

# CV92/CV34/CV22

# Complete Embedded Data Modems



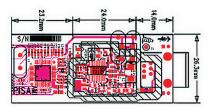
### FEATURES

- Two-chip modem solution:
  CVxx Modem Device in 48-pin TQFP or 100-pin FSBGA (CV92-F100 only)
  - CSP1040 DAA in 20-pin ETSSOP
- Data mode capabilities:
  - V.92, V.90, V.34, V.32bis, V.32, V.22bis,
    V.22. V.21, Bell 212A, Bell 103
  - V.17 and lower fax rates
  - V.44, V.42bis, MNP 5 Data Compression
  - V.42, MNP 2–4 Error Correction
- CVxx Modem Device features:
  - ARM7TDMS Microcontroller
    DSP1600S Digital Signal Processor
  - DAA interface and filters
  - Host interface configurable for 8-bit parallel, asynchronous serial or SPI mode
  - On-chip PWM speaker driver
  - SIO interface for audio codec used in voice and handset applications
  - 24.576 MHz crystal or external 27.0 MHz clock
- CSP1040 DAA features:
  - Derives power from system for reliable operation on all phone lines
  - Digital transformer isolation barrier
  - Programmable event detect for caller-ID reception and power ring detection
  - Programmable pulse shaping and spark quench
    Programmable dc-impedance
  - termination for country-specific VI templates — Programmable ac-impedance termination for
  - return loss matching — Programmable ringer-impedance emulation
  - Hardware support for pulse dialing for accurate make/break timing.
  - Hardware support for ringing level and frequency qualification for accurate ring detection.
  - Line-in-use and remote handset detection
  - World-wide caller ID support
- Single 3.3V supply required for chip set.



The CVxx family of devices is designed to serve embedded applications that require high-speed dial-up data connections. There are several versions available based on modulations and other features.

For designs that must support field-upgradeability or customized features, a version of the CV92 device is available in a 100 FSBGA that can support external flash ROM. All other versions run from on-chip ROM. The table on page 2 shows the features supported for the various versions. The CVxx devices support RS232 and 8-bit microprocessor interfaces. Additionally, the CVxx devices can be configured for operation on a 4-wire SPI bus.



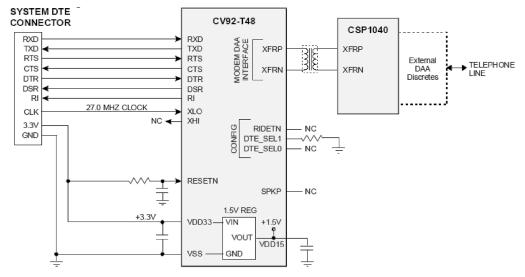
**Figure 1** shows a reference design using the 48-pin CVxx and the CSP1040. This is a 2-layer PCB with components on topside only. The layout can be integrated into a larger PCB or built as a separate module with connectors.

\* Actual speeds over U.S. telephone lines vary and are less than 56K due to current FCC regulations and line conditions.



	V.92	V.90	V.34	V.22bis	POS	V.17 FAX	Voice	Par/Ser	SPI
CV92-T48B	Х	Х	Х	Х	Х	Х	Х	Х	Х
CV92L-T48B	Х	Х	Х	Х	Х			Х	
CV90L-T48B		Х	Х	Х	Х			Х	
CV34-T48x			Х	Х	Х	Х	Х	Х	Х
CV34L-T48			Х	Х	Х			Х	
CV22-T48x				Х	Х			Х	

# Typical Modem Sub-System Block Diagrams



### Figure 2. Embedded V.92 Modem for STB/DVR using serial interface.

DEVICEPART NUMBERPACKAGECOMCODECV22LCV22-T48B-DB48 TQFP7110158770LCV22-T48B-DT48 TQFP7110158780CV34LCV34-T48B-DB48 TQFP711019500CV34LLCV34-T48B-DB48 TQFP711019510CV34LLCV34-T48B-DB48 TQFP7110158720CV90LLCV34L-T48B-DB48 TQFP7110158750CV90LLCV90L-T48B-DB48 TQFP7110158750CV92LLCV90L-T48B-DB100 FSBGA711016740CV92LCV92-F100A-DF100 FSBGA711016470LCV92-T48B-DB48 TQFP711019480LCV92-T48B-DB48 TQFP711019480LCV92-T48B-DF48 TQFP711019480LCV92-T48B-DB48 TQFP711019480LCV92-T48B-DB48 TQFP711019480LCV92-T48B-DB48 TQFP711019480LCV92-T48B-DB48 TQFP711019490LCV92-T48B-DB48 TQFP711019490LCV92-T48B-DF48 TQFP711019490LCV92-T48B-DF48 TQFP7110158730LCV92-T48B-DF48 TQFP7110158730LCV92-T48B-DF48 TQFP7110158740	Ordering Information							
I-CV22-T48B-DT      48 TQFP      7110158780        CV34      L-CV34-T48B-DB      48 TQFP      7110109500        L-CV34-T48B-DT      48 TQFP      7110109510        CV34L      L-CV34L-T48B-DB      48 TQFP      7110158720        L-CV34L-T48B-DT      48 TQFP      7110158720        L-CV34L-T48B-DT      48 TQFP      7110158720        CV90L      L-CV90L-T48B-DT      48 TQFP      7110158750        CV90L      L-CV90L-T48B-DT      48 TQFP      7110158760        CV90L      L-CV90L-T48B-DT      48 TQFP      7110158760        L-CV90L-T48B-DT      100 FSBGA      7110146740        L-CV92-F100A-DT      100 FSBGA      7110146750        L-CV92-T48B-DB      48 TQFP      711019480        L-CV92-T48B-DB      48 TQFP      7110158730        L-CV92-T48B-DB <td< td=""><td>DEVICE</td><td>PART NUMBER</td><td>P A C K A G E</td><td>COMCODE</td></td<>	DEVICE	PART NUMBER	P A C K A G E	COMCODE				
CV34      L-CV34-T48B-DB      48 TQFP      7110109500        L-CV34-T48B-DT      48 TQFP      7110109510        CV34L      L-CV34L-T48B-DB      48 TQFP      7110158720        L-CV34L-T48B-DT      48 TQFP      7110158720        CV90L      L-CV90L-T48B-DB      48 TQFP      7110158750        CV90L      L-CV90L-T48B-DB      48 TQFP      7110158750        CV90L      L-CV90L-T48B-DB      48 TQFP      7110158760        CV90L      L-CV90L-T48B-DT      100 FSBGA      7110146740        CV92      L-CV92-F100A-DT      100 FSBGA      7110146750        L-CV92-F100A-DT      100 FSBGA      7110109480        L-CV92-T48B-DB      48 TQFP      7110109480        LCV92-T48B-DB      48 TQFP      7110109480        LCV92-T48B-DB      48 TQFP      7110109480        LCV92-T48B-DB      48 TQFP      7110109480        LCV92-T48B-DT      48 TQFP      7110158730        LCV92-T48B-DT      48 TQFP      7110158730        LCV92-T48B-DT      48 TQFP      7110158730	CV22	L-CV22-T48B-DB	48 TQFP	7110158770				
I-CV34-T48B-DT      48 TQFP      7110109510        CV34L      I-CV34L-T48B-DB      48 TQFP      7110158720        I-CV34L-T48B-DT      48 TQFP      7110159010        CV90L      I-CV90L-T48B-DB      48 TQFP      7110158750        CV90L      I-CV90L-T48B-DB      48 TQFP      7110158760        CV90L      I-CV90L-T48B-DT      48 TQFP      7110158760        I-CV90L-T48B-DT      48 TQFP      7110158760        I-CV90L-T48B-DT      100 FSBGA      7110146740        I-CV92-F100A-DT      100 FSBGA      7110146750        I-CV92-F100A-DT      100 FSBGA      7110146750        I-CV92-F100A-DT      100 FSBGA      7110146750        I-CV92-F108-DB      48 TQFP      7110146750        I-CV92-F148B-DB      48 TQFP      711019480        CV92L      48 TQFP      711019480        I-CV92-F148B-DB      48 TQFP      7110158730        I-CV92L-T48B-DE      48 TQFP      7110158730        I-CV92L-T48B-DE      48 TQFP      7110158730		L-CV22-T48B-DT	48 TQFP	7110158780				
CV34L      L-CV34L-T48B-DB      48 TQFP      7110158720        L-CV34L-T48B-DT      48 TQFP      7110159010        CV90L      L-CV90L-T48B-DB      48 TQFP      7110158750        L-CV90L-T48B-DT      48 TQFP      7110158760      100158760        L-CV90L-T48B-DT      48 TQFP      7110158760      100158760        L-CV92-F100A-DB      100 FSBGA      7110146740      100146740        L-CV92-F100A-DT      100 FSBGA      7110146750      100146750        L-CV92-F100A-DT      100 FSBGA      7110109480      100146750        L-CV92-T48B-DT      48 TQFP      7110109480      100146750        L-CV92-T48B-DT      48 TQFP      7110158730      10109480        L-CV92-T48B-DT      48 TQFP      7110158730      101058730	CV34	L-CV34-T48B-DB	48 TQFP	7110109500				
I-CV34L-T48B-DT      48 TQFP      7110159010        CV90L      I-CV90L-T48B-DB      48 TQFP      7110158750        I-CV90L-T48B-DT      48 TQFP      7110158760        CV92      I-CV92-F100A-DB      100 FSBGA      7110146740        I-CV92-F100A-DB      100 FSBGA      7110146750        I-CV92-F100A-DT      100 FSBGA      711019480        I-CV92-T48B-DB      48 TQFP      711019480        I-CV92-T48B-DB      48 TQFP      711019480        CV92L      I-CV92-T48B-DB      48 TQFP        I-CV92-T48B-DB      48 TQFP      711019480        CV92L      I-CV92-T48B-DB      48 TQFP        I-CV92-T48B-DB      48 TQFP      711019490        I-CV92-T48B-DB      48 TQFP      7110158730        I-CV92-T48B-DF      48 TQFP      7110158740		L-CV34-T48B-DT	48 TQFP	7110109510				
CV90L      L-CV90L-T488-DB      48 TQFP      7110158750        L-CV90L-T48B-DT      48 TQFP      7110158760        CV92      L-CV92-F100A-DB      100 FSBGA      7110146740        L-CV92-F100A-DT      100 FSBGA      7110146750        L-CV92-T48B-DB      48 TQFP      711019480        L-CV92-T48B-DB      48 TQFP      711019480        L-CV92-T48B-DT      48 TQFP      711019480        L-CV92-T48B-DB      48 TQFP      711019480        L-CV92-T48B-DB      48 TQFP      711019480        L-CV92-T48B-DB      48 TQFP      711019490        L-CV92-T48B-DB      48 TQFP      7110158730	CV34L	L-CV34L-T48B-DB	48 TQFP	7110158720				
L-CV90L-T48B-DT      48 TQFP      7110158760        CV92      L-CV92-F100A-DB      100 FSBGA      7110146740        L-CV92-F100A-DT      100 FSBGA      7110146750        L-CV92-T48B-DB      48 TQFP      711019480        L-CV92-T48B-DT      48 TQFP      711019480        L-CV92-T48B-DT      48 TQFP      711019490        L-CV92L-T48B-DB      48 TQFP      7110158730        L-CV92L-T48B-DT      48 TQFP      7110158740		L-CV34L-T48B-DT	48 TQFP	7110159010				
CV92      L-CV92-F100A-DB      100 FSBGA      7110146740        L-CV92-F100A-DT      100 FSBGA      7110146750        L-CV92-T48B-DB      48 TQFP      7110109480        L-CV92-T48B-DT      48 TQFP      7110109490        CV92L      L-CV92L-T48B-DB      48 TQFP        L-CV92L-T48B-DB      48 TQFP      7110109490        L-CV92L-T48B-DB      48 TQFP      7110158730	CV90L	L-CV90L-T48B-DB	48 TQFP	7110158750				
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L-CV92-T48B-DB      48 TQFP      7110109480        L-CV92-T48B-DT      48 TQFP      7110109490        L-CV92-T48B-DB      48 TQFP      7110109490        L-CV92L-T48B-DB      48 TQFP      7110158730        L-CV92L-T48B-DT      48 TQFP      7110158740	CV92	L-CV92-F100A-DB	100 FSBGA	7110146740				
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CV92L      L-CV92L-T488-DB      48 TQFP      7110158730        L-CV92L-T48B-DT      48 TQFP      7110158740		L-CV92-T48B-DB	48 TQFP	7110109480				
L-CV92L-T48B-DT 48 TQFP 7110158740		L-CV92-T48B-DT	48 TQFP	7110109490				
	CV92L	L-CV92L-T48B-DB	48 TQFP	7110158730				
		L-CV92L-T48B-DT	48 TQFP	7110158740				
L-CSP104043-ETI-D 20-pin ETSOP /1100/2260	CSP1040	L-CSP1040A3-E11-D	20-pin ETSSOP	7110072260				
L-CSP1040A3-E11-DT 20-pin ETSSOP 7110072670		L-CSP1040A3-E11-DT	20-pin ETSSOP	7110072670				

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