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K@ §RSR20-X-28L ˜ s vD +a Ô ’ ¹ ˜ 4ï 0 ƒ j È _ Y+X -Lu xF ,´ z , ƒ ° _ úFJ × f ° _ È+aK@ §5•5 6Ñ - 9L€ œ (8 k 0 ,´ žFJ × ñ È § 98 k. Aö × s ÄK@ §3+ GD +a ˜ ¼ ˜ 9'— -Lu 7 öF >| 0 È Aê X ¯+X é ? úG}5ž é # :G- >- } -Lu#q>|,´ k#qD +a ˜ × ñ-(l È"4ÿ'Ï ¹ k#qD +a ˜G}5ž - ,´5•5 1Ñ*6 ˆFJE÷L5B+ \ { ¼ È =4ÿ)AÝ-$ ÕG}5ž ¯+X \ × ñ Ä

1.1 RSR20-X-28L

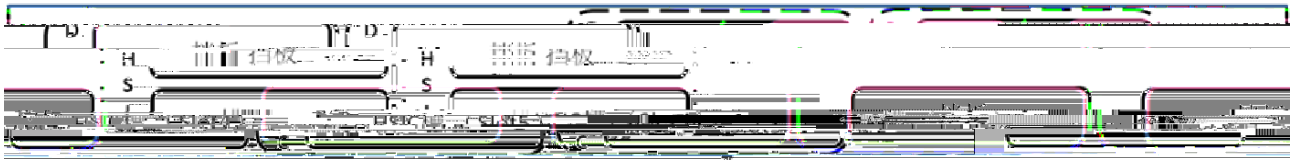
RSR20-X-28L ˜ s vD +a Ô ’ ¹ ˜ 4ï 0 ƒ j _K@ §5•5 6Ñ - 9L€ œ (X RSR ÄReliable multi-Services Router Å J J ÑD +a ˜,´ @ Ï *.p : à Ø *,´ ˜ à 0 Õ • × ñ È=½ 8 ¶ D +a ÃÔ ’ Ã ¹ ˜ Ã 3G/4G/5G 1y J/ý Õ • 5•5 Ä+X È < & X W7- Ã1 ö Ö ¼FO)· Ã M• W1y éM'F >| ˜M' w È X 0 ?,´ ÅCt93 $ µ j 1 JEé5H5•5 Ë 0 ƒ F@ ã é x È u 6% Cã Z • J Ñ ™ …,´ J s F Ä+XM0"r ¼C» ï È jH =½ Ã o Ì F 1 J Ò g Ë ¶] ? » 6 _ j ´ ~ @ \ J J Ñ Õ •,´*6 #F9 Ä

RSR20-X-28L ˜ s vD +a Ô ’ ¹ ˜ 4ï 0 ƒ jG÷+XK@ §8 k. Aö × s,´ RGOS ý Œ3+5 È˜M'5 ¯ VCPU ÈREF ÈX-Flow 1y C Y ° _ È AñD +a ˜ 0 _ J/ý J Ñ > ÈEœ W7- = ¡ ý × µ5ž(æ 1Lb&› É Ï7- È § 7 ¼ ´,´ Ç#qGÿ k +7- Ë × ˜3+ G × ñ Ë ¶ ± ¦ ` ü,´EŸ &(© W È _ 1 MPLS ÃVPN Ã4ô Ý ÃIPv6 ÃVoIP ÃNAT ÃMVRF 1y J/ý Ä+X ° _ È ú ` ü,´ 7 - é x ú QOS/HQOS (© WÈ N« …) C] EŸ & License F J Ñ ¯ ‘ È 0 WL€ Ö8²-1+X g ÅCt Ä

RSR20-X-28L ˜ s vD +a Ô ’ ¹ ˜ 4ï 0 ƒ j ˜3+ G _ 1 Ô#q /-$#q+e$À Ç ‰ È ± W w ¶Aî 7,´ M• W Ä

RSR20-X-28L ˜ s vD +a Ô ’ ¹ ˜ 4ï 0 ƒ j _ 1Aî 7<Š F Ã ¯ 5•1 6Š 8 Ã IDA ÃITO 1y ±1° ¯ 5•@ ã é x(© W È 8$ Ë ¾ j+X g ƒFP1° …Q x,´5•5 Ä

RSR20-X-28L ˜ s vD +a Ô ’ ¹ ˜ 4ï 0 ƒ j Ë+e$À ‘ _ 1 È+X g i ž J ÑM0"r&¥#kF9G} Ä



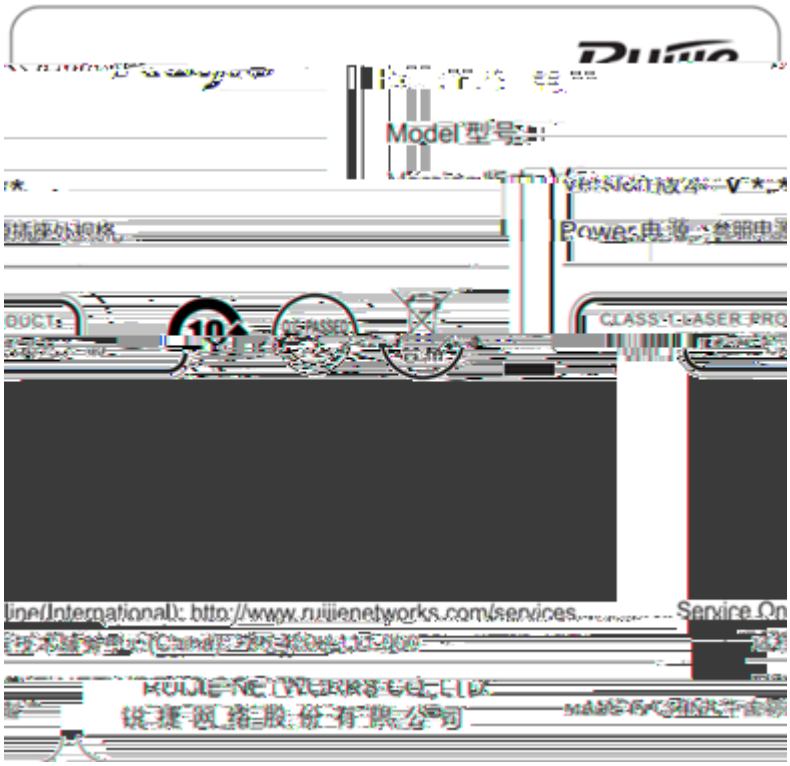
	4 -	5 -	_ 1'
RG-PA60			

ª p 6 P e 7 2 `+k$Æ — ´4 3 = 5 3 µ ¸ e 7'#

P á ? d

N©-	RSR20-X-28L
5j-1G}5ž	1 Z Console/AUX =+X È 1 Z USB È 1 Z FUNC J Ï7- 9K^ È 24 Z 10M/100M/1000M Z Ô ’ È 4 Z 1000M/100M/10M 9 r Z5• (¦] 2 Z =+X j 1000M/100M SFP y Å
HSIC ‘ -	4 Ä _ 1 2 Z +e$À ‘ Ä 4 - Ã 5 - È ¦ ‰ -N´+‰ Å Å
4*6 ˜	64 } J hQ W7-5•5 4*6 ˜

BOOT ROM	8MB
ž NAND FLASH	256MB



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„ Õ • ö Ö ¼ 4*67- Ë

¤ j _ 1 4 Z HSIC Q FO ™ … J Ñ - È * F 24 Z ˜ s v Ô ’ È 4 Z 1000M/100M/10M 9 r Z5• (¦] 2 Z =+X j 1000M/100M SFP y Å × Ë 1 Z FUNC J Ï7- 9K^ È+X gFJE÷B J Ï7- 9K^ é ï Î)à RGOS ý Œ3+5 0K^ w4× Ä Ë 1 Z USB Õ È+X ¾+X g ˆG}5ž Ÿ × _] ? » 6 _ j ´ ~ @ \ J J Ñ Õ •5•5 ,´*6 #F9 Ä

„ M• W

G÷+X 7 -] ó ° _ È W W Q 5•5 M• W × Ë J/ý ’ ?,´ 7 - È Añ)Q M• W5•5 ,´M0"r Ä

„ ¬ é W

8Ÿ -,´ ¬ é W È ˜M’ ¬ é ¦ 5•5 Aî 7 ² vAî 7 Ä

„ +e$À

FJE÷F9+XQ ñCX+e$À È Añ ¶#š#¼ ÃE÷ » Ã ~ » ÃE÷#q1y)àB‘7- O>ÛLb Ô ÈEÃ *0c Ê Ã M• WQ È ¦ _ 1-Ü & Ý+e Ô Ä

_ 1 7 - Ç ‰+e$À Ä

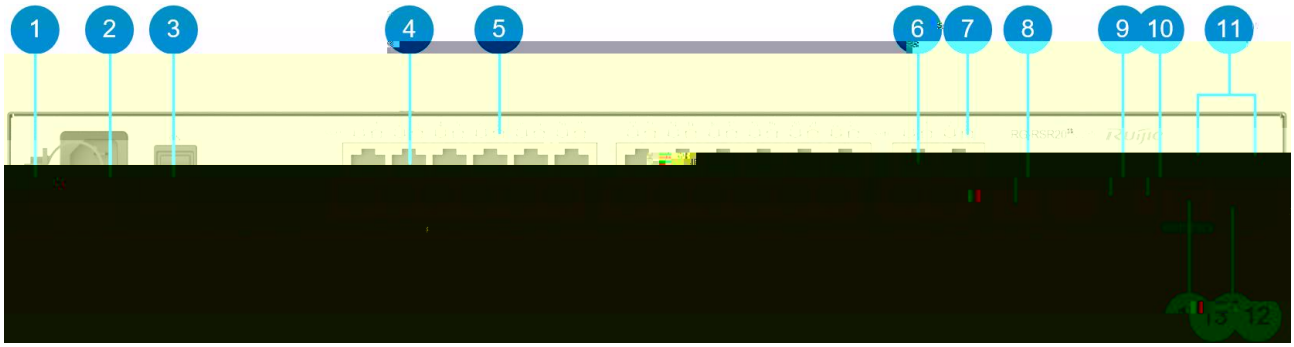
„ F »5 ´

G÷+X •;m+e.ñEÀ 4,´ 1U j1á È7- ¹5ž X j æ : È F-$ Õ n X |M’ : È š Ã ÇM7 Ã ÇQ ~$Y Ã Ç+e.ñEÀ 4 W7- - È Œ 0c Ê M• Ä

„ FJE÷AÔAñ

FJE÷ Ÿ × JG +e Aî 7 •5•#{B Ä

ø „ Â



# Gú Ö	1 Ö+e$À4ï •4ï ‘ “ ¹>õ „ 2 ÖEÃ •+e$À Õ 3 Ö+e$À 0 £ 4 Ö24 Z 10M/100M/1000M Z Ô ’ ÄGE1/0~GE1/23 1 Å 5 Ö24 Z Z Ô ’ (æ 1 7/j&Ÿ 6 Ö4 Z 10/100/1000M 9 r Z5•+e (GE0/0~GE0/3 1) 7 Ö4 Z 9 r Z+e 7/j&Ÿ	8 Ö2 Z SFP y Ä > ¦] 2 Z s v Z+e =+X Å 9 Ö2 Z SFP y 7/j&Ÿ 10 ÖUSB Aî 7 - 11 Ö Œ 7/j&Ÿ Ä þ ` # Í!Q j Ö USB Aî 7(æ 1 7/j&Ÿ È PWR_BAK 7+X+e$À(æ 1 7/j&Ÿ ÈPWR Œ+e$À(æ 1 7/j&Ÿ È SYS .œ &3+5 F >|(æ 1 7/j&Ÿ Å 12 ÖFUNC J Ï7- 9K^ 13 ÖConsole/AUX =+X

„ Â Ce

7/j&Ÿ	!“ hF >| & [y

SFP LINK/ACT 7/j&Ÿ	SFP LINK/ACT 7/j&Ÿ : &• Ö1 "Ñ 9 Link up × Tô8¢ h Þ Ö1 " *0û 100M Link up × Tô8¢L &ñ Ö1 100M Link up , D 9 ž PEÃ × 5/8¢ h Þ Ö1 " *0û 1000 Link up × 5/8¢L &ñ Ö1 1000M Link up D 9 ž PEÃ ×
GE +e 7/j&Ÿ	GE +e 7/j&Ÿ Ö &• Ö1 "Ñ 9 Link up × Tô8¢ h Þ Ö1 " *0û 10/100M Link up × Tô&ŸL &ñ Ö1 10/100M Link up , D 9 ž PEÃ × 5/8¢ h Þ Ö1 " *0û 1000 Link up × 5/8¢L &ñ Ö1 1000M Link up D 9 ž PEÃ ×

„ Â

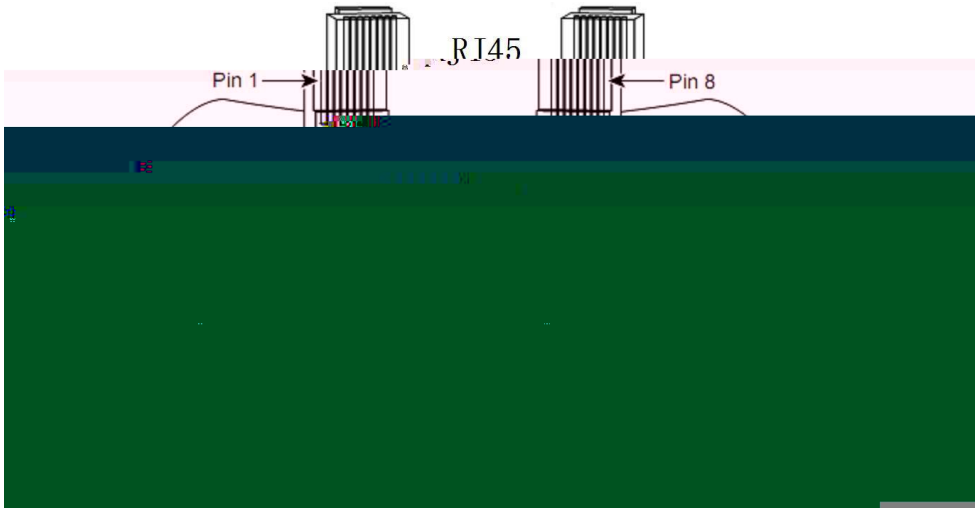
Õ 7 ö	EIA/TIA-RS232
Õ &	RJ45
FO)·	_ 1 9600~115200bps ,´# (©)· È G}NÁ&é 9

ƒAî 71 _ 1 MDI/MDI-X 8 F2 Ä & È ¯+X-$FJ5•4ï F Ô ù5•4ï,¶ È \ j _ 1 MDI/MID-X Ä

Ä63<• ` Ò g 9 7- J8 f4ï56 p Lt :F Õ é ? ú 'B$ > Å

Lt Ö

² . È 6 RJ45 = V ‘ “,´ 0M’!“)8 ! È þ ` # '4ï5F ' Í!Q j 1 ` 8 Ä



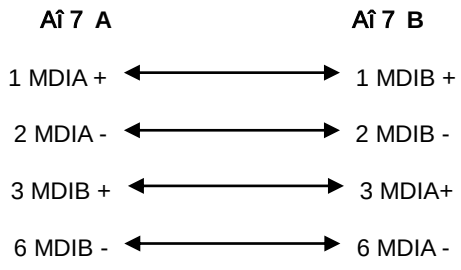
; _ 1000BASE-T &,´ E7J ' Ê y Ö

Pin	MDI Q ?	MDI-X Q ?
1	Media Dependent Interface A+	Media Dependent Interface B+
2	Media Dependent Interface A-	Media Dependent Interface B-
3	Media Dependent Interface B+	Media Dependent Interface A+
4	Media Dependent Interface C+	Media Dependent Interface D+
5	Media Dependent Interface C-	Media Dependent Interface D-
6	Media Dependent Interface B-	Media Dependent Interface A-
7	Media Dependent Interface D+	Media Dependent Interface C+
8	Media Dependent Interface D-	Media Dependent Interface C-

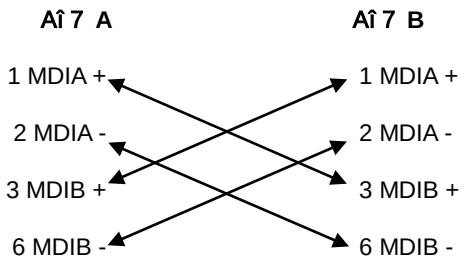
1000BASE-T 1 +X 4)4ïF >| ž,´ PEÃ ÈM0?± 6 p 9,´ 4)4ïF Õ : Ä 1000BASE-T 1 p+X `,´ ü5 4ï,´F Õ ² . p/j Ö

1000BASE-T) ü5 4ï/j ? .

-$F 4ï



Ô ùF 4ï



4 MDIC +	4 MDID+	4 MDIC +	4 MDIC +
5 MDIC -	5 MDID-	5 MDIC -	5 MDIC -
7 MDID +	7 MDIC+	7 MDID +	7 MDID +
8 MDID -	8 MDIC-	8 MDID -	8 MDID -

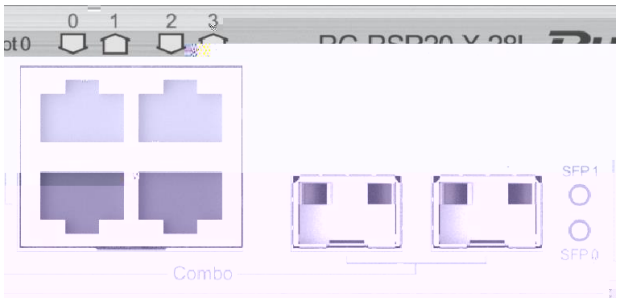
100BASE-TX/10BASE-T E7J ' Ê y

Pin	MDI Q ?	MDI-X Q ?
1	Output Transmit Data+	Input Receive Data+
2	Output Transmit Data-	Input Receive Data-
3	Input Receive Data+	Output Transmit Data+
6	Input Receive Data-	Output Transmit Data-
4 Ã5 Ã7 Ã8	Not Used	Not Used

; _ 100BASE-TX/10BASE-T & >|,´-$F ü5 4ï ¼ Ô ù ü5 4ï6„ Õ é ? Ö

100BASE-TX/10BASE-T ü5 4ï6„ Õ é ?

-$F 4ï		Ô ùF 4ï	
Aî 7 A	**Aî 7 B**	**Aî 7 A**	**Aî 7 B**
1 OTD +	1 IRD +	1 OTD +	1OTD +
2 OTD -	2 IRD -	2 241.01 15 0 g [( )] BT 1 0 0 1 250.61 3hD 234/	



+e LINK/ACT 7/j&Ÿ Ö

&• Ö1 "Ñ 9 Link up ×Tô8¢ h Þ Ö1 " *0û 10/100M Link up ×Tô&ŸL &ñ Ö1 10/100M Link up D 9 ž PEÃ ×5/8¢ h Þ Ö>˜/j1 " *0û 1000 Link up ×5/8¢L &ñ Ö>˜/j1 1000M Link up D 9 ž PEÃ Ä

y LINK/ACT 7/j&Ÿ Ö

&• Ö1 "Ñ 9 Link up ×Tô8¢ h Þ Ö1 " *0û 100M Link up ×Tô8¢L &ñ Ö1 100M Link up D 9 ž PEÃ ×5/8¢ h Þ Ö >˜/j1 " *0û 1000 Link up ×5/8¢L &ñ Ö>˜/j1 1000M Link up D 9 ž PEÃ Ä

± J4ì

y Õ G÷+X SFP ÄSmall Form-Factor Pluggable È ? 1>õ Å Q ‡ È+X g i žM0?±F9+X y Q ‡ Ä

_ 1 ; /ý y Õ Q ‡ È+X g i ž8 !,´M0?±F9C] Ö

+X SFP Q ‡	s v y Q ‡ Ö Mini-GBIC-SX Ö … 1000BASE-SX mini GBIC Eœ ’ Q ‡ ÄLC Õ Å × Mini-GBIC-LX Ö … 1000BASE-LX mini GBIC Eœ ’ Q ‡ ÄLC Õ Å × Mini-GBIC-LH40 Ö … 1000BASE-LH mini GBIC Eœ ’ Q ‡ ÄLC Õ Å È 40km × Mini-GBIC-ZX50 Ö … 1000BASE-ZX mini GBIC Eœ ’ Q ‡ ÄLC Õ Å È 50km × Mini-GBIC-ZX80 Ö … 1000BASE-ZX mini GBIC Eœ ’ Q ‡ ÄLC Õ Å È 80km

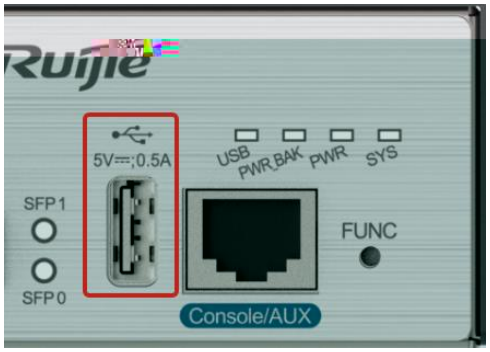
F9 PEÃ ûCX(© W ² ; Ö

5•5 ûCX ¼ 0 W PEÃD /ë	1000BASE-SX Ö# K¯850nm È 62.5/125um J Q y4Ô4ï,´ 0 W PEÃD /ë j 220m × 50/125um J Q y4Ô4ï,´ 0 W PEÃD /ë j 500m × 1000BASE-LX Ö# K¯1310nm È 62.5/125um J Q y4Ô4ï,´ 0 W PEÃD /ë j 550m × 50/125um J Q y4Ô4ï,´ 0 W PEÃD /ë j 550m × 9/125um … Q y4Ô4ï,´ 0 W PEÃD /ë j 10Km × 1000BASE-LH Ö# K¯1310nm È 9/125um … Q y4Ô4ï,´ 0 W PEÃD /ë j 40Km × 1000BASE-ZX Ö# K¯1550nm È 9/125um … Qy4Ô4ï,´ 0 W PEÃD /ë j 50Km ¼80Km T/ý ×

1.2.4 Â É USB L

± Ø O Ce

USB Õ F?ò .



USB (æ 1 7/j&Ÿ Ö K¯&• È U - F USB Aî 7 ×5/8¢ h Þ È U - F USB Aî 7 M û F ¼ @ È D ž Ô Â ×5/8¢L &ñ È USB Õ 9 ž Ô Â ×4Ò8¢ h Þ È U - F USB Aî 7 Œ 2 h Ä

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RSR20-X-28L ¯E- * F 0 Z USB Õ Ä+X g FJE÷B Õ • Î)àD +a ˜,´ þ USB Aî 7GüM'B+ G}5ž È F65 ˆG}5ž ` USB Aî 7 ƒ] Ä

7 7	7 7 ò
Õ 7 ö	