



VEMU INSTITUTE OF TECHNOLOGY

P.Kothakota, Chittoor District -517112

**Technical Talk on
"Compact
Reconfigurable IO
(RIO) Modules and Lab
View"
10-02-2021**



VEMU INSTITUTE OF TECHNOLOGY

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P.Kothakota,

04-02-2021

To
Sri.V.Hruday Kumar,
Product Engineer,
Techfluent Solutions Pvt.Ltd,
Hyderabad.

Respected Sir,

Sub: Technical Talk on "Compact Reconfigurable IO (RIO) Modules and Lab View"- ECE Students – Reg.

I wish to bring to your notice that our college is one of the NAAC accredited Engineering Colleges in Andhra Pradesh with good reputation, producing students of good quality. This college offers four year **B.Tech** Degree course in disciplines of **E.C.E, E.E.E, C.S.E, and M.E.**

Department of ECE is planning to conduct a Technical Talk on the topic "**Compact Reconfigurable IO (RIO) Modules and Lab View**" for ECE students and staff. In this regard we request you to kindly accept our request as guest speaker and send your acceptance and prescribed date through Letter/fax/E-mail/Phone as early as possible.

Thanking you

Acceptance received from resource person through phone call
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HOD/ECE

[Signature]
H.O.D (ECE)
HEAD

DEPARTMENT OF ECE
VEMU INSTITUTE OF TECHNOLOGY
P. KOTHAKOTA - 517 112

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VEMU/ECE/TT/2018-19

Date: 05/02/2021

CIRCULAR

It is hereby informed to all the ECE faculty and IV ECE students that there is technical talk on 10-02-2021 by Sri. V. Hruday Kumar, Product Engineer, Techfluent Solutions Pvt. Ltd, Hyderabad on the topic." **Compact Reconfigurable IO (RIO) Modules and Lab View**".

Hence all the faculty and IV ECE students are requested to attend the Technical talk without fail

VENUE: ECE SEMINAR HALL

TIMINGS: 2:00PM -3:30PM

Copy to: The Principal Desk

Circulate among all faculty members

Circulate to IV ECE Students

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

TECHNICAL TALK ATTENDANCE

TITLE: Compact Reconfigurable IO (RIO) Modules and Lab View

DATE: 10-02-2021

RESOURCE PERSON: Sri. V. Hruday Kumar

S.NO	ROLL NUMBER	NAME OF STUDENT	YEAR	SIGNATURE
1	174M1A0401	A ADITHYA YASWANTH	IV	A.A.Yaswanth
2	174M1A0402	A. MOUNIKA	IV	A.Mounika
3	174M1A0403	A.N. HEMAVATHI	IV	A.N.Hemavathi
4	174M1A0404	A. SANTHIPRIYA	IV	A.Santhipriya
5	174M1A0405	A.V. SANTHOSH	IV	A.V.Santhosh
6	174M1A0406	A. YASWANTH	IV	A.Yaswanth
7	174M1A0407	A. HYMAVATHI	IV	A.Hymavathi
8	174M1A0408	AVALAKUNTA OMPRAKASH	IV	A.Omprakash
9	174M1A0409	B. BALAJI	IV	B.Balaji
10	174M1A0410	B. GIRI	IV	B.Giri
11	174M1A0411	B. PAVAN KUMAR	IV	B.Pavan Kumar
12	174M1A0412	B. PRAKASH	IV	B.Prakash
13	174M1A0413	B. VENUGOPAL	IV	B.Venugopal
14	174M1A0414	BALA BOJJAPPA	IV	B.Bojjappa
15	174M1A0415	BALA YAMUNA	IV	B.Yamuna
16	174M1A0416	BILLE HARISH	IV	B.Harish
17	174M1A0417	BUDIGI NAVYA SREE	IV	B.Navya Sree

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18	174M1A0418	C YAMINI	IV	C. Yamini
19	174M1A0419	CHEEKALA AKHIL	IV	C. Akhil
20	174M1A0420	CHENNURU GANGADHAR REDDY	IV	C. Gangadhar Reddy
21	174M1A0421	D MADHAVI LATHA	IV	D. Madhavi Latha
22	174M1A0422	DESUGANI NAGAVENI	IV	D. Nagaveni
23	174M1A0423	E KALYAN KUMAR	IV	E. Kalyan Kumar
24	174M1A0424	E. REVANTH REDDY	IV	E. Revanth Reddy
25	174M1A0425	G B VISHNU PRIYA	IV	G. B. Vishnu Priya
26	174M1A0426	G BHASKAR	IV	G. Bhaskar
27	174M1A0427	G JAHNAVI	IV	G. Jahnavi
28	174M1A0428	G R GAYATHRI	IV	ABSENT
29	174M1A0429	G MURALI	IV	G. Murali
30	174M1A0430	G SWETHA	IV	G. Swetha
31	174M1A0431	G RAMYASRI	IV	G. Ramyasri
32	174M1A0432	G PARTHASARATHY REDDY	IV	G. PARTHASARATHY REDDY
33	174M1A0434	J ANJU PRIYA	IV	J. Anju
34	174M1A0435	J VINOD	IV	J. Vinod
35	174M1A0436	J MALINI	IV	J. Devedra
36	174M1A0437	K DEVENDRA	IV	J. Malini
37	174M1A0439	K SAI KRISHNA	IV	K. Sai Krishna
38	174M1A0440	K SWARNA	IV	K. Swarna
39	174M1A0441	K THEJASWINI	IV	K. Tejaswini
40	174M1A0442	K DEEPAK	IV	K. Deepak

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41	174M1A0443	K DEEPIKA	IV	K. Deepika
42	174M1A0444	K SANDHYA RANI	IV	K. Sandharani
43	174M1A0445	K MALLESWARI	IV	K. Malleswari
44	174M1A0446	K VINAY	IV	K. Vinay
45	174M1A0447	K AJITH	IV	Ajith.
46	174M1A0448	K THARUN	IV	K. Tharun
47	174M1A0449	M NAVYASREE	IV	M. Navya Sree
48	174M1A0450	MS SHAMEER	IV	M.S. Shameer
49	174M1A0451	M THARUN	IV	M. Tharun
50	174M1A0452	M THASMIYA	IV	ABSENT
51	174M1A0453	M VASUDHA	IV	M. Vasudha
52	174M1A0454	M SRAVANI	IV	M. Sravani
53	174M1A0456	M THEJA	IV	M. Theja
54	174M1A0457	M SUSMITHA	IV	M. Susmitha
55	174M1A0458	MUPPIRI YAMUNA	IV	M. Yamuna
56	174M1A0459	M NIRMALA	IV	M. Nirmala
57	174M1A0460	N GAYATHRI	IV	ABSENT
58	174M1A0461	N REENA	IV	N. Reena
59	174M1A0462	N REKHA	IV	N. Rekha
60	174M1A0463	N SUMA HRUDAYA	IV	N. Suma Hrudaya
61	174M1A0464	N THRILOK CHAND	IV	N. Thri Lok Chand.
62	174M1A0465	N JAGADEESH BABU	IV	N. Jagadeesh
63	174M1A0466	P PRUDHVIRAJ	IV	P. Prudhviraj
64	174M1A0467	P DILLIBABU	IV	P. Dillibabu

65	174M1A0468	P KARTHIK	IV	ABSENT
66	174M1A0469	P DHARANI	IV	P. Dharani
67	174M1A0470	M PAVITHRA	IV	M. Pavithra
68	174M1A0471	P LAVANYA	IV	P. Lavanya
69	174M1A0472	P MANIKANTA	IV	P. Manikanta
70	174M1A0473	P PRAGNA REDDY	IV	P. Pragna Reddy
71	174M1A0474	P PRASANTHI	IV	P. Prashanthi
72	174M1A0475	P CHANDU PRASAD REDDY	IV	ABSENT
73	174M1A0476	R HARI PRIYA	IV	R. Hari Priya
74	174M1A0477	R MADHUMITA	IV	R. Madhumi
75	174M1A0478	R NAVEEN KUMAR	IV	R. Naveen kumar.
76	174M1A0479	R MUNIPRATHAP	IV	R. Muniprathap
77	174M1A0480	R GNANA KUMAR	IV	ABSENT
78	174M1A0481	R.SAI PRIYA	IV	R. Saipriya
79	174M1A0482	R RAJANI	IV	R. Rajani
80	174M1A0483	S AIYESHA	IV	S. Aiysha
81	174M1A0484	S JOICEVICTORIA	IV	S. Joice victoria
82	174M1A0485	S KRISHNA MURTHY	IV	S. Krishnamurthy
83	174M1A0486	S MAHALAKSHMI	IV	S. Mahalakshmi
84	174M1A0487	S NASREEN	IV	S. NASREEN.
85	174M1A0488	S P MEENA	IV	S. P MEENA
86	174M1A0490	S SANTHOSH KUMAR	IV	S. Santhosh kumar
87	174M1A0491	S SWAPNA	IV	S. Swapna
88	174M1A0492	S VANITHA	IV	S. Vanitha


89	174M1A0493	S JAGADEESH	IV	
90	174M1A0494	S KIRAN ACHARI	IV	S. Kiran Achari
91	174M1A0495	S BHARATH	IV	S. Bharath
92	174M1A0496	S MOHAMMAD RAFI	IV	S. Mohamad Rafi
93	174M1A0497	S NAVEEN KUMAR	IV	S. Naveen Kumar
94	174M1A0498	S PAVITHRA	IV	S. Pavithra
95	174M1A0499	S ROHINI	IV	S. Rohini
96	174M1A04A0	S CHANDINI	IV	S. Chandini
97	174M1A04A2	T JAGANMOHAN REDDY	IV	T. Jagannathan
98	174M1A04A3	T SUBRAMANYAM	IV	T. Subramanyam
99	174M1A04A4	V B RUKESH KUMAR	IV	V. B. Rukesh Kumar
100	174M1A04A5	V BHAVANA	IV	V. Bhavana
101	174M1A04A6	V CHITHRA	IV	V. Chithra
102	174M1A04A7	V DINESH	IV	V. Dinesh
103	174M1A04A8	V INDUMATHI	IV	V. Indumathi
104	174M1A04A9	V KEERTHI	IV	V. Keerthi
105	174M1A04B0	V L SUNITHA	IV	V. L. Sunitha
106	174M1A04B1	V SAMREEN	IV	V. Samreen
107	174M1A04B2	V THARUN	IV	V. Tharun
108	174M1A04B3	V JOSHNA	IV	V. Joshna
109	174M1A04B4	V LEELAMADHURI	IV	V. Leelamadhuri
110	174M1A04B5	V JOSHNA PRIYA	IV	V. Joshna Priya
111	174M1A04B6	Y NEHA	IV	Y. Neha
112	174M1A04B7	Y THULASIRAM NAIDU	IV	Y. Thulasiram Naidu

113	174M1A04B8	Y CHIRANJEEVI	IV	Y. Chiranjeevi
114	174M1A04B9	Y VIRITHA	IV	Y. Viritha
115	174M1A04C0	G MOUNISHA	IV	G. Mounisha
116	184M5A0401	D BHAVANA	IV	D. Bhavana
117	184M5A0402	J POORNA CHANDRIKA	IV	J. Poorna Chandrika
118	184M5A0403	K SOMASEKHAR	IV	K. Somasekhara
119	184M5A0404	K YASMIN	IV	K. Yasmin
120	184M5A0405	KALASAMUDRAM AKHILA	IV	K. Akhila
121	184M5A0406	MUDIGOLAM DILEEP	IV	M. Dileep
122	184M5A0407	M LATHA	IV	M. Latha
123	184M5A0408	N NIRANJAN	IV	N. Niranjana
124	184M5A0409	P VINITHA	IV	P. Vinitha
125	184M5A0412	V POOJA	IV	V. Pooja
126	184M5A0413	V JAYA PRAKASH	IV	V. Jaya Prakash
127	17HR1A0466	N SHIRISHA	IV	N. Shirisha


COORDINATOR


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Report-on Technical Talk

“Compact Reconfigurable IO (RIO) Modules and Lab View”

A Technical Talk on “Compact Reconfigurable IO(RIO) Modules and Lab View” was organized by Department of ECE under MOU Activity in association with Techfluent Solutions Pvt. Ltd on 10th Feb 2021.

This program was organized by Prof., S.MuniRatnam, Head of the department with the co-ordination of Mr.C. Manikanta, Assistant Professor, ECE Department.

The Resource Person for this program is Sri V. Hruday Kumar, Product Engineer-Techfluent Solutions Pvt.Ltd, Hyderabad. He explained various concepts on CRIO like


1. Hardware
2. Software
3. Applications

The CompactRIO system is a combination of a real-time controller chassis, reconfigurable IO Modules (RIO), an FPGA module and an Ethernet expansion chassis. Third-party modules are also available, and are generally compatible with NI-produced chassis controllers.

CompactRIO real-time controllers include a microprocessor for implementing control algorithms, and support a wide range of clock frequencies. Controllers are only compatible with National Instruments C Series I/O Modules. I/O modules are hot swappable (can be connected/disconnected while the unit is powered up).

The FPGA Module may be used to implement high-performance data processing on reconfigurable fabric. Such data processing may be performed on data streaming in from connected I/O Modules. The module is powered by a Xilinx Virtex high-performance FPGA. The FPGA can be programmed separately and is connected to the real-time controller using an internal PCI bus.

The Ethernet chassis includes an Ethernet port (8P8C), which can connect the CompactRIO controller to a PC. The chassis is available in 4 slot and 8 slot varieties. Third-party modules are manufactured for additional features, such as LCD or VGA displays. Newer, high-performance CompactRIO controllers also have built-in VGA graphics which can be connected to a monitor for observing operation.


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CompactRIO controllers can be programmed with LabVIEW, National Instruments' graphical programming language C; C++; or Java. LabVIEW must be used to program the embedded FPGA.

The controller comes with a Linux based RTOS, NI Linux Real-Time, created as part of the Linux Foundation's Real-Time Linux Collaborative Project. Programs created in LabVIEW are compiled into machine code for NI Linux Real-Time and hardware description language (HDL) for the Xilinx FPGA toolchain automatically during deployment of the code to the target.

The Linux Real-Time OS running in the real-time controller supports a filesystem and hence data logging is also available at the controller level. The Full Development System version of LabVIEW does not come with the modules needed to program the cRIO. The Real-Time Module and FPGA Modules have to be purchased separately and installed with LabVIEW for programming the hardware. The programming is done on a Host PC running the Windows operating system and is deployed on the cRIO via Ethernet.



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*Department of
Electronics & Communication Engineering*

TECHNICAL TALK

Compact Reconfigurable IO (C R I O) & Lab View

10th Feb, 2021 @ 10:00 AM

by

Sri.V. Hruday Kumar

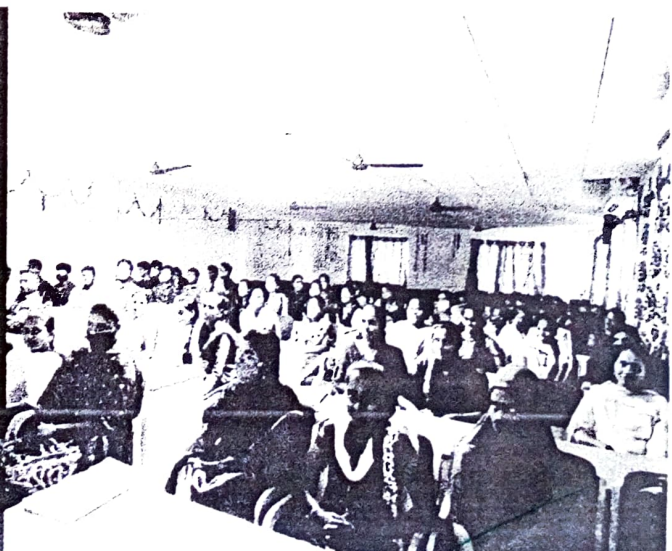
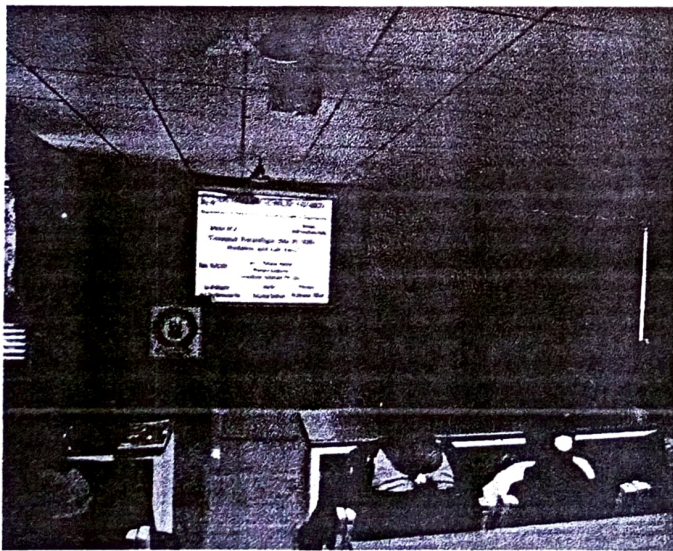
Product Engineer

Techfluent Solutions, Hyderabad

Mr. C. Manikanta
Coordinator

Dr. S. Muni Rathnam
HOD -ECE

Dr. Naveen Kilari
Principal



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CompactRIO systems are often used as an industrial control unit, where a small form factor are important. CompactRIO is commonly used as headless systems (without a user interface) which are designed to run in a confined space, under harsh conditions. CompactRIO systems can also be connected to a host PC which can be used for supervisory purposes and for displaying logged data.

Other examples of applications areas are: Intelligent Systems for the Industrial Internet of Things (IIoT), Power Electronics and Inverter Control, Condition Monitoring of Rotating Equipment, Power Quality Monitoring, Transportation and Heavy Equipment, and Laser or Hydraulic Control.

The CompactRIO was used from 2009 until 2015 as the primary control unit in the FIRST Robotics Competition. It has been replaced now by the National Instruments roboRIO

The total program was successfully completed with the cooperation of each and every faculty member of the department and student participants.



Head of the Department

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