

Research Projects in 2007

Competitive Earmarked Research Grant

<u>Type</u>	<u>Number</u>	<u>P. Investigator</u>	<u>Project Title</u>	<u>Start</u>	<u>End</u>	<u>Amount</u>
CERG	9041117	CHAN Chi-hou	A Full-wave Kernel Independent Solver for Radio Frequency Integrated Circuits	Aug-06	Jul-08	\$756,800
CERG	9040991	CHAN Chi-hou	Investigation of a Novel Reconfigurable Transistor Pair and Its Applications in Microwave Active Circuits	Aug-05	Jul-07	\$508,443
CERG	9040936	CHAN Chi-hou	A Kernel Independent Solver for Parasitic Extraction of Electrically Small but Complex Structures	Aug-04	Jul-07	\$598,863
CERG	9040827	CHAN Wing-shing	Integrated Distributed Linearized Front-End PA/LAN/Switch for Software Defined Radios	Dec-03	Oct-07	\$590,115
CERG	9041222	CHAN Yan-cheong, Archie	Development of a Nano-activator Doped Surface Modifier for Sn-Zn Based Lead-free Soldering	Jul-07	Jun-10	\$1,003,200
CERG	9041129	JIA Weijia	QoS-Aware Efficient Connection and Scheduling Algorithms for PMP and Mesh Modes in IEEE 802.16 MAC Layer	Jan-07	Dec-08	\$396,000
CERG	9041241	LEUNG Kwok-wa	Novel Dualfunction of the Dielectric Resonator Antenna for Compact Wireless Systems	Jul-07	Jun-09	\$518,074
CERG	9041137	LEUNG Kwok-wa	DRA-slot Hybrid Antennas for Dualband and Wideband Applications	Jul-06	Dec-08	\$479,600
CERG	9040924	LEUNG Kwok-wa	Zonal and Rectangular Slot Antennas on Probe-fed Metallic Cavities	Jan-05	Dec-07	\$635,977
CERG	9040833	LEUNG Kwok-wa	Frequency Tuning of the Dielectric Resonator Antenna	Dec-03	Feb-07	\$504,495
CERG	9040728	LEUNG Kwok-wa	Efficient and Accurate Method for Analysis of Annular Apertures and Its Application to the Dielectric Resonator Antenna	Dec-02	May-07	\$583,404
CERG	9041242	LEUNG Sai-wing, Peter	Specific Absorption Rates and Electromagnetic Field Radiation by Mobile Phones in Metallic Enclosures	Aug-07	Jul-09	\$230,080
CERG	9041245	LI Ping	Towards Downlink Multi-user Gain	Jan-08	Dec-09	\$984,720
CERG	9041142	LI Ping	The IDMA-OFDM Approach to Wireless Communications	Jan-07	Dec-08	\$396,000
CERG	9041017	LI Ping	A High-rate Coded Modulation Scheme Based on Super Imposed Binary Codes	Jan-06	Dec-08	\$608,836
CERG	9040925	LI Ping	Turbo Equalization of Multiple-input-multiple-output (MIMO) Channels	Dec-04	May-08	\$1,224,719
CERG	9041148	LUK Kwai-man	A Novel Bowtie Shorted-patch Antenna	Aug-06	Jul-08	\$534,600
CERG	9040927	LUK Kwai-man	Design of a Novel Vertical Patch Antenna	Nov-04	Oct-07	\$942,856
CERG	9040834	LUK Kwai-man	Wideband Circularly Polarized Patch Antennas	Jul-03	Jan-07	\$504,495
CERG	9040721	LUK Kwai-man	Dielectric-resonator Loaded Patch Antennas	Sep-02	May-07	\$842,285
CERG	9041267	XUE Quan	Novel Differential Fed Patch Antennas	Sep-07	Aug-09	\$407,906
CERG	9041038	XUE Quan	Investigation of Integrated Wireless Front-Ends based on Novel Multilayered Technologies	Sep-05	Feb-08	\$484,964
CERG	9040934	YUNG Kai-ning, Edward	An Innovative Antenna for a Handheld Transceiver for the Satellite Navigation System of China	Jan-05	Oct-07	\$505,968
CERG	9040717	YUNG Kai-ning, Edward	A Trifilar Helical Antenna on a Hemispherical Shell of Dielectric Resonator with an Elliptical Base for Handsets in the Third Generation Mobile Communication	Dec-02	Jun-07	\$413,404
CERG	9041166	ZHANG Qitu, Keith	Wireless System Design in the Framework of Channel Capacity	Sep-06	Aug-09	\$587,400
CERG	9040727	ZHANG Qitu, Keith	Reception Strategies for High Data-rate Transmission in 3G/4G Cellular Systems	Nov-02	Jan-07	\$413,476

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						\$15,656,680
<i>Other External Research Grant</i>						
NSFC	9050171	CHAN Yan-cheong, Archie	Investigation of Electromigration in Lead-free Flip Chip Bump Interconnect	Apr-04	Jan-08	\$956,100
Industry	9220033	CHENG Lee-ming	Computer Engineering Research and Training	Sep-05	Aug-10	\$396,969
Contract	9230064	LI Ping	Wireless Hybrid Enhanced Mobile Radio Estimators	Jan-08	Jun-10	\$679,919
NSFC	9050162	LI Ping	Concatenated Space - Time Codes for Mobile Communication Systems	May-02	Apr-07	\$486,600
Industry	9220032	LUK Kwai-man	Centre for RFIC Design	May-05	Apr-10	\$1,350,000
Industry	9050109	YUNG Kai-ning, Edward	Design of Value-added Services for 2.5 G and 3 G Mobile Phone Networks	Sep-98	May-09	\$23,526,635
Ger/HKJRS	9050209	ZHANG Qitu, Keith	Transceiver Optimization for Multiple-antenna Systems in Correlated Rician and Nakagami Fading with Generic Average Channel Feedback	Jan-08	Dec-09	\$21,800
						\$27,418,023
<i>Innovative Technology Fund</i>						
ITF	9440057	CHAN Yan-cheong, Archie	Study on the Reliability of the Selective Molecular Assembly Patterning at Nanoscaled Indium Tin Oxide Design Layout	Apr-07	Mar-09	\$370,000
ITF	9440044	CHENG Lee-ming	Design and Fabrication of Digital Image and Video Watermarking Chip for Copyright and Forgery Protection	Jul-06	Jun-08	\$3,314,420
ITF	9440048	JIA Weijia	AnyServer: Digital Network Platform Technology and Equipment for Ubiquitous Communications	Jun-06	May-08	\$9,613,400
ITF	9440056	TSANG Kim-fung	Development of WiMAX Solution for Consumer Electronics	Mar-07	Aug-08	\$4,744,343
ITF	9440040	YUNG Kai-ning, Edward	Development of RFID Reader	Mar-05	Apr-08	\$6,020,000
						\$24,062,163
						Ext
						\$67,136,866
<i>Strategic Research Grant</i>						
SRG	7001586	CHAN Chi-hou	A Novel Power Amplifier Linearization Technique for the Next Generation Mobile Communications Systems	Jul-04	Feb-07	\$178,300
SRG	7002242	CHAN Wing-shing	Broadband Radio Frequency Active Circulator	Oct-07	Sep-08	\$180,000
SRG	7001845	CHAN Wing-shing	Dual Feed, Antenna Combined, High Efficiency, Distributed, Linearized Class B Amplifier	Sep-05	Jun-07	\$157,380
SRG	7001780	CHAN Wing-shing	Active Integrated Power-Amplifier/Low-Noise-Amplifier/Switch/Antenna	Jul-05	Jan-07	\$159,380
SRG	7002083	CHAN Yan-cheong, Archie	Development of Nano-particles Doped Pb-Free Composite Solder for Ultra-fine Pitch Interconnection Application	Apr-07	Mar-09	\$180,000
SRG	7001976	CHAN Yan-cheong, Archie	Study on the Recycling of Used Electronic Products	Apr-06	Mar-08	\$180,000
SRG	7002018	CHENG Lee-ming	Design of Digital Watermarking Chip	Oct-06	Sep-08	\$167,080
SRG	7001968	CHENG Lee-ming	Design of Effective Memory Reallocation Algorithms for Java Card	Apr-06	Oct-07	\$180,000
SRG	7001781	CHENG Lee-ming	Study on Bit-reversal Binary Sequences	Jul-05	Jan-08	\$247,800
SRG	7002214	JIA Weijia	Efficient Handoff Algorithms for WiMAX Networks	Oct-07	Sep-09	\$180,000
SRG	7002102	JIA Weijia	Dynamic Rectangle Routing for Multicast/Anycast Group Communications	Apr-07	Mar-09	\$180,000

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SRG	7002085	LEUNG Kwok-wa	Investigation of the Differentially-Fed Dielectric Resonator Antenna	Apr-07	Sep-08	\$180,000
SRG	7001849	LEUNG Kwok-wa	The Hollow DRA and its Novel Application as a Packaging Cover	Sep-05	Aug-07	\$180,000
SRG	7001779	LEUNG Kwok-wa	Characteristics of Circularly Polarized Dielectric Resonator Antennas of Different Elliptic Structures	Jul-05	Feb-07	\$180,000
SRG	7002019	LEUNG Sai-wing, Peter	Investigation of Fractional Phantom Head Models for SAR Evaluation	Oct-06	Sep-08	\$178,000
SRG	7001934	LEUNG Sai-wing, Peter	Specific Absorption Rates and Electromagnetic Field Radiation by Mobile Phones in Metallic Enclosures	Apr-06	Dec-07	\$180,159
SRG	7001851	LEUNG Shu-hung	Robust Receiver for MIMO-OFDM	Sep-05	Feb-08	\$318,000
SRG	7001607	LEUNG Shu-hung	Feature Extraction Based on Perceptual Non-uniform Spectral Compression for Noisy Speech Recognition	Jul-04	Jul-07	\$180,000
SRG	7002099	LI Ping	Distributed Space-time Codes and Cooperative Diversity in Wireless Networks	Apr-07	Jul-08	\$179,938
SRG	7001984	LI Ping	The Application of Low-rate LDPC Codes in UWB Systems	Apr-06	Jan-08	\$179,938
SRG	7001812	LI Ping	Hybrid Beamforming and Space-time Coding Techniques	Jul-05	Jun-07	\$181,195
SRG	7001852	LUK Kwai-man	A Novel Pattern-reconfigurable Wideband Microstrip Patch Antenna	Sep-05	Nov-07	\$180,000
SRG	7002091	MAN Kim-fung	Verification of a Jumping-Genes Evolutionary Paradigm on the Basis on Schema Theorem	Apr-07	Mar-09	\$180,000
SRG	7002025	MAN Kim-fung	A Pareto-optimal Jumping Genes Paradigm for Wideband Antenna Designs	Oct-06	Sep-08	\$178,000
SRG	7002007	TSANG Kim-fung	A Microwave High Efficiency GaAs Hetero Bipolar Transistor Amplifier	Oct-06	Sep-08	\$179,910
SRG	7001854	TSANG Kim-fung	The Design of Microwave Synthesizer Incorporating near Field Coupling Consideration	Sep-05	Dec-07	\$179,930
SRG	7001782	TSANG Kim-fung	The Thermal Analysis And Measurement of A GaAs Hetero Bipolar Junction Transistor	Jul-05	Dec-07	\$179,760
SRG	7002026	XUE Quan	The Investigation of Low-Cost Phased Array Antennas Using A Novel Phase Shifting Technique	Oct-06	Sep-08	\$180,000
Start Up	7200019	XUE Quan	Research on Microwave Circuits Using Non-microstrip Transmission Lines	Jun-04	Jul-07	\$100,000
SRG	7002074	ZHANG Qitu, Keith	Beamformer Structures for General MISO/MIMO Channels with Imperfect Feedback	Apr-07	Mar-09	\$180,000
SRG	7001856	ZHANG Qitu, Keith	Transmit-Receive Diversity with Channel-Estimation Error and Co-Channel Interference	Sep-05	Feb-07	\$180,000
SRG	7001772	ZHANG Qitu, Keith	Efficient Constellation Design for Differential Space-Time Modulation	Jul-05	Jan-08	\$180,000
SRG	7001613	ZHANG Qitu, Keith	Efficient Modelling and Detection of Correlated Non-Stationary UWB Signals in Indoor Environments	Jul-04	Jul-07	\$172,000

\$5,996,770

Applied Research Grant

ASDC	9600003	CHAN Yan-cheong, Archie	Centre for Electronic Packaging and Assemblies, Failure Analysis and Reliability Engineering (EPA)	Mar-00	Jun-08	\$5,017,162
ARD	9668006	CHENG Lee-ming	Digital Watermarking Chip Design	Jul-06	Jun-09	\$560,326
ARD	9668009	JIA Weijia	Wireless Peer-to-Peer (WP2P) Computing: Platforms and Protocols	Jun-06	May-09	\$1,500,000
APR	9610027	JIA Weijia	Platform for Next Generation Mobile/Wireless Multimedia Computing Systems	Jul-05	May-07	\$723,407
ARD	9667012	LEUNG Shu-hung	High Speed Power Line Networking for Home Entertainment	Jun-07	Jun-09	\$962,666
APR	9610035	LEUNG Shu-hung	DLNA Device for Home Network	Dec-05	Nov-08	\$1,000,000
APR	9610023	LUK Kwai-man	RFIC Design Centre	Jul-05	Jun-08	\$3,000,000

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ARD	9668020	TSANG Kim-fung	Development of WiMAX Solution for Consumer Electronics	Mar-07	Feb-10	\$789,820
ARD	9667007	YUNG Kai-ning, Edward	A Custom-made RFID System for Libraries	Mar-06	Feb-08	\$1,050,000
ARD	9668003	YUNG Kai-ning, Edward	Development of RFID Reader	Mar-05	Feb-08	\$920,000
						\$15,523,381
				City U		\$21,520,151
				Total		\$88,657,017