

# 媒体处理芯片设计重心向国内倾斜 Media Processing Chip Designs, Center of Weight is Slanted to China Domestic

本刊记者 李健 EEPW Reporter Li Jian

伴随着生活水平的提高,感官享受逐渐成为社会消费的发展趋势,多层次全方位的视听享受逐渐成为消费新宠,激增的市场需求和快速的更新换代给了媒体处理芯片产业前所未有的机遇。在消费产品的 IC 设计中,越贴近市场、越了解终端用户需求的设计才更容易为市场接收,以靠近市场的观念指导 IC 设计是成功的关键所在。As raises of Chinese's living standard, sensational joy gradually becomes trend of consumer's interests. Multiple level and all dimensional audio and video experiences are being embraced, explosive market demands pushes rapid transformation of media chips to enable a new generation of consumer products. IC designs oriented to consumer electronic products: the more close-to-market, the more understanding to end-users, the easier to be accepted by the market. The key what is needed for success is close-to-market IC design.

以珠海炬力、中星微为龙头,福建瑞芯、上海智多微电子、海信信芯、海思半导体等企业为代表的一大批媒体处理芯片设计企业的迅速崛起,背后依托的正是这样一方沃土,中国近乎海量的媒体产品需求市场让 Design in China 的媒体处理芯片逐渐占据着世界市场的主流。Lead by Action electronics and Vimicro, a group of media processing IC design companies are erecting, such as RockChips, etc. Embedded in rich soil of the China market, China's massive demands of media products, would make Design in China becomes a world's trend.

面对这样的诱惑,动心的不仅仅是国内的企业,有这样一家特殊的芯片公司也在悄悄地在中国演绎着他们的创业故事。Seduced by this trend, not only China companies are tempted, here is a special IC company who is quietly plot its startup story in the China stage.



走进芯慧同用微电子技术公司(VIVACE),扑面而来的感觉是一家典型的国内芯片设计公司,然而研读公司历史又会否定最初的判断。2005年8月北京芯慧同用和美国VIVACE半导体合并,多名拥有丰富经验的国际IC设计人员共同创立了这家新公司。不过,它仍上是一家中国公司,因为公司虽分居中美两地,但公司管理层、75%以上的雇员和资产以及研发中心都位于中国。在中国日常运营的高管层中有杰出的人才:如国内IC行业知名的带头人倪伟新为业务副总裁,归国留学生罗晋为业务开拓副总经理,从中国IC工业起步开始就在行业核心工作的资深技术管理人员中包括项目总监韩保广和高级市场和产品顾问刘东华等。加上总裁Cary Ussery今日已迁入北京,在公司所在的北京集成电路设计园邻里就近居

住。近日，记者在北京采访了该公司 CEO Cary Usseery 和工程副总经理罗晋，请他们共同揭开这家独特企业的神秘面纱。Walking into Schinhui (Vivace's Chinese 4-character company identity in brief) overwhelmingly it an impression of a typical China domestic IC company, while reseach about the company's evolution it would deny such initial impression. General Circuits was merged with Vivace Semiconductor August 2006, a team of experienced international IC design talents collaboratively created this new company. Still it is a Chinese company: the corporate resides between China and USA, its integrated management, its 75% of employees and capital commitments, and its R&D centers are all allocated in China. Daily China operation's management includes Sir VP of Operation, Ni Weixin, represents China IC Industry's executive level leaders, VP of Engineering, Jin Luo who was US graduated and experienced China native, Program Director, Han Baoguang and senior marketing advisor, Liu Donghua, who have experiences in core of IC design businesss since domestic IC Industry started. In addition, CEO/President, Cary Ussery, moved in becoming a Beijing residence today, leaving right next to Beijing IC Design Park where the company location is. Recently the reporter interviewed Cary and VP Jin Luo, let them disclose Vivace's behind-scene stories.

作为以美、中风险投资支持的创业企业，芯慧同用在商务模式上有个突出的商务特点：在产品研发阶段的初期就已经积蓄了跨国公司的势头：提供国际水平的先进技术、满足国内市场的动态需要，垂直建设一体化管理的团队。公司在创投商务开发上大胆、领先，在起始期就成功地显示了它的技术和产品潜力和市场强势。以此芯慧同用很快就在国内与华旗、闪联等国内消费类龙头企业达成战略合作协议。进入市场产品已经直接确立了定义明晰的、应用优化、推动跨代媒体播放新产品的使能 (enabling) 技术目标。As a US-China venture capital invested startup company, Schinhui displayed a outstanding business characters: it has already accumulated an international company's high potential even during development stage of its first chip product. Schinhui provides international-class advanced technology, dynamically fulfills demands of local market's, vertically integrated corporate management. The company's startup business development was done with courage and leadership, at first day made clear with its technology and products. With all of these Schinhui has made strategic partnership with Huaqi, IGRS, etc. the China's domestic leader companies. Entry-market products have already clearly specified and optimized to enable partnered new media player products.

芯慧同用专注于多媒体处理器，定位于便携与高性能两个市场热点领域。先进的技术是许多年轻公司壮大的根本，芯慧同用最大的竞争优势在于建立了基于 SoC 的新媒体处理芯片体系结构，公司核心技术层历时 5 年时间研究出 DSP 媒体处理新特征，该方案让芯片 BOM 成本减少 3/8，功耗大幅减小并且并行处理能力和设计灵活性得到很大改善。例如芯慧同用的芯片架构采用通用 RISC CPU 加 4 个 DSP 处理器，通过流水线并行处理、超长指令和硬件加速器组合实现低时钟频率下的高性能多媒体处理。新架构是为了适应多媒体处理产品发展的需求，满足低功耗、低成本、高速处理 (VGA) 并且时钟速率和成本都可以降得很低。新的架构往往意味着突破了传统设计理念，由于芯片实时处理能力强，摆脱了因芯片处理能力不够而需要大量集成缓存的困难，特别是在处理高清视频时，利用特有的 DMA 专利技术支持 64 位 DDR 存储，从而解决了需要 10 个临时存储帧的问题。当然，对于新架构还有更多需要进一步完善的方面以适应市场发展的需求，比如在便携设备中的音视频解码过程中的数字版权处理问题，再如多核处理之间的实时同步 (特别是 DSP 与 CPU 之间) 问题，需要采用了独立分工处理器进行处理，协调时间同步。Schinhui concentrates on multimedia processor developments, positioned its products to the two hot spot of consumer market: portable and high-performance. Advanced technology is the based for young startups' growth. Schinhui's

heist competitive advantage is in its new media processor architecture. The company's core technology has accumulated 5+ years in DSP Research, the reward is to make the chip's system product reducing cost to its 3/8, reduce its power consumption with improved parallel processing capability and flexibility in applications. For example, Scinhui's SoC architecture has included RISC CPU plus 4 dedicated media DSP processors, through pipelined parallel computation, VLIW and hardware acceleration, it enabled a high-performance media data processing at relatively lower clock rate. Such new architecture well adapts to media IC's product requirement, made low power consumption, low costs, VGA <should be D1 here> high-speed processing, and low clock rate, power consumption was lowers significantly. The new architecture also broke conventional design concepts, especially toward high-resolution video processing, its DMA technology supports 64-bit DDR storage, and well fulfilled demands of 10 buffered frames (for motion compensation process). Plus the new architect requires further improve according dynamics of the market development, which the new architecture well addressed applications such as DRM, task break and coordination between DSP Subsystem and Host CPU, as well among DSP cores.

据罗晋介绍，目前芯慧同用面向高端便携应用的芯片可实时根据不同标准进行直接解压，从而支持最新的不同标准，新产品可以直接播放 MPEG2,MPEG4,H.264, WMV9, RealVideo10 和 AVS 格式的节目。对于低端手持终端甚至不需 PC 软件转码(transcoder),直接处理高达 D1 画质的直接解码，同时支持低成本多功能的外设控制能力。芯慧同用的首款系列品种之一，已经计划进入闪联标准（IGRS）以数字电视为前端的家庭多媒体系统，成为闪联 DTV 系统方案中支持协议标准的核心多媒体处理芯片。在针对高清数字电视的多媒体解码上，2008 年新产品直接实现了 1080p 的高清编解码和支持新光盘技术的运算能力，面向网络的集成功能使完整 IPTV 成为可能。Introduced by Jin Luo, the current high-performance portable player chips can perform direct decompress of real-time video contents in multiple standards, including MPEG2,MPEG4,H.264, WMV9, RealVideo10 and AVS. Even for low-end hand-hold player applications, the chip is capable to directly process contents in D1/30fps, free of Transcoding. Host-CPU serves multiple IO functions. Vivace's first series chip has already targeted to IGRS' DTV-front home multimedia system, becoming supporting new IGRS standard's central process/control chip. Targeted to HDTV, 200 new product will support 1080p resolution and yield more computation powers to support new high-density CD applications. IP-TV is becoming practical using Vivace chips.

作为公司整个团队的领导者，CEO Cary Usseery 不仅拥有传奇的经历与丰富的 IC 设计经验，更对中美 IC 设计企业文化有切身的体会。Cary 认为中国的良好投资环境和广阔的市场前景非常适合芯片设计公司的发展壮大。但他承认运作新公司是个适应很多新问题的过程，有效地协调文化和工程管理的差异是必须也是挑战，需要在管理上融入更多技巧。As the corporate leader, CEO Cary Urssery is not only owns a legendary experience and reach IC design skills, but also experiences a corporate culture mixture between China-US IC design teams. Cary believe that China has the best investment environment and wide market horizon; it is the most suitable one to an IC company's growth. In the meantime he admit that as a new company there sill be a process to adapt to new problems to be encountered. It is going to be challenge to effectively merge two very different cultures and management styles.

书法家黄苗子的手书给芯慧同用带来了艺术的气息，精通音乐的 Cary Usseery 带领的团队正把芯慧同用带向 IC 设计更高的艺术殿堂。管理是门艺术，但谁说 IC 设计不可以也变得艺术，正如 Cary 所说：“音乐和电子设计一样都是系统分析，从复杂的系统中抽查出问题，

培养多方面能力是两者的共同点，音乐和工作的结合给了我很大的帮助。”不是么？数字音乐合成芯片恰恰是 Cary 开发的第一个产品，而今他正带领他的团队带给世人更美好的视听新感受。Calligrapher Hua Miaozi's writing of 芯慧同用 brought the company with a rather artistic touch. While musician Cary Ussery is bringing Schinhui into a higher class of esthetics of IC design. Management is art, but who said IC design cannot be artful? As Cary said: Music and electronic designs are common as methodological system analysis. From complex problem to extract disciplines toward solving problems, music and engineering bring me combined knowledge to my work. Doesn't it? A digital music synthesizer chip just happened to be Cary's first product project, while today he is leading his team to bring more beautiful audio and video experiences to the people.

先进的核心技术、更贴近市场的策略和集合中美两国设计者的共同智慧和运作经验，芯慧同用的目标是立足中国这个媒体产品市场的前沿，在技术和设计差异化还不太突出的国内媒体处理芯片领域脱颖而出，挑战国际巨头的市场地位，这是酝酿在 Cary Ussery 和他的团队心中一个美丽的未来。Advance core technology, closer to market strategy, plus integration of designer's intelligence and experiences in design and operation, Schinhui's target is certainly at the very front-edge of the China media product market. Schinhui outstands among many domestic media product providers who do not possess differentiation in technologies and designs. What it challenges is international leading market shares, it incubates a bright future of Cary Ussery and his team.