



**湖南商务职业技术学院**  
*Hunan Vocational College of Commerce*

**三年制高职  
专业人才培养方案**

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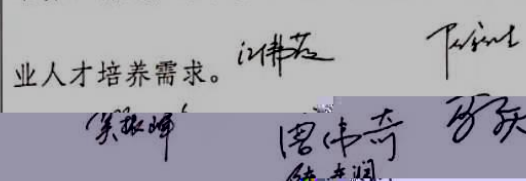
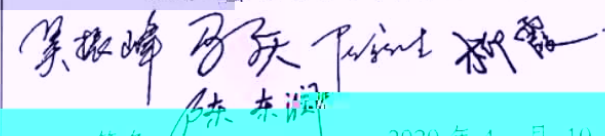


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附件 1:

2020 级专业人才培养方案制订与审核表

专业名称	移动互联网应用技术专业
专业代码	610115

专业建设委员会	<p>培养目标定位准确，课程体系设置合理，符合现代企业人才培养需求。</p> <p>  </p>
人才培养方案论证会	<p>人才培养方案符合现代企业要求。</p> <p>  </p>
学术委员会	<p>人才培养目标清晰，课程体系和教学进程合理，实施保障较完善，同意实施。</p> <p>  </p>
校级党组织会议审定	<p>人才培养方案符合上级相关文件精神及学校实际情况，同意实施。</p> <p>  </p>
备注	

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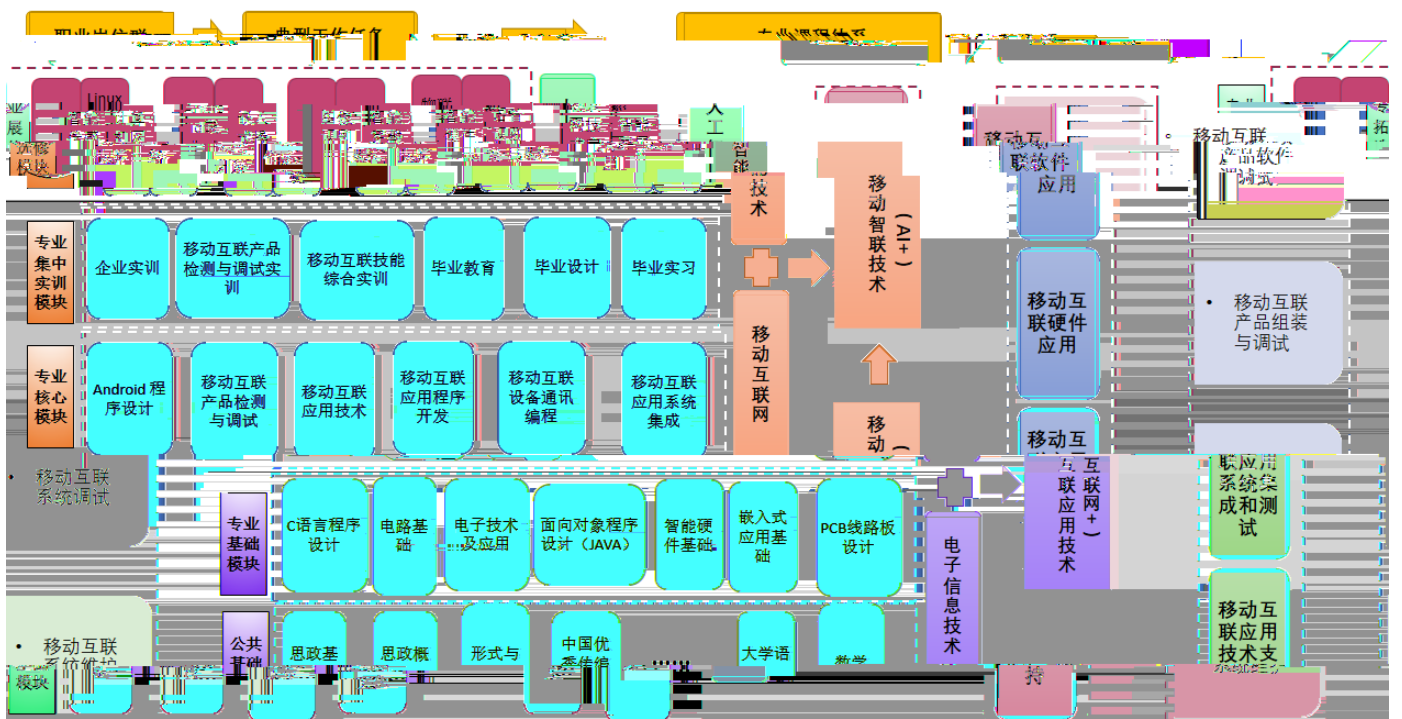
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 3VC^-\$ = Æ - =+U#â ‹ 8 q EAü ,!™. ¢,° ð+U?ø = -  
 r?ø Â g P?ø + ÇÀ ` ð ‹ Â 3 ìM6?· ≠t P ‹-.5 > ,  
 . ¢1 6, P,° , + Â EAü , u E p ` ð,°+U#â ‹ Â/t P ‹  
 q Þ 00% .,° à Ñ >

. Aü-\$ = Æ 0 b ¼@ 6, P <,°LI!ë(-&i E¹ p\$; ! f  
AÚAü8 ',°(- ] =6, P,°(- ] /t P)â ¹ Â6, P <2± >  
73 Ñ-\$ = Æ - ?8 G Ø3X ¶73 = ¥ R3X D1x\*< ¶73 =  
+U#â é10E ¶73 , - ? :0 FP+^73 Ñ , " ,8 G1x\*<73 Ñ Â ð  
L{ Ú ¶73 Ñ1• >  
q?· » ï Æ q?· ; "Q 6, D+U#â < =6, P L+, =6, P  
8 G Ø3X =+U#â\*<Að D é10E =Q 6, FKµAx H1• >  
• œ?·"x Æ bB40A •>B4 8Aè ¾ p q ,6, P#•Aú Â+U  
#â • Â pE» ,FPEý û ¥ 1 x = P È %oN)NÇ Â?üNÇ1•• œ ï E

Â!ë , Q • œ,° Ô ~ ] >B40A69 n pN^- \$ ' P 1JB >q

? • œ p v p P È % • Ú >F?+^ 3 ì?ú H • † Â W b(¯8" •

† > 1B4 • > Ê - ? „ Ô\* <Ađ 0.v Â"x6,E» 25 PÂ >

´ µ Q P 0.v ´ œ , , œ < µ

3VC^-\$ = Æ - = ° Ä S69 = ... Ä )æ = ~ p đ ~,° Q æ

EAü Ç - ?8 q œ -,° Þ Ñ , C K &Lô = ý Ä Ø3X = G N8

G = • 7 C Þ,° E ÷C^ Ç - = Q P2ô/" , 73+^ Q P,° S5\*

Â>, p ü O 6 ‹ ' >

. Aü-\$ = Æ ¼@ Q P,° bC^ =/t P E • Q P6;,(^C^

D / ± ÇAÚAü 7 P Â | P Q E , ¼@ 7 P Â 7 P2± Á |

P+q 9 >

73 Ñ-\$ = Æ73 U - ?Cz\$Æ<sup>a</sup> > = LU 0Aô1• Q P ¶73 ,

¬73 < 7 P1x\* < =CX P =# Á1•-. ©B40A 0.v | P. Aü&«#q

F +^ ^ Q P#q Þ :)å8, >

q? • » ï Æq? • 5 Q P D Q P2ô/" , Q P D+U#å ‹ ,

Q P6; D Q P S5\* , Q PCz\$Æ = Q P O Lÿ = Q P LU Q

P p P1 • >

• œ? • "x Æ bB40A • >B4 8Aè ¾ p q , l ì = 2 = W

Q P pE » , FPEý û ¥ 1 x = P È %N)NÇ Â?üNÇ1 • • œ ï E

Â!ë , Q • œ,° Ô ~ ] >B40A69 n pN^- \$ ' P 1JB >q

? • œ p v p P È % • Ú >F?+^ 3 ì?ú H • † Â W b(¯8" •

† > 1B4 • > Ê - ? „ Ô\* <Ađ 0.v >

´ µ é Þ • 6è ´ œ , , œ < µ

3VC^-\$ = Æ - = !™.x é Þ - r?ø , ± F8¥<sup>3,0</sup> é Þ - %

Â#(g é Þ đ"G,° S ) û U , FF!› G1 V2ô/" >

. Aü-\$ = Æ žM~ Â Â\* < @ c 3(8"/t P q • é Þ?ø ,  
 \* < @ é Þ, ° - r = E • Â / ð2±/t P ‹, ° '+^ , q ÞAÚAü  
 ¬\* < @ é Þ L+, >  
 73 Ñ-\$ = Æ73 U\* < Að6Š31 ÔL{ , 73 U @H é Þ = @H ð  
 "G , ?0% ·F = 6 Q æ = • œ -, °73 Ñ >  
 q?· » ĩ ÆbB40A • œ q?· 6 ‹ é Þ2ô/" = é W2ô/" =  
 V2ô/" 1 • INÍ • 6è >  
 • œ?· "x Æ q?· FPEý P È %oN)NÇ = ?üNÇ1 • • œ ĩ E Â •  
 !ë , Q • œ, ° Ô ~ ] , q?· • œ p v p P È %oB4 Ú , F?+^  
 Q 6, L~ W é Þ • 6è 6 æ (~ b5 5L • † >  
 ´ µ é Þ ÔD+ ´ œ , , œ < µ  
 3VC^-\$ = Æ - = 99 6F é2ô/" , Ô p LU ... ' EAü ÂLü  
 %o9™ @ ĵ U , G1 é Þ 6 • 9™, ° - r 2 G >  
 . Aü-\$ = Æ Â :- . © é Þ Í f '6, CY Â ĵ ž?ú0A >  
 73 Ñ-\$ = Æ'Ô4ù Â :2± é ÞAô = Â é Þ -, ° µ+^ ĩ  
 # , ? é ÞEý0A c, °4ú4ý = ... B9 ="ÕFP73 Ñ >  
 q?· » ĩ Æ 6 ‹ ã é Þ , p(l" < Q12 Q12p<w ì é ã Ô µ?Ð» S,, > Ç Ø %

' μPϕ • S q • EBA ÷ e(ŸAđ ' œ , , œ ≤ μ  
 3VC^-\$ = Æ - =\* < Ađ6Š31 ÔL{, °Pϕ • S q • œO , 1%!™  
 AÚAü , › ž đ r , Q 8 Dá3VC^ Ç G1 0 œ, °\* < ) + , 8  
 ?ÿ p Ô)æ c „"G U ] C a, ° c 3 Ü •)dM^ [ = ° • Â ÑH >  
 . Aü-\$ = Æ Â Pϕ • S q • L+, ?ø Â ï# Ađ , a % @  
 À Pϕ • S q • , !™.αAÚAü đ2±/t P ‹, ° 0 b?ú Á , ± F  
 0 œ, ° S5\* ï E >  
 73 Ñ-\$ = Æ73 UI™.α < ÆL\$NÎ , ?ñ€ • 2^z3uñ=z ‹ \$ =

$\mu^3 \hat{A}CY 1 >$

73 Ñ-\$ = Æ73 U\* < Ađ6Š31 ÔL{ , Q ¼ u"ñ3V ± , 73 U  
!™.αAÚAü ¼ ( =AÚAü/t P Ç73 0% ·F 6 Q æ = •œ  
– Ç ?E¹ p fB#@6>žEô73 Ñ =FqEÇ < Æ73 Ñ Â?ø Ñ1•M”  
I P73 Ñ >

q?· » ĩ Æ bB40A \$œ •• ( p q4õ , FPEý · > , !, =  
\*¶\*P U • =4Ø8”2ô/”1•• œ W • , 5 \$œ • § Ý • đN¼ 2,º  
8!9 %o5 ,ºMÿ ³ Í ĩ =:• C4Ø8” đ(ÿ = ® Á4Ø8” { Á1• , À  
N ø4Ø8” ½ L D ] œ+U S ) u"ñ •6è5 >C- › >

•œ?·"x Æ bB40A •>B4 8Aè ¾ p q , ÔD+ •œ =8  
q œ – pE» , FPEýAÞAđ.J0¬ = P È %oN)NÇ Â?üNÇ1••œ ĩ E  
Â!ë , Q •œ,º , ~ ]>B40A69 n p < E4ú ÔD+ F Ò”}  
Û </p Ç q?· •œ p v p P È %o • Ú Â S u ÔD+ •œ c ù Ç  
1B4 •> Ê - ? „ Ô S u • œ Õ Ë Â • (\* < Ađ 0.v >

´ µ c 3 N/ö V5 ½ L ´ œ , , œ < µ  
3VC^-\$ = Æ - = / c 3 V5 ½ L,º#(g • û , - ="G  
8 B U =8 ù , - =(g 3 q • U û , ~ F0% ·,º đ+U 7 Ü  
Â!™.α,º - r?ø Çn c 3 V5 ½ L2ôQ ,œ P :\* < đ D đ =  
đ D/t P •L\*,º ©31 Ç Q ½ L3V ± D ½ L ÷ f , f 2ô/”  
L+, >

. Aü-\$ = Æ'Õ. ¬ V µ c 3 V5 ½ L 0 b2ô/” , N¼ P c  
3 V5 ½ L ( œ = ½ œ =8º e =0 ¶ = •6è ="G 1• ½ L2ô  
Q Â F Ò Ç\* < @ ÂAÚAü c 3 V5 ½ L N/ö?.3V Â S5\* W E >

73 Ñ-\$ = Æ73B+B1 V5 ½ L c,º C1ý © Ç73 U U Õ V  
5 ½ L,º2ô/” »#ë Ç73 Â œ – V5 ½ L,º ĩ# , ± F œ –



V5 ½ L,°8¥³ – % Ç73 ½ L,°?üH < Æ ,@ B1 % /t P  
,°0 0 ½ L)æB— >

q?· » ï Æ q?· ; " c 3 ( œ = c 3 ½ œ = c

3 8° e = c 3 0 ¶ = c 3 •6è = c 3 "G

1•. Aü >

• œ?·"x Æ bB40A •>B4 8Aè ¾ p q , ÔD+ • œ =8  
q œ – pE» , FPEýAþAđ.J0¬ = ÔD+ %PÂ = 1 x • œ = P È %  
N)NÇ Â?üNÇ1•• œ ï E Â !ë , Q œ+U œ – °CÙ , < œ  
+U,°?üH >B40A69 n Eý0A69 n D5 Ò69 n-.5 > Ç q?· •  
œ p v p P È % • Ú Ç 1B4 • > Ê - ? V5 ½ L\* <Ađ 0.v >

´ µ\$Ž | ½ L ´ œ , , œ < µ

3VC^-\$ = Æ - =\$Ž | æ ð"JC^ , G1 Đ í = | S ) , f

ð ½3V ± , p D P – Đ ½ L »#ë Â ‡FV E ÷ r >

. Aü-\$ = Æ Â \$œ\$Ž ½ L Â\$Ž | ½ L »#ë Ç ¼@ \$œ\$Ž ½  
L#®#Ü D\$Ž | ½ L < Ç'Õ ¿\$œ • | P ¼ (F•F/ Ç Ø0¬\$Ž |  
2ô"/,° 01‡ D>ž)æ Ç U. \$Ž | F g D Q P5 PÂ >

73 Ñ-\$ = Æ73 U\* <@ ¬F +^\$Ž |2ô/" < Æ = S69 | P>,  
p Ç73 U n \$Ž |2ô9' F Õ5 PÂ Â gC[ •Aã Ç / ± |0 œ †  
,° SEP73 Ñ Â>žEô73 Ñ >

q?· » ï Æ q?· ; "\$Ž |\$Æ#w = \$Ž |2ô/" = \$Ž |O (ÿ =  
\$Ž |2ô9'1• » ï >

• œ?·"x Æ bB40A •>B4 8Aè ¾ p q , ÔD+ • œ =4õ  
@ • œ pE» , # H • œ,° , ~ ] Â } œ+U,° q?ø73 Þ ] >  
B40A69 n Eý0A69 n D5 Ò69 n-.5 > , Ô)æAú - » ï P y  
L =Aú - ï E P y L Ç q?· • œ p v p P È % • Ú ÇF?+^8

5L • † E\$Ž | ½ L • 0A F 6 ‹ • œ Ç 1B4 • > Ê - = „ Ô,°

\* < Ađ 0.v Â8¥ ³,° > í > O >

´ µ ] œB# ½ ´ œ , , œ < µ

3VC^-\$ = Æ - =)"1 2ô/" D > ' EAü , /6è Â% ± ¬ ›

ž,° đ r D/t P © 6 EAü /t PCY 1 U Ç ©# đ,° @ [ D

µ ³ = đ,° y \_ DCY 1 = đ2± § B ‹,°M6?· DF3"x đ2± Â

8 'l,° ÂBF D § B ‹ >

1•6, P •6è?ú H 6 æ(~ b • † Ç 1B4 • > Ê - ? „ Ô,°\* < Ađ  
0.v Â đ ½3V ± >

μ Ê+^ ½ Ĩ ' ' œ , , œ < μ

3VC^-\$ = ÆFPEý :2± ½ %» ĩ,° œ – ÂAã4ù , - =8¥ ³  
,°6, PF% í3VC^ Â/t PF8 Ê Ñ Ç - = [B^ ž f,° ' 'O >

. Aü-\$ = Æ ¼@ Ê+^ ½,°#ë • œ -,° û?· ] Ç\* < @ Ê  
+^ ½ n+^ ½0 ,° qNÎ = † Ĩ =5 ° =B#@6. Aü Ç Â Ê+^ ½  
qNÎ,°.x1 Â † Ĩ,°F? Ĩ '(&ĩ >

73 Ñ-\$ = Æ73 U o x :2±#q p.x1 - Ĩ ' qNÎ , Ĩ ' n  
?÷ ç ½ , - ? ½ •>žEô73 Ñ = Ĩ '73 Ñ Â ðL{ "ÕFP73 Ñ Ç73  
U μ+^ Ê+^ ½,° IL +^B# Ç73 UL;B1 =EP Æ 68b>, u2± ½ œ  
Â Á x2± ½ œ >

q?· » ĩ Æ q?·Aè ¾FP. =B-/p = 31•• u p ©>, u ç  
½ Ax H = q5 =1 6ŽB = e Á1• Á x ½ œ , " PAôAx  
,° Ĩ ' r E?ú99 >

• œ?·"x Æ bB40AGý+^ 1 x • œ# ,%ö œ+U S5\* ÇGý  
+^ P ĩAú - p l , Q œ+U œ -,°0% · ] ÇGý+^ œ+U q %» =  
• > q 2,° • œ ĩ E , Q œ+U@ é ÔL{L\$NÎ73 Ñ1• >B40A  
69 n ; " © ,Eý0A69 n = U a\* < Ađ69 n ZG < Ç q?· • œ p  
v p P È %» • Ú ÇF?+^Q 1•6, P •6è?ú H 6 æ(~ b • † Ç 1  
B4 • > Ê - ? „ Ô,°\* < Ađ 0.v Â Ê+^ ½ Ĩ '73 Ñ >

μ ] œ9'B# ' œ , , œ < μ

3VC^-\$ = Æ3VC^ •6è p b , - =8¥ ³,°6, PF% í Â(g Í  
ç P2ô/" , G1 !™.x,° đ+U?ø Â - r?ø , ± F8¥ ³,°9'B# œ  
– – % , / ±D ½ L ÚL{ EAü , Ô p8 q œ – Â4pDá œ – E

Aü , }52 > ½ L3V ± >

. Aü-\$ = Æ Â 6, P+U Ž Â ‹ v ûM6,°9'B#B#@6 0.v

. Aü , 'Õ4ù Â 6, P Í f p ¥ c#¿ ,°B " } = %+^>žEô ÂQ

NÇ E Ç¼@ :0 9'B# Ê+^ ½ %o,°5 ° ,Â !FUL;B1 ¶ Ç

0 b,°61B 10E+› Â ï# , n?÷9'B# Ê+^ ½,° Ì ' r

E Â ¶ >

73 Ñ-\$ = Æ - = ^ n+U#q Â | x û ¥ c Ê+^9'B#,°73

Ñ ,73+^9'B# ^#¿ L ÚL{,° n#q Þ Â P x#q Þ cF >,1¶ ‹

,° j Â œM~ Ú#w Ç73 U ßB ®L;B1 Â61B 68bLô Ü,°9'B#

P xCz Ì Ç73 • Ì n?÷,°9'B# Ê+^ ½ Ç - = 6 Ð,°D ½ L Ú

L{73 Ñ >

q?· » Ì Æ ; "9'B#B#@6 0.v. Aü , û?·,°B " }H ÂB#

# ?ú O ,9'B# b =B\* =B1 = Ì =B ,° ¶73Aã4ù , 6 Ð,° LB#

- Í10E+› ÂD ½ L ÚL{. Aü1• >

• œ?·"x ÆB40AGý 4õ @ =4õ A\$- > E,° < x • œ W E Ç

® Á Ê+^ > Â n+^,°5 #,, 3 !,° 01 = 3 ! ·L†,° Ð • ,  
 \* < @ 3 !F 5#,° Ð • Ç Â -. ©. Aü,° @ NÍ ï# Ç73F +^ v  
 œ. Aü@ é I P c,°L\$NÍ >  
 73 Ñ-\$ = Æ - ? 6 Ð,°F 1Í73 Ñ =FqEÇ Þ\* <73 Ñ = óB—  
 , "73 Ñ =52 >F +^ v œ. Aü < Æ Â@ é ÔL{L\$NÍ,° Ê+^73  
 Ñ =F +^ ! œ -,°73 Ñ Â8 œ73 Ñ >  
 q?· » ï Æ q?·Aè ¾ 3 ! = ·L† = 2 ! = ä < = C Ð0%  
 < = Ð0% < ¬ Ê+^ >  
 • œ?·"x Æ5 > œ+U ÔL{ ,F« à Ê+^ p-\$,° , û  
 M6 = U+^ p Ü ,° Õ O ,FPEýB4 8Aè ¾ = 1 xP§ Þ1• ï E 6  
 ‹ • œ »B40A69 n ; " © ,Eý0A69 n =U a\* <Ađ69 n ZG < Ç  
 q?· • œ p v p P È %o • Ú ÇF?+^Q 1•6, P •6è?ú H 6 æ(~  
 b • † Ç 1B4 • > Ê - ? „ Ô,° ! œ\* <Ađ 0.v >  
 ´ µQ 1• ! œ ´ œ , , œ < µ  
 3VC^-\$ = Æ - ?Q P,°0 œ?ø Ô Á"x e @H Ø?ø?ú Á >  
 ?E¹ p,°"x. !h = P0 œ S5\* Ç- ? C K &Lô =N7 &Lô,°  
 ù Ç- ?'#(g+U#q = 5 ... ',°2ô/" Ç?\* < ) = ? çCU '#  
 (g/œ 3 - ? e a c ,,° µ³ U ÂCY 1 U >  
 . Aü-\$ = Æ ¼@ ä0% <,° ‹ ( AÚAü ä0% <,°H ?· ] =  
 óB— ] =Ô+^ ] F 6BAÚAü0 œ<,° 68b?ú Á >\* < @ ·L†,°  
 , + Â ·L†,°F 1Í# O 73 U'Õ4ùAx1Í 68b 3 !,° ·L† >  
 \* < @ ä0% <,° , + Â ä0% <,°F 1Í# O 73 U'Õ4ùAx1Í  
 68b 3 !,° ä0% < >  
 73 Ñ-\$ = Æ - ? 6 Ð,° ! œ 0 W S ) ¬ - ? <F 0 S  
 )Ce0µ Ä a` 0L\$NÍ = < ÆL\$NÍ = @ éL\$NÍ žEý0A,°73 Ñ Ç

? 6 Ð,°8 œ73 Ñ Â < | œ S ) ÿ † ñ 1N¼ ,°73 Ñ >  
 q?· » ï Æ q?·Aè ¾ 3 | = ·L† = 2 | = ä < = C Ð0%  
 < = Ð0% < ñ Ê+^1• » ï >  
 • œ?·"x Æ bB40A# H / Û | PM6"x , • œEý0A=Ã › |  
 œ 0 W S ) , 1 xP§ Þ p q4ð >B4 8 • œ# H ï# P m L =  
 • œ •!ë ¥ L =69 n ï EEý0A L >B40A69 n ; " © ,Eý0A  
 69 n = U a\*<Að69 n ZG < Ç q?· • œ p v p P È %• • Ú Ç  
 F?+^Q 1•6, P •6è?ú H 6 æ(~ b • † Ç 1B4 • > Ê - ? „ Ô  
 ,° | œ\*<Að 0.v >  
 ´ µ ,)½Að D !\* < 5 Ax ´ œ , , œ < µ  
 3VC^- \$ = Æ - =0% ·,° œ - 7 Ü • C &Lô,° ý"J ,  
 - =E¹ p [B^,°FqEÇ S5\* - % ,+^EßA÷,° S ) ›-A »+U#q c  
 0)æ,°L\$NÎ >  
 . Aü-\$ = Æ Â ,)½ = m b0°L\* =LÅ p H ñ < 9 =  
 LÅ p H ,° | •(- ·1• ,)½Að,° 0 b. Aü , Â 5 Ax œ c,°  
 ø | fAx = }Aô öPÂ,° S ) D ï# , œ P lLü = < Æ D :\* <  
 | æ,° ï# >  
 73 Ñ-\$ = Æ - ?73 ^ 6 Ð0A Ü @ < Æ Â@ é ÔL{L\$NÎ,°  
 73 Ñ , 73 UE¹ p'Õ4ùF+^ | æ :\* < = | æ < Æ Â | æ Þ ã,°  
 :0 ï# >73 ,)½,° S ) ñ < Æ+U#q c,°L\$NÎ , P+^  
 5 Ax,° ï# >\* < lLü a\* < | æ , p1x\* < 6; Ñ ? ~,° é  
 10E Ó æ , - ?@ é 6 Ñ | P c 0)æ,° ÔL{L\$NÎ,°73 Ñ >  
 q?· » ï Æ q?·Aè ¾LÅ p Á , = ,)½ =LÅ p H ñ <  
 9 3 | = 5 AxH ñ < 9 = ø | fAx = }Aô öPÂ ï \$ <  
 Æ D ^ < Æ >

• œ?."x Æ bB40A 1 xP§ Þ p q4õ , -vH 0· 0 , )½5  
 Ax S ) i# , ° • œ , \$ LF 1Í ¶ , -5 >Q 6, l P œ+U8  
 Dá(¯&i , ÔÂ D\* < Ađ • œGf • B PÂB4 , µ œ+U Â n+^E¥ , >  
 B40A69 n ; " © , Eý0A69 n = U a\* < Ađ69 n ZG < Ç q? •  
 œ p v p P È % • Ú ÇF?+^Q 1•6, P •6è?ú H 6 æ(~ b • † Ç  
 1B4 • > Ê - ? „ Ô , ° ! œ\* < Ađ 0.v >

´ µAx1Í p Ê+^ ´ œ , , œ < µ  
 3VC^-\$ = Æ - = C ãF =2ô- "x2ô,° V2ô/" Ç - =  
 LU > ' EAü = Q æ EAü , ± F5R ü [B^,° S69 - % > }  
 52 >6, P3VC^ >

. Aü-\$ = Æ ¼@ Ax1Í p '315 , ° Ö73 , Â  
 '315 , ° 0 b ' i# Ç Â µ+^ ½ •5LEÇE¥ , ´ µ  
 È(~ :2± ½ ™,° i# ÇÂ µ+^+k †>ž r : \* < E¥ , ´ µ  
 : \* < ! œ,° i# ÇÂ µ+^%J/p ½0u l 'E¥ , ´ µ  
 AôAx%þ ½0u,° i# >

73 Ñ-\$ = Æ ? \_+^ Ô çE¥ , 'Ö4ù@ é+U#q c =  
 ' cF} f,° DAx1Í p Ê+^-. © ÔL{L\$NÎ,°73 Ñ Ç - ? t 6  
 ? = ° Ä?ø = ° Ä S69 Â q5 , °73 Ñ >

q? • » i Æ q? • Aè ¾ '315 , ° ¿>û ´  
 315 , °1x\* < D5\* Ú. Aü , ½ •5LEÇE¥ , ´ µ+^k †>ž  
 r : \* < E¥ , ´ µ%J/p ½0u l 'E¥ , ´ µ,°  
 µ+^ i# >

• œ?."x ÆB40AGý ~ Á E • œ , Aè4ù5 > , • >Aè  
 ¾ p q , œ+U ÔD+ ' pE» ÇB40A69 n ; " © , Eý0A69 n =  
 U a\* < Ađ69 n ZG < Ç v ? • œ#q ÞG3 ^Ax1Í p p uF > , Ç

1B4 • > Ê - ? „ Ô,°\* < Ađ 0.v , B , /Ax1Í p Ê+^E¥ „,°  
'M" n'Õ4ù >

´ µ ¥ ¶ e3V ± ´ œ , , œ < µ  
3VC^-\$ = Æ - =B Ô ¾ EAü = ¥ ¿ ž EAü , ø Í @  
H đLÆ/÷ = Ú. Aü Ý y1•\* < + Â EAü > ± FAÚ-U œ - ,  
ý Ä S69 Â ÔD+,° œ -- % >

. Aü-\$ = Æ¼@ ¥ EAü = ¥Ađ\* < = ¥ ¿ ž1•. Aü ,  
Â ¥ ö3X D9í ,° ï# = ¶ , œ PF > , ¥Aú - ,73  
U / v9í ,° ¥F > ,1x\* < = :\* < , ¬ Â ¥ Ê+^,° :0  
¶ e >

73 Ñ-\$ = Æ - ?FPEý :0 R3X K F > , ¥,° ö3X D9í  
,°73 Ñ , - ? / ¥,°-U Ô ] = , ~ ]F > , >\* < Aú -,°73  
Ñ > - ?F} f L\$NÍ P 7G 7 • = P S69 = 1"x P0 ï# @ é  
L\$NÍ,°73 Ñ >

q?· » ï Æ ¥ EAü = ¥Ađ\* < = ¥ ö3X D9í =  
¥Aú - = ¥1x\* < D :\* < = ¥ Ê+^1• >

• œ?·"x ÆB40AGý ~ Á E • œ , Aè4ù5 > , • > Aè  
¾ p q , œ+U ÔD+ ' pE» ÇB40A69 n ; " © , Eý0A69 n =  
U a\* < Ađ69 n ZG < Ç v ? • œ#q 7G3 ^Ax1Í p p uF > , Ç  
1B4 • > Ê - ? „ Ô,°\* < Ađ 0.v , B , /Ax1Í p Ê+^E¥ „,°  
'M" n'Õ4ù >

´ µ ¿ ž •6è ´ œ , , œ < µ  
3VC^-\$ = Æ G1 ¿ ž1b 6 ,° S )?ø + , ~ F!™.x,°  
¿ ž?ø , } ¿ žLh99 EAü ,( ~ 0 G1 a %o 3 ï ¿ ž?ø , Í  
p 3 ï ¿ ž EAü , < ¿ žL\$NÍ D ` đ < Â/t P = 3 ïM6?·



3] ü5 > ,p 3 ì ě ž ' 0 Ê ? ,°CW)d ,¬ 00% .,° à Ñ >

. Aü-\$ = Æ ¼@ ě ž 0 b. Aü , 'Õ ě W4à W?ú , Â ð  
Dá ě ž =CX Ý ě ž =#¾Lh ě ž =O ÷ ě ž1• ě ž# Á# ?ú.  
Aü >

73 Ñ-\$ = Æ73 U - ? 0 b,° ě žLh99 =8 G Ú ¶73 ,  
- =Lh&´FµLÿ =0. Ê [ Á , :\*<73 Ñ ÂE¹ p,° ě ž1x\*<73  
Ñ >

q?· » ĩ Æ Aè ¾] œ+U W #+U#q ě ž =#¾Lh ě ž =5‡5  
ě ž DAX1Í pF # (å5 N°Lh = ðDá DCX Ý ě ž = ÚFP D û>,  
ě ž = ó ‡ =8 ‡ D ě ž C x =/t Ú D"x6, ě ž = ĵ+U › í  
ě ž = 3 ì D/t P ě ž1• - . ©. Aü >

• œ?·"x ÆB40AGý &«#q,° • œ ĩ# ,52 >F +^B4 8 ¾  
B4 =Aè Ý =#¾Lh%J -1• ĩ# , \_+^ Ô ¥ = Ô(ÿ L5‡5 Cz\$Æ4ú  
4ý • œ >B40A69 n Eý0A69 n p q Ç N ~Gý+^ 3?ú • † Ç •  
> Ê - ? ě ž L ě ž ĩM~,°. Aü Â '5 PÂ >

´ µ ] œ5Ä6è ´ œ, , œ < µ

3VC^-\$ = Æ - =E¹315 f ¼@ Pç • S q •5Ä œ,° 0 b Õ  
\*,<,° EAü , 5Ä6è,° E • =1 x ÂFJ ° , - = S!› G1 !™.œ =  
F !›,° x5Ä?ø , - =Q P = › í,° x5Ä\* < ) Â x5Ä ûCÙ ,  
< /5Ä,° Á(ÿ,° U Ñ =HªC... Ñ = QFV Ñ , Q ^ x5Ä!YC...  
#q Þ Â x5Ä QFV#q Þ cL¬ ì û = Â ° ð r =F >,8 G •6è  
,°8 ?ÿ ] >

. Aü-\$ = Æ Â 5Ä œ 0 b\* <Að , \* < @ 5Ä,° bC^ =5Ä,° >ž  
)æ ~ 7 =5Ä,°99+a = c?µG <5Ä œ 0 b\* <Að1• >

73 Ñ-\$ = Æ - = 6 Đ,°\* < @ 5Ä =F3"x5Ä =HªC...5Ä = QFV

5Ä Â VFH5Ä,°73 Ñ Ç73 U x5Ä,° ù7. Á)æ Ô Á P , µ8  
 ' Í f žM~ ÂBF,° ‹ Ç ^ %o /t P ½ LB# 1 c ,73 U8 ?ÿ  
 5 :[ û U Eô = 1+,Q F = ? E •,°5Ä s ð+U >  
 q?· » ï Æ ; " N) †8° e = §?ü8° e =8TD~8° e =5Ä e  
 8° e = W # ½ L8° e = ½ œ8° e 1• >  
 • œ?·"x ÆB40AGý &«#q,° • œ ï# ,LšB4 8 • œ L ,  
 6 ‹ f P Ÿ,°1b ÂB4 8#q † ÇB40A69 n Eý0A69 n p q Ç  
 N ~Gý+^ 3?ú • † Ç • > Ê - ?E1Q ,° x5Ä \$ ± , - = 0 b  
 ,°5Ä œ. Aü ÂEý.ç,° I P ¶73 >

2.











**3.**











4.















**5.**











~

5

		2	3	1	5
PCB	PCB PCB	2	1 PCB	1	PCB
		2	3	1	
		2	2	1	4
		2	2 3	1	4
		4	3 2	1	3



## 6

1			50
			50
2			50
		STM32 GPRS Wi-Fi ZigBee	50
3		Android	50
		Wi-Fi Android	50

Android

1 ZigBee

Wi-Fi

4

ZigBee Wi

7

1				50
2			Android	50

4









	1	i						
	2	i						
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15					v		
	16						v	
	17							
	18							
	19		v					
	20			v	v			
	21	v						
	22							
	23							
	24							
	25							
	26							
	27							
		17	18	18	19	10	0	82
		2	0	0	0	0	0	2
		1	0	1	0	4	0	6
		0	0	0	0	9	15	24
		1	1	1	1	1	1	6
		21	19	20	20	24	16	120
		5	7	6	7	0		25
		26	26	26	27	24	16	145

						1	2	3	4	5	6	
						17	18	18	19	10	0	
1	0601025	A	3.0	48	48		3					1
2	0601024	A	3.0	48	48			4*12				2
3	0601046	C	1.0	16		16		4*4				2
4	0601028	A	1.0	40	40		2*4	2*4	2*4	2*4		5
5	0801001	C	2.0	112		112	2					
6	0801215	A	2.0	36	36					4		5
7	0603001	B	2.0	32	4	28	2*16					1
8	0603002	B	2.0	32	4	28		2*16				2
9	0603003	B	2.0	32	4	28			2*1			3
10	0603004	B	1.0	16	4	12				1*16		4
11	0601039	A	2.0	32	32					2		4
12	0601070	A	1.0	16	16		2*8					1
13	0601071	A	1.0	16	16					2*8		4
14	0801080	A	2.0	32	32			2*8				2
15	0801216	A	1.0	16	16			2*8				2
16	0801217	C	1.0	28		28						5
			27.0	552	300	252	7	8	0	2	4	
17	0601072	A	1.0	16	16							2
18	0601069	A	1.0	16	16			1				2
19	0201241	A	2.0	32	32							1
20	0201232	A	1.0	16	16							1
21	0201039	A	3.0	48	48							5 358.88 505.

					/ / / / /									
						17	18	18	19	10	0			
1	C		B	4	64	14	50	4					1	
2			B	4	64	14	50	4					1	
3			B	4	64	14	50		4				2	
4	JAVA		B	4.5	72	20	52		4				2	
5			B	4	64	14	50		4				2	
6			B	4.5	72	20	52			6			3	
7	PCB		B	4	64	12	52			4			3	
				29.0	464	108	356	8	12	10	0	0	0	
1			B	4.5	72	22	50			6			3	
2			B	4.5	72	20	52			4			3	
3			B	4	64	18	46			4			4	
4			B	4.5	72	12	60			4			4	
5			B	4	64	18	46			4			4	
6			B	4	64	16	48			4			4	
				25.5	408	106	302	0	0	10	16	0	0	
				<b>54.5</b>	<b>872</b>	<b>214</b>	<b>658</b>	<b>8</b>	<b>12</b>	<b>20</b>	<b>16</b>	<b>0</b>	<b>0</b>	

:

0.5

0.5

							/ / / /										
							1	2	3	4	5	6					
1			B	4	64	14	50				4				4		
2			B	4	64	20	44				4				4		
3			B	2.5	40	10	30					4			5		
4			B	2.5	40	10	30					4			5		
5			B	3.5	56	20	36					6			5		
6			B	3.5	56	20	36					6			5		
7			B	2.5	40	10	30					4			5		
8			B	2.5	40	10	30					4			5		
9			B	2.5	40	10	30					4			5		
10			B	2.5	40	10	30					4			5		
				15	240	67	173	0	0	0	4	18	0				
			C	1	28	0	28	1									
			C	1	28	0	28			1							
			C	4	112	0	112					4					
			C														
			C	6	28	0	28					0.5	0.5		6		
			C	24	672	0	672					9	15		6		
				36	868	0	868	1	0	1	0	13.5	16				
				51	1108	67	1041										

	7	2	8	0	0	0	2	0	4	0	0	0	300	252	552			
	8	0	6	0	0	0	0	0	0	0	0	0	188	44	232			
	0	0	0	0	0	0	0	0	0	0	0	0	64	0	64			
	8	0	12	0	20	0	16	0	0	0	0	0	214	658	872			
		1		0		1		0		13.5		15.5	0	868	868			
	0	0	0	0	0	0	4	0	18	0	0	0	67	173	240			
	23	2	26	0	20	0	22	0	22	0	0	0	833	1995	2828			

30.0%

19.0%

70.5%

151.0

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1		48		4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2				
2		8 hours																					
3		112	56	56																			
4		32		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
5		16										2	2	2	2	2	2	2	2	2	2	2	
6		48		4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	
7		48		2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	
8		32		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
9		4 hours																					
10	C	64		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
11		64		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
12		28																			28		
			56	56	22	20	22	20	22	20	22	20	24	22	24	22	24	22	24	22	28	0	
1		64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				
2		8 hours																					
3		32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
4		16	2	2	2	2	2	2	2	2													
5		16								2	2	2	2	2	2	2	2	2	2				
6	/	16	2	2	2	2	2	2	2												2	1	
7		32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				
8	/	40		4	2	4	2	4	2	4	2	4	2	4	2	4						2	1
9	/	4 hours																					
10		64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
11	JAVA	72	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
12		64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				
			24	24	28	26	28	26	28	26	26	24	26	24	26	24	26	22	4	4			

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	1	8 hours																						
	2	32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2						
	3	72	6	6	6	6	6	6	6	6	6	6	6	6										
	4	PCB	64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
	5	Android	72	6	6	6	6	6	6	6	6	6	6	6										
	6		72	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
	7		28																			28		
				22	22	22	22	22	22	22	22	22	22	22	22	10	10	10	10	4	4	28		
	1	8 hours																						
	2	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	3	( )	16	2	2	2	2	2	2	2														
	4		32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2						
	5		64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
	6		72	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
	7		64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
	8		64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4						
	9	/	64	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4					2	1
				25	25	25	25	25	25	25	23	23	23	23	23	23	23	23	4	4				






1 B9<sup>a</sup>2± a q?· e= B40A C0& œ, œ < =6B4 ,L\* = Ô 6 L ' 6B40A =B40A ]C^  
 B40A,° û \$ ÂF? \$ "] 69 nïE1•,° Þ >

2 B9<sup>a</sup> ÁN<sup>-</sup> e/B9<sup>a</sup> » ï B9<sup>a</sup> D ð f / ± ï ~ L û ë,°B 4üB\* D >  
 b>ž 6 E ? 3 , I P •.J Ú = Â 4ÝL~ G = • x :: Ž 6 3 >