DACUM Research Chart for Wireless Communication Electronic Technician

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Duties	Tasks				
A **Troubleshoot Electronic System**	**A-1** Analyse electronic circuit	**A-2** Perform in-circuit measurement	**A-3** Perform checks on electronic components	**A-4** Perform functional test	**A-5** Perform fine tuning of components
B **Construct Prototype Circuit**	**B-1** Design simple circuit	**B-2** Perform checks on electronic components	**B-3** Fabricate PCB	**B-4** Assemble prototype circuit	**B-5** Construct electronic circuit
C **Design Printed Circuit Board**	**C-1** Create circuit schematic diagram	**C-2** Create PCB layout diagram	**C-3** Convert schematic diagram into PCB layout diagram		
D **Install Microcomputer System**	**D-1** Configure network Operating System	**D-2** Assemble microcomputer system	**D-3** Disassemble microcomputer system	**D-4** Install memory chips on motherboard	**D-5** Test memory chips on motherboard
E **Test Application Program for Microprocessor-based System**	**E-1** Create flow chart	**E-2** Write program in micro-computer system	**E-3** Execute program on micro-computer system	**E-4** Debug program	
F **Install Wireless Local Area Network**	**F-1** Determine wireless LAN requirement	**F-2** Install WLAN adapter card	**F-3** Install WLAN software	**F-4** Install wireless access points	**F-5** Test wireless access points
G **Install bluetooth Devices**	**G-1** Configure bluetooth devices	**G-2** Perform protocol analysis	**G-3** Identify different protocol stacks		
H **Perform Core Network (MSC) Related Testing**	**H-1** Test signal transmission on fibre optic system	**H-2** Identify transmission mode	**H-3** Identify modulation mode	**H-4** Perform SMS testing between two nodes of GSM network	**H-5** Perform data testing between two nodes of GSM network

B-6 Solder components on PCB	**B-7** Wire wrap components on PCB	**B-8** Conduct circuit functional test	**B-9** Rectify circuit fault	**B-10** Solder surface mount components	**B-11** De-solder surface mount components
D-6 Install storage media	**D-7** Test storage media	**D-8** Install Operating System			
F-6 Configure antenna settings	**F-7** Test antenna range	**F-8** Test access point range	**F-9** Configure access point security setting	**F-10** Check common RF interference	
H-6 Perform signal testing on MS					

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Duties		Tasks →				
I	**Setup Local Cellular Network**	**I-1** Perform cell planning in network capacity	**I-2** Perform cell planning in cell coverage	**I-3** Locate dead spots	**I-4** Eliminate interference on cellular network	**I-5** Test signal transmission
J	**Create Mobile Applications**	**J-1** Write WAP applications with WML software	**J-2** Perform functional test on program integrity	**J-3** Perform troubleshooting on program errors		

ACRONYMS

PCB = Printed Circuit Board
LAN = Local Area Network
WLAN = Wireless Local Area Network
RF = Radio Frequency
MS = Mobile Station
GSM = Global System for Mobile communication
WML = Wireless Mark-up Language
SMS = Short Message Service
MSC = Mobile Switching Centre
WAP = Wireless Application Protocol

I-6 Improve data transmission rate					

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General Knowledge and Skills

- Analytical skills
- Communication skills
- Listening skills
- Problem solving skills
- Manual dexterity skills
- Basic professional knowledge
- IT Skills
- Mathematical skills
- Organisational skills
- Interpersonal skills
- Spatial skills
- Visualisation skills
- Computer skills

Workers Behaviours

- Adaptable
- Attentive
- Confident
- Co-operative
- Discipline
- Innovative
- Patient
- Productive
- Punctual
- Reliable
- Responsible
- Self motivated
- Resourceful

Tools, Equipment, Supplies and Materials

- Box spanner set
- Crimping tool
- Combination plier
- Utility diskette
- Cable tie cutter
- Wire cutter
- Soldering/Desoldering tools
- Screwdriver set
- Wire wrapper
- Power drill
- Allen key (metric and imperial)
- Multimeter
- Oscilloscope
- Modem
- Signal generator
- Cable checker

Software

- LAN management software
- Diagnostic utility software
- Network operating system

Future Trends and Concerns

- 3G technology will be the standard
- Consumer utilities are evolving
- New wireless LAN architectures will be developed
- New communication protocols will replace current ones
- Digital communication systems will be developed
- The wireless communication field is advancing at a rapid pace, requiring wireless communications electronic technicians to continue learning new technologies throughout his/her career.