high power led driver circuit design and application supplied cd rom power supplies for led driving traditional chinese edition

#high power LED driver design #LED driver circuits #LED power supply solutions #LED driving applications #high current LED drivers

Explore the intricacies of high power LED driver circuit design and their practical applications. This resource delves into effective methods for powering LEDs, including innovative approaches to utilize available power supplies for optimal LED driving performance.

All theses are reviewed to ensure authenticity and scholarly value...Led Power Supply Applications

Welcome, and thank you for your visit.

We provide the document Led Power Supply Applications you have been searching for. It is available to download easily and free of charge...Led Power Supply Applications

This is among the most frequently sought-after documents on the internet.

You are lucky to have discovered the right source.

We give you access to the full and authentic version Led Power Supply Applications free of charge...Led Power Supply Applications

Uninterruptible Power Supplies and Active Filters

As industry power demands become increasingly sensitive, power quality distortion becomes a critical issue. The recent increase in nonlinear loads drawing non-sinusoidal currents has seen the introduction of various tools to manage the clean delivery of power. Power demands of medical facilities, data storage and information systems, emergency equipment, etc. require uninterrupted, high quality power. Uninterruptible power supplies (UPS) and active filters provide this delivery. The first to treat these power management tools together in a comprehensive discussion, Uninterruptible Power Supplies and Active Filters compares the similarities of UPS, active filters, and unified power quality conditioners. The book features a description of low-cost and reduced-parts configurations presented for the first time in any publication, along with a presentation of advanced digital controllers. These configurations are vital as industries seek to reduce the cost of power management in their operations. As this field of power management technology continues to grow, industry and academia will come to rely upon the comprehensive treatment found within this book. Industrial engineers in power quality, circuits and devices, and aerospace engineers as well as graduate students will find this a complete and insightful resource for studying and applying the tools of this rapidly developing field.

Design of a Non-isolated Single Phase Online UPS Topology with Parallel Battery Bank for Low Power Applications

This book presents a new topology of the non-isolated online uninterruptible power supply (UPS) system consisting of 3 components: bridgeless boost rectifier, battery charger/discharger, and an inverter. The online UPS system is considered to be the most preferable UPS due to its high level of power quality and proven reliability against all types of line disturbances and power outages. The new battery charger/discharger reduces the battery bank voltage, which improves performance and reliability, while a new control method for the inverter regulates the output voltage for both linear and nonlinear loads. The proposed USP system shows an efficiency of 94% during battery mode and 92% during the normal mode of operation.

Power Electronics and Its Applications

The third edition of the book on Industrial Electronics and Control including Programmable Logic Controller is aimed at providing an explicit explanation of the mode of operation of different electronic

power devices in circuits and systems that are in wide use today in modern industry for the control and conversion of electric power. The book strives to fulfil this need for a fundamental treatment that allows students to understand all aspects of circuit functions through its neatly-drawn illustrations and wave diagrams. Several colour diagrams are included to explain difficult circuits and waveforms. This approach will help students in assimilating the operation of power electronics circuits with more clarity. Same as in previous editions, the book commences with a discussion on rectifiers, differential amplifiers, operational amplifiers, multivibrators, timers and goes on to provide in-depth coverage of power devices and power electronics circuits such as silicon controlled rectifiers (SCRs), inverters, dual converters, choppers, cycloconverters and their applications in the control of ac/dc motors, and heating and welding processes. The book also presents an overview of the modern developments in the field of optoelectronics and fibre optics. Finally, the book ends with a discussion on Programmable Logic Controller (PLC). The book has an added advantage of multiple-choice questions, true/false statements, review questions and numerical problems at the end of each chapter, designed to reinforce the student's understanding of the concepts and mathematical derivations introduced in the text. The book is intended as a textbook for polytechnic students pursuing courses in electrical engineering, electronics and communication engineering, and electronics and instrumentation engineering. This tailor-made book with its exhaustive explanations of circuit operations and its student-friendly approach should prove to be a boon to the students and teachers alike. AUDIENCE: Polytechnic Students - pursuing courses in Electrical Engineering, Electronics and Communication Engineering, and Electronics and Instrumentation Engineering

Industrial Electronics and Control

Because society depends greatly on electric energy, power system control and protection focuses on ensuring a secure and reliable supply of power. To operate the electric systems in safe mode, the power system component should be equipped with intelligent controllers. The Handbook of Research on Smart Power System Operation and Control is a collection of innovative research on the theoretical and practical developments in smart power system operation and control that takes into account both smart grid and micro-grid systems. While highlighting topics including cybersecurity, smart grid, and wide area monitoring, this book is ideally designed for researchers, students, and industry professionals.

Handbook of Research on Smart Power System Operation and Control

The Application Of Power Electronics Is Increasingly Being Seen In Residential, Commercial, Industrial, Transportation, Aerospace, And Telecommunication Systems. An Electrical, Electronics Or Control Systems Engineer Needs To Understand The Basic Devices

Fundamentals of Power Electronics

I May observed that recent developments in power electronics have proceeded in two different directions, namely, low power range power supplies using high frequency PWM technique and medium to high power range energy control systems to serve specific Purpose.

Modern Power Electronics

This book will be very useful for the final year graduate & post graduate engineering student who are going to start their career in Design/engineering and useful for Experienced Electrical Engineering Professional, who are in the field of Design & Engineering in engineering consultancy firm & EPC Company or firm. It contains following Topics: 1. INTRODUCTION 62. NECESSITY OF UPS 2.1 WHY IS POWER PROTECTION IMPORTANT? 2.2 APPLICATIONS AND ROLE 3. BASIC KNOWLEDGE REGARDING UNINTERRUPTIBLE POWER SUPPLY (UPS) 3.1 BACKUP IN THE CASE OF POWER OUTAGES/ MOMENTARY VOLTAGE DROPS 3.2 POWER SOURCE MANAGEMENT 4. TYPE OF UPS SYSTEMS 4.1 ONLINE UPS 4.2 STANDBY UPS 4.3 PARALLEL PROCESSING UPS 4.4 HYBRID UPS 4.5 PARALLEL REDUNDANT OPERATION SYSTEM 5. INVERTER OF UPS 5.1 COORDINATION OF THE SUB-CIRCUIT RATED CURRENT WITH THE INVERTER RATED CURRENT 5.2 EARTH FAULT LEAKAGE DETECTION OF UPS 5.3 HOW DO I CHOOSE THE RIGHT UPS FOR THE JOB? 5.3.1 TOPOLOGY5.3.2 SINGLE PHASE VERSUS THREE PHASES5.3.3 RATING 5.3.4 FORM FACTOR 5.3.5 AVAILABILITY FEATURES 5.3.6 SOFTWARE AND COMMUNICATION5.3.7 BATTERIES FOR UPS APPLICATIONS 5.3.7.1 HISTORY 5.3.7.2 VALVE-REGULATED LEAD-ACID BATTERIES 5.3.7.3 UPS BATTERY FEATURES 5.3.7.4 PROBLEMS 5.3.7.4 CHARGING STRATEGIES 5.3.7.5 FAILURE CATEGORY 5.3.7.6 MONITORING 6. AC UPS SIZING CALCULATION 6.1 DESIGN INPUTS 6.2

ASSUMPTIONS / CONSIDERATIONS 6.3 METHODOLOGY 6.4 ACCEPTANCE CRITERIA 6.5 REF-ERENCE DOCUMENTS 6.6 EXAMPLE UPS OF BATTERY CALCULATION: 6.7 TYPICAL SINGLE LINE DIAGRAM OF SINGLE STATIC UPS UNIT7. DC UNINTERRUPTIBLE POWER SUPPLIES 7.1 BASIC STANDARDS 7.2 DESIGN BASIS & CONSTRUCTION FEATURES OF DC UPS: 7.3 DC UPS BATTERY CHARGERS 7.4 CHARGING RATES 7.5 FLOAT CHARGE 7.6 BOOST CHARGE 7.7 TRICKLE CHARGE 7.8 REDUNDANCY CONFIGURATIONS 8. BATTERY AND CHARGER SIZING 8.1 CODES AND STANDARDS 8.2 REFERENCE DOCUMENTS 8.3 DESIGN CONDITION 8.4 TYP-ICAL ARRANGEMENT OF DC UPS SYSTEM

Uninterrupted Power Supply System

AC Power Conditioners: Design and Applications provides some insight into the various types of power line disturbances, problems that occur daily, and their corresponding solutions. This book is organized into four parts encompassing 14 chapters; each part deals with a different form of power protection. Part I introduces the various types of power-line problems encountered that can be harmful to electronic equipment or the data it contains. Parts II and III are devoted to noise and surge reduction, as well as power line regulation. These parts describe the use of thyristor regulator, constant-voltage transformer, and linear and switching power-line regulators. Part IV focuses on blackout protection, with particular emphasis on the use of switching converter, thermal management, filters, and inverter control circuitry. This book is intended primarily to students and researchers.

Power Electronics: Devices and Circuits

Industrial electronics systems govern so many different functions that vary in complexity-from the operation of relatively simple applications, such as electric motors, to that of more complicated machines and systems, including robots and entire fabrication processes. The Industrial Electronics Handbook, Second Edition combines traditional and new

Model 1 Flight Service Automation System

The Industrial Electronics Handbook, Second Edition combines traditional and newer, more specialized knowledge that will help industrial electronics engineers develop practical solutions for the design and implementation of high-power applications. Embracing the broad technological scope of the field, this collection explores fundamental areas, including analog and digital circuits, electronics, electromagnetic machines, signal processing, and industrial control and communications systems. It also facilitates the use of intelligent systems—such as neural networks, fuzzy systems, and evolutionary methods—in terms of a hierarchical structure that makes factory control and supervision more efficient by addressing the needs of all production components. Enhancing its value, this fully updated collection presents research and global trends as published in the IEEE Transactions on Industrial Electronics Journal, one of the largest and most respected publications in the field. Power Electronics and Motor Drives facilitates a necessary shift from low-power electronics to the high-power varieties used to control electromechanical systems and other industrial applications. This volume of the handbook: Focuses on special high-power semiconductor devices Describes various electrical machines and motors, their principles of operation, and their limitations Covers power conversion and the high-efficiency devices that perform the necessary switchover between AC and DC Explores very specialized electronic circuits for the efficient control of electric motors Details other applications of power electronics, aside from electric motors—including lighting, renewable energy conversion, and automotive electronics Addresses power electronics used in very-high-power electrical systems to transmit energy Other volumes in the set: Fundamentals of Industrial Electronics Control and Mechatronics Industrial Communication Systems Intelligent Systems

AC Power Conditioners

In two editions spanning more than a decade, The Electrical Engineering Handbook stands as the definitive reference to the multidisciplinary field of electrical engineering. Our knowledge continues to grow, and so does the Handbook. For the third edition, it has expanded into a set of six books carefully focused on a specialized area or field of study. Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar represents a concise yet definitive collection of key concepts, models, and equations in these areas, thoughtfully gathered for convenient access. Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar delves into the fields of electronics, integrated circuits, power electronics, optoelectronics, electromagnetics, light waves, and

radar, supplying all of the basic information required for a deep understanding of each area. It also devotes a section to electrical effects and devices and explores the emerging fields of microlithography and power electronics. Articles include defining terms, references, and sources of further information. Encompassing the work of the world's foremost experts in their respective specialties, Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar features the latest developments, the broadest scope of coverage, and new material in emerging areas.

Line-current-harmonics-neutralized Uninterruptible Power Supplies

This textbook, designed for undergraduate students of electrical engineering, offers a comprehensive and accessible introduction to state-of-the-art power semiconductor devices and power electronic converters with an emphasis on design, analysis and realization of numerous types of systems. Each topic is discussed in sufficient depth to expose the fundamental principles, concepts, techniques, methods and circuits, necessary to thoroughly understand power electronic systems.

The Industrial Electronics Handbook - Five Volume Set

"Discusses the essential concepts of power electronics through MATLAB examples and simulations"--

Power Electronics and Motor Drives

Sooner or later, power system protection is going to cost money. How much is entirely up to you. Setting up a safe and effective AC power system from the very beginning can help avoid costly downtime and repairs, provide backup power during system outages, and minimize workplace accidents. For the past 15 years, Jerry Whitaker's AC Power Systems Handbook has supplied industry professionals with a comprehensive, practical guide to the key elements of AC power for commercial and industrial systems. This third edition is thoroughly revised and completely reorganized to reflect the changing demands of modern power systems. To ease navigation, many sections are now presented as separate chapters filled with updated and expanded information. Most notably, the author adds heavily in the areas of transient suppression hardware, electrical system components, and power system fundamentals. Following a logical progression, coverage flows from power system operation to protecting equipment loads, selecting the right level of protection, grounding, standby power, and safety. Along the way, the author paints a clear picture of the sources of disturbances, the tradeoffs involved for different options, and the advantages and limitations of various approaches. Streamlined to be a hands-on, user-oriented guide, the AC Power Systems Handbook offers expert guidance on designing and installing a safe and efficient power system.

Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar

* Useful to engineers in any industry * Extensive references provided throughout * Comprehensive range of topics covered * Written with practical situations in mind A plant engineer is responsible for a wide range of industrial activities, and may work in any industry. The breadth of knowledge required by such professionals is so wide that previous books addressing plant engineering have either been limited to certain subjects or cursory in their treatment of topics. The Plant Engineer's Reference Book is the first volume to offer complete coverage of subjects of interest to the plant engineer. This reference work provides a primary source of information for the plant engineer. Subjects include selection of a suitable site for a factory and provision of basic facilities (including boilers, electrical systems, water, HVAC systems, pumping systems and floors and finishes). Detailed chapters deal with basic issues such as lubrication, corrosion, energy conservation, maintenance and materials handling as well as environmental considerations, insurance matters and financial concerns. The authors chosen to contribute to the book are experts in their various fields. The Editor has experience of a wide range of operations in the UK, other European countries, the USA, and elsewhere in the world. Produced with the backing of the Institution of Plant Engineers, this work is the primary source of information for plant engineers in any industry worldwide.

Electronics Projects Vol. 19

In two editions spanning more than a decade, The Electrical Engineering Handbook stands as the definitive reference to the multidisciplinary field of electrical engineering. Our knowledge continues to grow, and so does the Handbook. For the third edition, it has grown into a set of six books carefully focused on specialized areas or fields of study. Each one represents a concise yet definitive collection

of key concepts, models, and equations in its respective domain, thoughtfully gathered for convenient access. Combined, they constitute the most comprehensive, authoritative resource available. Circuits, Signals, and Speech and Image Processing presents all of the basic information related to electric circuits and components, analysis of circuits, the use of the Laplace transform, as well as signal, speech, and image processing using filters and algorithms. It also examines emerging areas such as text to speech synthesis, real-time processing, and embedded signal processing. Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar delves into the fields of electronics, integrated circuits, power electronics, optoelectronics, electromagnetics, light waves, and radar, supplying all of the basic information required for a deep understanding of each area. It also devotes a section to electrical effects and devices and explores the emerging fields of microlithography and power electronics. Sensors, Nanoscience, Biomedical Engineering, and Instruments provides thorough coverage of sensors, materials and nanoscience, instruments and measurements, and biomedical systems and devices, including all of the basic information required to thoroughly understand each area. It explores the emerging fields of sensors, nanotechnologies, and biological effects. Broadcasting and Optical Communication Technology explores communications, information theory, and devices, covering all of the basic information needed for a thorough understanding of these areas. It also examines the emerging areas of adaptive estimation and optical communication. Computers, Software Engineering, and Digital Devices examines digital and logical devices, displays, testing, software, and computers, presenting the fundamental concepts needed to ensure a thorough understanding of each field. It treats the emerging fields of programmable logic, hardware description languages, and parallel computing in detail. Systems, Controls, Embedded Systems, Energy, and Machines explores in detail the fields of energy devices, machines, and systems as well as control systems. It provides all of the fundamental concepts needed for thorough, in-depth understanding of each area and devotes special attention to the emerging area of embedded systems. Encompassing the work of the world's foremost experts in their respective specialties, The Electrical Engineering Handbook, Third Edition remains the most convenient, reliable source of information available. This edition features the latest developments, the broadest scope of coverage, and new material on nanotechnologies, fuel cells, embedded systems, and biometrics. The engineering community has relied on the Handbook for more than twelve years, and it will continue to be a platform to launch the next wave of advancements. The Handbook's latest incarnation features a protective slipcase, which helps you stay organized without overwhelming your bookshelf. It is an attractive addition to any collection, and will help keep each volume of the Handbook as fresh as your latest research.

1998 20th International Telecommunications Energy Conference (INTELEC)

This book provides an in-depth introduction to all major control and stability issues related to microgrids. It is the first book to offer a comprehensive look into the methodologies and philosophies behind system modeling, coordinated control, and protection for developing reliable, robust, and efficient operation of modular uninterruptible power supply systems. For each topic, a theoretical introduction and overview are backed by concrete programming examples that enable the reader to thoroughly understand the topic and develop and conduct simulation models.

POWER ELECTRONICS

Power Electronics Handbook, Fifth Edition delivers an expert guide to power electronics and their applications. The book examines the foundations of power electronics, power semiconductor devices, and power converters, before reviewing a constellation of modern applications. Comprehensively updated throughout, this new edition features new sections addressing current practices for renewable energy storage, transmission, integration, and operation, as well as smart-grid security, intelligent energy, artificial intelligence, and machine learning applications applied to power electronics, and autonomous and electric vehicles. This handbook is aimed at practitioners and researchers undertaking projects requiring specialist design, analysis, installation, commissioning, and maintenance services. Provides a fully comprehensive work addressing each aspect of power electronics in painstaking depth Delivers a methodical technical presentation in over 1500 pages Includes 50+ contributions prepared by leading experts Offers practical support and guidance with detailed examples and applications for lab and field experimentation Includes new technical sections on smart-grid security and intelligent energy, artificial intelligence, and machine learning applications applied to power electronics and autonomous and electric vehicles Features new chapter level templates and a narrative progression to facilitate understanding

Power Electronics with MATLAB

* An engineering tutorial designed to teach basic UPS (Uninterruptible Power Supplies) design and operation--covers rotary UPS systems and battery selection

AC Power Systems Handbook

Reference Data for Engineers is the most respected, reliable, and indispensable reference tool for technical professionals around the globe. Written by professionals for professionals, this book is a complete reference for engineers, covering a broad range of topics. It is the combined effort of 96 engineers, scientists, educators, and other recognized specialists in the fields of electronics, radio, computer, and communications technology. By providing an abundance of information on essential, need-to-know topics without heavy emphasis on complicated mathematics, Reference Data for Engineers is an absolute "must-have" for every engineer who requires comprehensive electrical, electronics, and communications data at his or her fingertips. Featured in the Ninth Edition is updated coverage on intellectual property and patents, probability and design, antennas, power electronics, rectifiers, power supplies, and properties of materials. Useful information on units, constants and conversion factors, active filter design, antennas, integrated circuits, surface acoustic wave design, and digital signal processing is also included. The Ninth Edition also offers new knowledge in the fields of satellite technology, space communication, microwave science, telecommunication, global positioning systems, frequency data, and radar. * Widely acclaimed as the most practical reference ever published for a wide range of electronics and computer professionals, from technicians through post-graduate engineers. * Provides a great way to learn or review the basics of various technologies, with a minimum of tables, equations, and other heavy math.

Plant Engineer's Reference Book

The days of troubleshooting a piece of gear armed only with a scope, voltmeter, and a general idea of how the hardware works are gone forever. As technology continues to drive equipment design forward, maintenance difficulties will continue to increase, and those responsible for maintaining this equipment will continue to struggle to keep up. The Electronic Systems Maintenance Handbook, Second Edition establishes a foundation for servicing, operating, and optimizing audio, video, computer, and RF systems. Beginning with an overview of reliability principles and properties, a team of top experts describes the steps essential to ensuring high reliability and minimum downtime. They examine heat management issues, grounding systems, and all aspects of system test and measurement. They even explore disaster planning and provide guidelines for keeping a facility running under extreme circumstances. Today more than ever, the reliability of a system can have a direct and immediate impact on the profitability of an operation. Advocating a carefully planned, systematic maintenance program, the richly illustrated Electronic Systems Maintenance Handbook helps engineers and technicians meet the challenges inherent in modern electronic equipment and ensure top quality performance from each piece of hardware.

The Electrical Engineering Handbook - Six Volume Set

ISES Solar World Congress is the most important conference in the solar energy field around the world. The subject of ISES SWC 2007 is Solar Energy and Human Settlement, it is the first time that it is held in China. This proceedings consist of 600 papers and 30 invited papers, whose authors are top scientists and experts in the world. ISES SWC 2007 covers all aspects of renewable energy, including PV, collector, solar thermal electricity, wind, and biomass energy.

Advanced Control and Protection of Modular Uninterruptible Power Supply Systems

This reference acquaints professionals with trends and challenges in the development of more electric vehicles (MEVs) using detailed examples and comprehensive discussions on advanced MEV power system architectures, characteristics, and dynamics. The book focuses on real-world applications and highlights issues related to system stability, as well as challenges faced during and after implementation. Heralding a new wave of advances in power system technology, Vehicular Electric Power Systems probes innovations in the development of more electric vehicles for improved maintenance, support, endurance, safety, and cost-efficiency in automotive, aerospace, and marine vehicle engineering.

Power Electronics Handbook

Power Electronics Design Handbook covers the basics of power electronics theory and components while emphasizing modern low-power components and applications. Coverage includes power semiconductors, converters, power supplies, batteries, protection systems, and power ICs. One of the unique features of the Power Electronics Design Handbook is the integration of component and system theory with practical applications, particularly energy-saving low-power applications. Many chapters also include a section that looks forward to future developments in that area. References for further information or more in-depth technical reading are also included. Nihal Kularatna is a principal research engineer with the Arthur C. Clarke Foundation in Sri Lanka. He is also the author of Modern Electronic Test and Measuring Instruments, published by the Institute of Electrical Engineers. Emphasizes lowand medium-power components Offers a unique mix of theory and practical application Provides a useful guide to further reading

Uninterruptible Power Supplies

This text presents practical rules and strategies for circuits designed to protect electronic systems from damage by transient overvoltages. The treatment covers symptoms and threats, fundamental remedies, types of protective devices, applications of protective devices, validation of protective measures, and much more. 1989 edition.

Gas Turbine System Technician (electrical) 3 & 2

This work proposes advanced emulation of the physical layer behavior of NB-PLC channels and the application of a channel emulator for the evaluation of NB-PLC systems. In addition, test procedures and reference channels are proposed to improve efficiency and accuracy in the system evaluation and classification. This work shows that the channel emulator-based solution opens new ways toward flexible, reliable and technology-independent performance assessment of PLC modems.

Reference Data for Engineers

Plant engineers are responsible for a wide range of industrial activities, and may work in any industry. This means that breadth of knowledge required by such professionals is so wide that previous books addressing plant engineering have either been limited to only certain subjects or cursory in their treatment of topics. The Plant Engineering Handbook offers comprehensive coverage of an enormous range of subjects which are of vital interest to the plant engineer and anyone connected with industrial operations or maintenance. This handbook is packed with indispensable information, from defining just what a Plant Engineer actually does, through selection of a suitable site for a factory and provision of basic facilities (including boilers, electrical systems, water, HVAC systems, pumping systems and floors and finishes) to issues such as lubrication, corrosion, energy conservation, maintenance and materials handling as well as environmental considerations, insurance matters and financial concerns. One of the major features of this volume is its comprehensive treatment of the maintenance management function: in addition to chapters which outline the operation of the various plant equipment there is specialist advice on how to get the most out of that equipment and its operators. This will enable the reader to reap the rewards of more efficient operations, more effective employee contributions and in turn more profitable performance from the plant and the business to which it contributes. The Editor, Keith Mobley and the team of expert contributors, have practiced at the highest levels in leading corporations across the USA, Europe and the rest of the world. Produced in association with Plant Engineering magazine, this book will be a source of information for plant engineers in any industry worldwide. * A Flagship reference work for the Plant Engineering series * Provides comprehensive coverage on an enormous range of subjects vital to plant and industrial engineer * Includes an international perspective including dual units and regulations

Electronic Systems Maintenance Handbook

2023-24 RRB/UPSSSC Electrician Trade Solved Papers

Proceedings of ISES World Congress 2007 (Vol.1-Vol.5)

This 1958 book was primarily written to provide information on torsional vibration for the design and development departments of engineering companies, although it was also intended to serve students of the subject. It will be of value to anyone with an interest in torsional vibration and the development of engineering practice.



https://clients.rawnet.com | Page 8 of 8