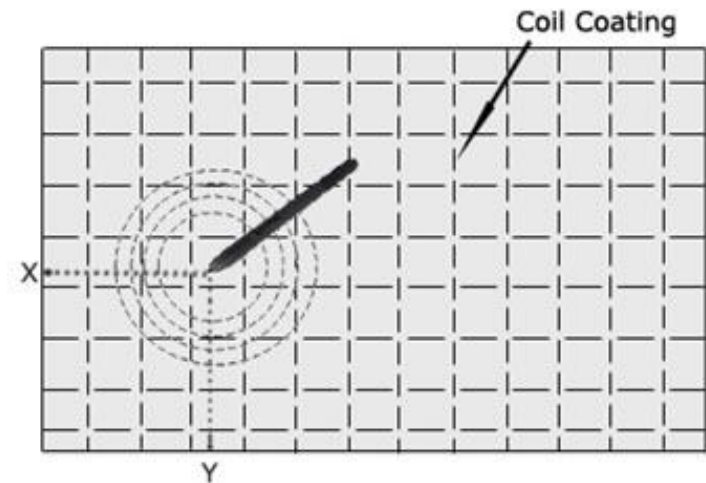
Comlinear® CLC1003

Low Distortion, Low Offset, RRIO Amplifier

- ✓ 1mV max input offset voltage, 0.00005% THD, 5.4nV/√Hz noise
- ✓ 55MHz Bandwidth, 12V/us slew rate
- ✓ 2.5V-12V power supply, Input/Output Rail to Rail

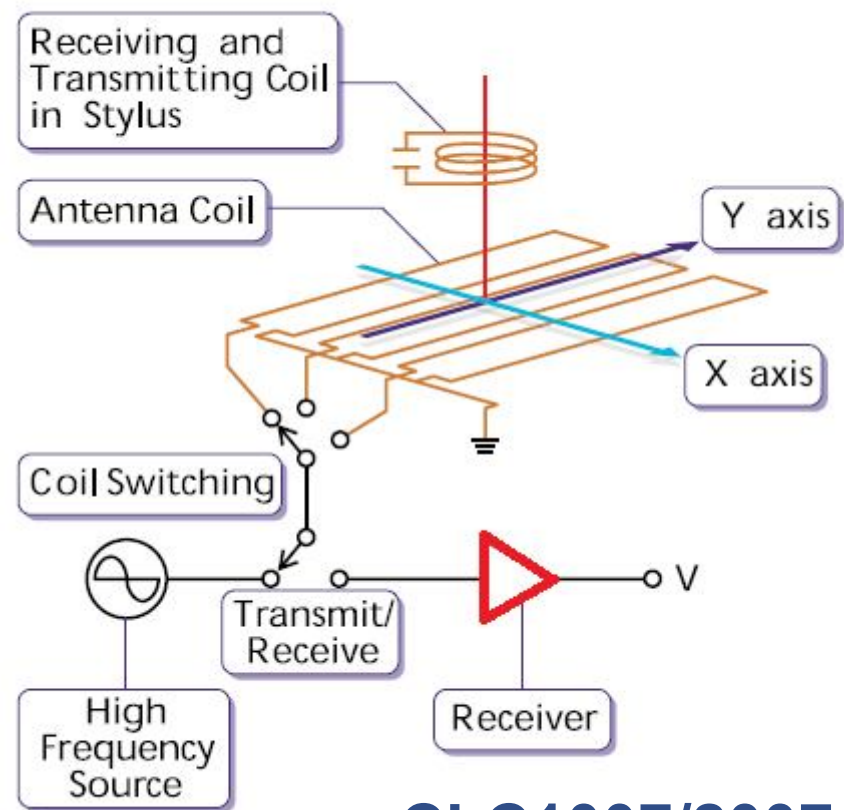
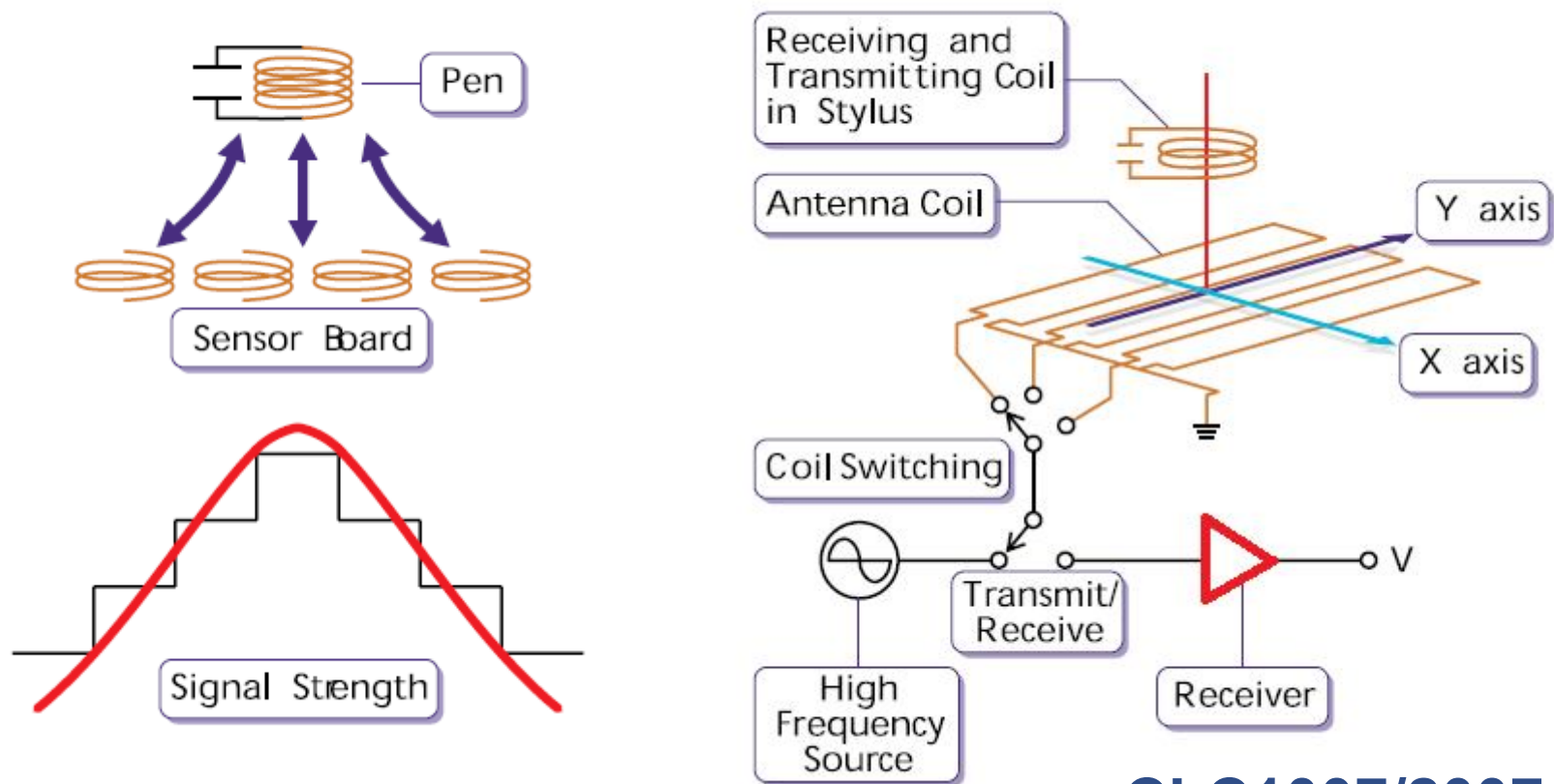
Electromagnetic pen-based EWB

- Principle: Locate position by detecting magnetic field intensity on antenna matrix and Pen



- **Advantages:**
 - Fast response
 - High resolution

Electromagnetic pen-based EWB



CLC1007/2007

Focus Parts / Applications

aCVI:

CLC4011 (x2), CLC4007, CDK1308, CDK3401, CLC2007, CLC2011

Precision Sensors

CLC1200, CLC1003

Laser Range Finder

CLC1004, CLC1001



A New Direction in Mixed-Signal

Improved Replacements for popular high performance amplifiers and converters

ADV7125 – CDK3405

FMS3818 – CDK3404

**AD8052, AD8092 – CLC2007, CLC2005,
AD8052LV**

AD8051, AD8091 – CLC1007

LMH6643 – CLC2007

LMH6644 – CLC4007

LMH6624, OPA847 – CLC1001

AD620A – CLC1200



A New Direction in Mixed-Signal

Commodity Focus Products

Direct Replacements (just verify package offering)

LM358, LM2904 – CLC2050

LM324 – CLC4050

NJM4580 – CLC2059

NJM4558, MC1458 – CLC2058

FSUSB42 – CLCUSB42

FSUSB30 – CLCUSB30

SGM8622, FAN4274, LMV932, MCP6002, LMV358 – CLC2011

MCP6004 – CLC4011



A New Direction in Mixed-Signal

Other Common High-Runners

Pin Compatible Replacements

OP275 – CLC2059

FMS6143, THS7314, THS7315, NCS2553, SGM9123 – CLC3800

ADS5282, ADS5218, ADS5272 – CDK8307

LMV922 – CLC2011

AD8032 – CLC2008

MAX4281 – CLC1009

MAX4282 – CLC2009

OPA337 – CLC1010

OPA2337 – CLC2010

AD8541, MAX4250 – CLC1010

AD8542, MAX4252 – CLC2010

Others...

See Quick Cross Reference Guide



A New Direction in Mixed-Signal

Success Stories

- Battery ATE – CLC1200
- Video Splitter – CLC4601
- Barcode Scanner – CLC2011/CLC4011
- Laser Parking System – CLC1001/CLC1003/CLC2023
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- aCVi (HD Video Transmission) – CLC2007/CDK3405/CDK2308
- Pro Audio – CLC2058/CLC2059/CLC1003
- Medical Imaging/Monitors – CLC1001/CDK8307/CDK3405/CDK3404

CADEKA "Quick" Cross Reference List

Legend:

- Strategic Performance
- Business Performance
- Financial Performance

[illegible][illegible][illegible]

Quantifying the Future State (FS)

DEKA

CADRECA "Quick" Cross Reference List

Analysis in Progress

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[illegible]

12. **Answer: D** **Difficulty: 2** **Page: 100**

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