HEIGHT Pro Multi-band User Manual

Contents
1. Package Contents
2. Introduction
2.1. Air Unit Ports4
2.2. Air Unit LEDs & Button5
2.3. Ground Unit Ports5
2.4. Ground Unit LEDs & Button6
2.5. Setting up Air Unit7
2.6. Setting up Ground Unit
3. Web-page Management
3.1. Manage Air Unit
3.2. Manage Ground Unit14

1. Package Contents

Air unit & Ground Unit



Accessories

Air antenna x 2	
Feed cable x 2	
Ground antenna x 2	
Feed cable x 2	
Power cable x2	
Serial cable(Air Unit) x 2	
Serial cable(Ground Unit) x 2	
RC cable(Air Unit) x 2	
RC cable(Ground Unit) x 2	
RJ45 cable x 2	

2. Introduction

2.1. Air Unit Ports







- ① Power input (DC12V, 3S battery).
- 2 Ethernet video input from a camera, and web-page management interface.
- ③ Serial(TTL) port for telemetry.
- ④ Serial(TTL) port for telemetry.
- ⑤ S.Bus port connected to a flight controller.
- 6 S.Bus port connected to a flight controller.
- ⑦ Type-C USB port reserved.
- 8 PPM port connected to a flight controller.
- (9) MMCX connector for antenna/feed cable.
- 10 MMCX connector for antenna/feed cable.

2.2. Air Unit LEDs & Button



① Bind button: press-and-hold till LED1&LED2 are flashing, it's bound already before factory delivery.

- 2 It's off when radio link established.
- ③ It's off when radio link established.
- ④ Solid on in orange: 100Mbps Ethernet physical link connected.
- (5) Flickering in green: when there's data transmission.

2.3. Ground Unit Ports







- ① Power input (DC12V, 3S battery).
- 2 Ethernet video output to a laptop/PC, and web-page management interface.
- ③ Serial(TTL) port for telemetry.
- ④ Serial(TTL) port for telemetry.
- (5) S.Bus port connected to a S.Bus receiver.
- 6 S.Bus port connected to a S.Bus receiver.
- ⑦ Type-C USB port reserved.
- 8 PPM port connected to a flight controller.
- (9) MMCX connector for antenna/feed cable.
- 10 MMCX connector for antenna/feed cable.

2.4. Ground Unit LEDs & Button



① Bind button: press-and-hold till LED1&LED2 are flashing, it's bound already before factory delivery.

- 2 It's solid on in orange when radio link established.
- ③ It's solid on in green when radio link established.
- ④ Solid on in orange: 100Mbps Ethernet physical link connected.
- (5) Flickering in green: when there's data transmission.

2.5. Setting up Air Unit





- 1. Connect antennas to RF ports of the air unit.
- 2. Connect camera to Ethernet port of the air unit.
- 3. Connect the PPM/S.bus port of the flight controller to the RC port of the air unit.
- 4. Connect the flight controller telemetry port to the serial port of the air unit.
- 5. Connect a 12V DC power to the power port of the air unit and turn on the power.

2.6. Setting up Ground Unit





- 1. Connect antennas to RF ports of the ground unit.
- 2. Connect the remote controller's PPM/S.bus output to the RC port of the ground unit.
- Connect the USB port of GCS/PC to the serial port of the ground unit with Serial-USB cable.
- 4. Connect Ethernet output port of ground unit to the GCS/PC.
- 5. Connect a 12V DC power to the power port of the ground unit.

3. Web-page Management

HEIGHTPro Multi-band has web-page management interface. Directly connect PC to air unit/ground unit by Ethernet cable, set PC IP address as 192.168.199.33/24, and visit 192.168.199.18 (air unit)/192.168.199.16 (ground unit) through web-page.

3.1. Manage Air Unit

Status→Baseband status, there's detailed real-time information like RSSI, SNR, TxPower, LDPC stats, telemetry stats, etc.

Status Config Upload BaseBand Status Device Information ALdcPass 16926 ALstrain 4 ARSSI0	Product Model: Wireless			Software
Status Config Upload BaseBand Status BaseBand Status BaseBand Status Device Information ALdpCPas 16826 A-LdpCPas 16826 A-Astatus A-LdpCPas 16826 A-Astatus A-Astatus 6 A-Star 14 A-RSSI0 -8 A-RSV200 3 A-RSV200 -3 -4 A-RSV201 -3 A-RSV200 -3 -4 -4 -4 A-RSV201 -3 -3 -4 -4 A-RSV201 -3 -3 -4 -4 -4 A-RSV201 -3 -3 -4	Wireless	5		
BaseBand Status Device Information A-LdpCPail A-LdpCPail 6 A-Stir 14 A-RSSI0 -8 A-RSV20 -3 A-RSV21 -3 A-RSV20 -3 A-RSV21 -3 A-RSV21 -3 A-RSV220 -3 A-RSV21 -3 A-RSV21 -3 A-RSV21 -3 A-RSV21 -3 BaidStatus truck A-LinkStatus truck A-LinkStatus bind Dirtance 0 VU-RectByte 0 UV-RectByte 0 UV-	Status	Config U	pload	
BaseBand Status Device Information A:LdpcPais 16826 A:LdpcPais 16826 A:LdpcPais A:Active 14 A:RssT A:Seri 14 A:RssT A:RsS11 -9 -3 A:RsVga0 -3 -3 A:RsVga1 -3 -3 A:TxPover 27 A:LinkStatus track A:LinkStatus track A:LinkStatus track A:LinkStatus track A:LinkStatus bind Distance 0 MCS BPSK 2_2(.77Mps) U1-RecvByte 0 U2-SecdByte 0 U2-SecdByte 0 U2-SecdByte 0 U3-SecdByte 0 U3-SecdByte 0 U3-SecdByte 0 U3-SecdByte 0 U2-SecdByte 0 U3-SecdByte 0 U3-SecdByte 0 U2-SecdByte 0	BaseBand Status			
Al.LapeFasi 1682.6 Al.LapeFasi 6 A-Stri 14 A-RSS10 -8 A-RSS11 -9 A-RSVga1 -3 A-ReVvga1 -3 A-TaPower 27 A-LinKQuatity 100% A-TPCNewer 27 A-LinKQuatity 100% A-PPCATemp 35 A-DD2051Temp 28 A-CurrentAnt auto-H2 Bind Status brind Distance 0 MCS BFSK_2 3(27Mbps) UL-RectTyte 0 U2-SendByte 0 U2-SendByte 0 gburtXCatt 0 gburt	Device Information	BaseB	and Status	
A-LdopFail 6 A-Ser 14 A-RSS10 -8 A-RSS11 -9 A-RSVga0 -3 A-RAVga1 -3 A-Ravba0 track A-Instratus track A-Linstratus track A-Linstratus track A-Linstratus bind Distance 0 U.ReceByte 0 U.ReceByte 0 U.SendByte 0 sbusTxCnt 0 sbusTxCnt 0 CurXFreq 2320 CurXFreq 2320		A-LdpcPass	16826	_
A-Sar 14 A-RSSI0 -8 A-RSSI1 -9 A-RSVga0 -3 A-RAVga1 -3 A-TaPower 27 A-LinkStams track A-LinkStams track A-LinkStams track A-ArsPower 27 A-LinkStams track A-LinkStams track A-LinkStams track A-LinkStams track A-LinkStams bind Bind Statis bind Distance 0 U1-RectByte 0 U1-SendByte 0 U2-SendByte 0 U2-SendByte 0 sbusTxCnt 0 pmInXctt 0 CurfxTreq 2320 CurfxTreq 2320		A-LdpcFail	б	
A-RSS10 -8 A-RSS11 -9 A-RSVga0 -3 A-RVVga1 -3 A-RVPG 27 A-LinkQuality 100% A-LinkQuality 100% A-LinkQuality 100% A-ADP301Temp 28 A-CurrentAnt auto-rf2 Bind Status bind Distance 0 MCS BPSK_23(2.77Mps) U1-Rect/Byte 0 U2-Rect/Byte 0 U2-Rect/Byte 0 U2-Rect/Byte 0 u5uuTxCnt 0 u5uuTxCnt 0 pmTxCtt 0 Qu'TxFreq 2320 CurfxFreq 2320 CurfxFreq 2320		A-Snr	14	
A.RSS11 -9 A.RsVga0 -3 A.RsVga1 -3 A.TsPower 27 A.LinkStams track A.LinkStams bind Distance 0 MCS BPSK_2 3(2.77Mps) U1.RecvByte 0 U1.SeedByte 0 U2.SeedByte 0 SubaTSChT 0 sbusTSChT 0 ortTsTreq 2320 CurfxTreq 2320 CurfxTreq 2320		A-RSSI0	-8	
A.RsVga0 -3 A.RsVga1 -3 A.TsPower 27 A.LinkStatus track A.LinkQualty 100% A.PsPGATemp 35 A.DsD930Temp 28 A.CurrentAnt auto-r12 Bind Status bind Distance 0 M.RexTByte 0 U.RexTByte 0 U.SendByte 0 u.SendByte 0 sbus TsCatt 0 pmTxCatt 0 CurfxTreq 2320 CurfxTreq 2320 CurfxTreq 2320		A-RSSI1	-9	
A.RaViga1 -3 A.TaRover 27 A.LinkStatas track A.LinkQuality 100% A.PicATemp 35 A.AD9301Temp 28 A.CurrentAnt auto-rf2 Bind Status bind Distance 0 U.RecvByte 0 U.RecvByte 0 U.SendByte 0 sbusTXCht 0 sbusTXCht 0 ctrixTreq 2320 CurfxTreq 2320 CurfxTreq 2320		A-RxVga0	-3	
A.TaRover 27 A.LinkStanis track A.LinkStanis track A.LinkStanis track A.LinkStanis track A.HardStanis track A.AD2631Temp 35 A.AD2631Temp 28 A.CurrentAnt auto-rf2 Bind Statis bind Distance 0 MCS BPSK 2.3(2.77Mtps) U1RecvByte 0 U2-RecvByte 0 U3-SendByte 0 sbusTsCnt 0 sbusTsCnt 0 pmTxStrt 0 CurfxTreq 2320 CurfxTreq 2320 CurfxTreq 2320		A-RxVga1	-3	
A-LinkStatus track A-LinkQuality 100% A-FPGATemp 35 A-AD9301Temp 28 A-CurrentAnt auto-rf2 Bind Status bind Distance 0 MCS BPSK_2_3(2.77Mbps) U1-Rect/Byte 0 U2-Rect/Byte 0 U2-Rect/Byte 0 SubaTXCnEtx 0 pmTxCtt 0 curfxFreq 2320 CurfxFreq 2320 CurfxFreq 2320		A-TxPower	27	
A-LinkQuality 100% A-PErGATemp 35 A-AD9301Temp 28 A-CurentAnt auto-rf2 Bind Status bind Distance 0 MCS BPSK_2 3(2 77Mps) U1-RectByte 0 U2-SendByte 0 U2-SendByte 0 sbusTxCnt 0 sbusTxCnt 0 curXFreq 2320 CurXFreq 2320 CurXFreq 2320		A-LinkStatus	track	
A-FPGATemp 35 A-AD263T Temp 28 A-CurrentAnt auto-rf2 Bind Status bind Distance 0 MCS BPSK_23(2,77Mps) UL-RectByte 0 UL-SectByte 0 U2-SectByte 0 SubsTxCint 0 sbusTxCint 0 of CurfxFreq 2320 CurfxFreq 2320 CurfxFreq 2320 CurfxFreq 2320		A-LinkQuality	100%	
A-AD9301 Temp 28 A-CurrentAnt auto-rt2 Bind Status bind Distance 0 MCS BPSK_2_3(2.77Mps) U1-RecVByte 0 U2-SecUByte 0 U2-SecVByte 0 SbulTACat 0 sbulTACat 0 pmTxCatt 0 CurlXFreq 2320 CurlXFreq 2320 CurlXFreq 2320		A-FPGATemp	35	
A-CurrentAnt auto-rf2 Bind Status bind Distance 0 MCS BPSK_2.3(2.77M.tps) U1-Rect/Byte 0 U1-SendByte 0 U2-SendByte 0 U2-SendByte 0 SbusTxCnt 0 sbusTxCnt 0 CurfxTreq 2320 CurfxTreq 2320 CurfxTreq 2320		A-AD9361Temp	28	
Bind Status Bind Distance 0 MCS BPSK_2_3(2.77Mbps) U1-RectPyte 0 U2-Sec0Byte 0 U2-Sec0Byte 0 U2-Sec0Byte 0 U2-Sec0Byte 0 Sbuil%CntExt 0 ppmTxCnt 0 Cufx%req 2320 Cufx%req 2320		A-CurrentAnt	auto-rf2	
Distance 0 NCS BPSK_2_3(2.77Mps) U1-RectByte 0 U1-SendByte 0 U2-SendByte 0 U2-SendByte 0 sbusTxCat 0 sbusTxCat 0 curXFreq 2320 CurXFreq 2320 CurXFreq 2320		Bind Status	bind	
MCS BPSK_2.2(277Mtps) UI-RecvByte 0 UJ-SendByte 0 U2-RecvByte 0 U2-RecvByte 0 U2-RecvByte 0 SendByte 0 SbusTxCat 0 sbusTxCatt 0 CurTxFreq 2320 CurTxFreq 2320 CurBand Band+230-2400		Distance	0	
U1-RectByte 0 U1-SendByte 0 U2-RectByte 0 U2-SendByte 0 sbusTXCnt 0 sbusTXCnt 0 pmTXCnt 0 CurfXFreq 2320 CurfXFreq 2320 CurfXFreq 2320		MCS	BPSK_2_3(2.77Mbps)	
U1-SendByte 0 U2-SendByte 0 U3-SendByte 0 sbusTxCnt 0 sbusTxCntExt 0 CutTxTreg 2320 CutTxTreg 2320 CutTxTreg 2320		U1-RecvByte	0	
U2-kectByte 0 U2-SendByte 0 sbusTxCnt 0 sbusTxCnt 0 ppnTxCnt 0 CurfxFreq 2320 CurfxTreq 2320-///2000		U1-SendByte	0	
U2-SendByte 0 sbuilTxCit 0 pbuilTxCit 0 CullXPireq 2320 CullXPireq 2320 CullXPireq Band+2302-2400		U2-RecvByte	0	
stus IX.ttt 0 sbus TXCutExt 0 ppmTxCut 0 CutTxFreq 2320 CutRxFreq 2320 CutBand Band+230-2400		U2-SendByte	0	
sous xx.mtxx 0 ppmTxCut 0 CuTxFreq 2320 CuTxTreq 2320 CutBand Band+230-2400		sbusTxCnt	0	
ppm1X.mt 0 CurlXFreq 2220 CurlXFreq 2230 CurBand Band+2302-2400		sous IXCntExt	0	
Curkurreg 2.520 Curkurreg 2.320 Curband Band+2320-2400		ppm1xCm	0	
CurrXFreq 2320 CurBand Band4:2320-2400		CurixFreq	2320	
Curband Bandy, 2520-2400		CurRxFreq	2320 Banda 2320 2400	
		Curbano	Bario4.2520-2400	

Status \rightarrow Device information, there's information of SN, firmware version, bandwidth, and max range etc.



Config→Net settings, this is IP address of unit itself, it can be changed as per user's request.

192.168.199.18/config.html				
Product Model: Wireless				Software Version: 1.1
Wire	less			
Status	Config	Upload		
Net Setting	IS			
Radio Setting	js III 44	Net Settings	160 100 10	
Bind Setting	s Subnet	Mask 25	5 255 255 0	
System Settin	igs	set		

HEIGHT TECHNOLOGIES

Config→Radio settings, There are options of auto/antenna1/antenna2 for air antenna select, this will decide the RF power transmitting port/antenna. There are options of Band1/Band1-a/Band1-b/Band2/Band2-a/Band2-b/Band3/Band4 for band select, band select must keep the same as that of ground unit.

192.168.199.18/config.html			
Product Model: Wireless			Software Version: 1.1
Wireless			
Status	Config Upl	oad	
Net Settings			
Radio Settings	Radio S	Settings	
Bind Settings	Air Antenna Select	auto 🗸	
System Settings	S	et	
	Band S	settings	
	Band Select	Band4:2320-2400MH: 🗸	
	ScanFrequency1	2320	
	ScanFrequency2	2320	
	ScanFrequency3	2360	
	Scall requency4	2300 ot	
	5		

Config→Bind setting, bind process can be triggered by clicking bind instead of physical bind button.

192.168.199.18/0	config.html					
	Product Model: Wireless				Software Vers	tion: 1.1
	Wireless	S				
	Status	Config	Upload			
	Net Settings Radio Settings		Bind Settings			
	Bind Settings	Bind se	ttings	bind		
	System Settings					

Config→System settings, Restore unit to factory settings by "enable".



Upload \rightarrow Upload, browser and select file to be upgraded first, then click "send" to trigger the process.

192.168.199.18/upload.html			
Product Model: Wireless			Software Version: 1.1
Wireless			
Status	Config	Upload	
Upload			
	File	Choose File No file chosen	
	Titigitiss	send	

3.2. Manage Ground Unit

Status→Baseband status, there's detailed real-time information like RSSI, SNR, TxPower, LDPC stats, telemetry stats, etc.

wireles	S			
Status	Config	Uplo	oad	
BaseBand Status]			
Device Information		BaseBan	d Status	
	A-LdpcPass	134698	G-LdpcPass	489246
	A-LdpcFail	6	G-LdpcFail	83
	A-Snr	14	G-Snr	15
	A-RSSI0	-9	G-RSSI0	-10
	A-RSSI1	-9	G-RSSI1	-9
	A-RxVga0	-3	G-RxVga0	-3
	A-RxVga1	-3	G-RxVga1	-3
	A-TxPower	27	G-TxPower	27
	A-LinkStatus	track	G-LinkStatus	track
	A-LinkQuality	100%	G-LinkQuality	100%
	A-FPGAlemp	41	G-FPGAlemp	50
	A-AD93011emp	33	G-AD93011emp	45
	A-CurrentAnt downlinkDateBate	auto-ri2	G-CurrentAnt	auto-ri2
	Dind Status	UKOS	UII ResuPres	UKOS
	Dind Status	oma	UI-Recybyte	0
	Distance	U	UI-SendByte	0
	MCS	DBCV 5 6/2 22Manne)	U2-Recybyte	0
	OurTyFree	2320	ehueRxCot	0
	CurRyFree	2320	ohuoRvCntEvt	0
	CurBand	Band4:2320-2400	nomRxCnt	0

Status \rightarrow Device information, there's information of SN, firmware version, bandwidth and max range etc.

192.168.199.15

Config \rightarrow Net settings, there are IP address of unit itself, telemetry destination IP address and UDP ports, all of these parameters can be changed as per user request.

192.168.199.16/config.html			
Product Model: Wireless			Software Version: 1.1
vvireies	S S		
Status	Config U	Jpload	
Net Settings	7	*	
Radio Settings	Ne	tSettings	
Bind Settings	IP Address	192.168.199.16	
System Settings	Subnet Mask	255.255.255.0	
<u>_</u>	Maylink LIDP Port	15000	
	Mavlink UDP Port Ext	15001	
		set	

Config→Radio settings, there are hop, frequency, antenna selection, and band selection can be set. When hop is auto, user do not need to/cannot set frequency, system dynamically selects the best frequency to use by itself, in other words, when hop is manual, user can set frequency manually. There are options of auto/antenna1/antenna2 for air/ground antenna select, this will decide the RF power transmitting port/antenna. There are options of Band1/Band1-a/Band1-b/Band2/Band2a/Band2-b/Band3/Band4 for band select, band select must keep the same as that of air unit. Hop/Frequency/Work region/Air antenna select only can be changed when radio link between air unit and ground unit is securely established.

100.139.10/comig.num				
Product Model: Wireless				Software Ver
Wireless				
Status	Config	Upload		
Net Settings	R	adio Settings		
Radio Settings	Нор	auto	~	
Bind Settings	Frequency		2320	
System Settings	Air Antenna Select	auto	~	
	Ground Antenna Select	auto	~	
		set		
	B	and Settings		
	Band Select	Band4:232	20-2400MH; 🗸	
	ScanFrequency1		2320	
	ScanFrequency2		2320	
	ScanFrequency3		2360	
	ScanFrequency4		2360	

Config→Bind setting, bind process can be triggered by clicking bind instead of physical bind button.

192.168.199.16/config.html				
Product Model: Wireless				Software Version: 1.1
Wirolog				
wireles	>>			
Status	Config	Upload	_	
Radio Settings		Bind Settings		
Bind Settings	Bind settings	bind		
System Settings				

Config \rightarrow System settings, baud rate of U1/U2 two serial ports can be set independently. QAM mode can be set as fixed options or adaptive. When it is set as adaptive, unit will dynamically change modulation scheme based on real-time signal quality. Baud rate and QAM mode can be set only when radio link established between air unit and ground unit.

92.168.199.16/config.html					
Product Model: Wireless					Software Version:
14/2					
Wireless					
Status	Config	Uploa	ad		
Net Settings		*			
Radio Settings		System Se	ttings		
Bind Settings	Com Baudrat	te	115200	~	
System Settings	Com Baudrate	EXt	115200 Adaptive	~	
	Restore default se	ettinas	disable	~	
			UISADIC	•	
		301			

Upload \rightarrow Upload, browser and select file to be upgraded first, then click "send" to trigger the process.

2.168.199.16/upload.html			
Product Model: Wireless			Software Version: 1.1
Wireless	5		
Status	Config	Upload	
Upload			
	File	Choose File No file chosen	
	Piogress	send	