Overall Protocol and Device Behavior Description

iPad and Android apps will connect to devices (Treadmill etc.) via Bluetooth. RFCOMM/SPP is used as a transport protocol. (Baud rate: 57600bps and data format: 8, N, 1). Initialization includes pairing of devices. After pairing devices are ready to go.

Every command must contain exactly 5 bytes. First byte is a command ID, other content depends on a command and described below. If command contains less then 5 bytes, the rest is filled with zeroes.

Every response must contain exactly 6 bytes. First byte is echo command ID, and the second byte is always a result code. Other 4 bytes depend on the command. Result code can be:

- 0xAA — OK
- 0xFF — FAIL
- 0xEE — WRONG PARAMETER (corresponding “set” command parameter is out of possible device range)

Timeout is 5 seconds. If we did not get any response in 0.5 seconds, we will try to send command again. If failed and over 5 seconds — show alert to user and stop the program.

Overall command sending logic is (FAIL is showing alert and stopping current program):

- Sending command
  - If failed — try to check engagement status.
    - If it's "disengaged", then engage external control
    - If failed — try to engage external control again
      - If failed — FAIL

- Try to send command again
  - If failed — FAIL

Device Command Sequences

- Connecting to device and initializing
  - User first pair the mobile device to equipment
  - Then we execute the "Engage External Control mode" command
  - Then we execute the "Device Identification" command
  - Then we execute the "Get Firmware Version" command
  - Then we execute the "Reset all Counters" command
- Starting workout
  - We execute the "Reset all Counters" command
  - For standard program we set up the speed/incline/resistance for the first segment, for Manual mode we set up some default initial settings.
  - Then we execute the "Start Motor" command.
- Pausing workout
  - We execute the "Pause Motor" command. Equipment stores speed/incline/resistance itself.
- Resuming workout
  - We execute the "Start Motor" command. Equipment restores speed/incline/resistance itself.
- Stopping workout
  - We set up speed/incline/resistance to 0.
  - Then we execute the "Pause Motor" command.

- Changing speed
  - We execute "Set Treadbelt Speed" command with the appropriate parameters
  - We execute "Get Variable" to get the target speed command
- Changing incline and resistance
  - Exactly like changing speed
- Application went to background
  - Continue sending “get commands” for 5 seconds, and then stop sending all commands.
- Application terminated
  - Stop sending all commands.

Binary Command Reference

Comments:

- 0xAA in response means “OK” (or “YES” if command returns result, “Command Accepted”, if there is no data in the result)
- 0xFF in response means “Fault” (or “NO”, if command is intended to return a result)
- **0xEE (only in some of “set“ commands) indicates that argument that was passed to a system was out of possible range.**

Command	Code	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Device Identification	0x02	0x00 | 0x00 | 0x00 | 0x00	0x02	0xAA 0xFF	Device ID | Model ID| 0x00 | 0x00 (See Appendix A)	Required after external control mode. Specifically, this command must be issued when the tablet app is started after Bluetooth pairing has occurred. The application should then configure itself for the correct device.
Engage External Control mode	0x04	0x00 | 0x00 | 0x00 | 0x00	0x04	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	This Command must be issued after the app has started and the device has been paired. It should get back an acknowledgment (0xAA) that External control is engaged. ~~The micro controller should then disable user program selection from the manufacturer's console. At this time the readout on the equipment should only display speed and incline values.~~ All data Speed, distance, calories, pulse, incline level must be calculated by the equipment and

						sent to the device for display.
Command	**Code**	**Request (byte 1 | byte 2 | byte 3 | byte 4)**	**Echo Code**	**Possible Response Codes**	**Response (byte1 | byte2 | etc.)**	**Description**
Disengage External Control mode	0x05	0x00 | 0x00 | 0x00 | 0x00	0x05	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	This Command must set equipment back into Equipment computer mode (Treadmill, elliptical etc..), and disable the Bluetooth module.
Speed Handrail Fast Key Function Control	0x06	**Status** | 0x00 | 0x00 | 0x00	0x06	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Status=AA means Fast key function enable. Status=FF means Fast key function disenable.
Incline Handrail Fast Key Function Control	0x07	**Status** | 0x00 | 0x00 | 0x00	0x07	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Status=AA means Fast key function enable. Status=FF means Fast key function disenable.
Engagement Status	0x08	0x00 | 0x00 | 0x00 | 0x00	0x08	0xAA 0xFF	**Status** | 0x00 | 0x00 | 0x00	Status=AA means external control engaged. Status=FF means external control DISengaged.
Sleep Command	0x09	**Value** | 0x00 | 0x00 | 0x00	0x09	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Value = 0x01 ~ 0xFF, unit sec Default 80 sec, if value = 0x00 or 0x50.
Get Firmware Version (console)	0xC2	0x00 | 0x00 | 0x00 | 0x00	0xC2	0xAA 0xFF	Major | Minor | Patch | 0x00	This command lets you read the firmware version number. (Console)
Get Firmware	0xC3	0x00 | 0x00 | 0x00 | 0x00	0xC3	0xAA	Firmware Major | Firmware	This command lets you read the

Version (MCB)				0xFF	Minor | Hardware Major | Hardware Minor	firmware version number. (MCB)
Get Variable	**0xA1**	**Variable ID | 0x00 | 0x00 | 0x00 (See Appendix B)**	**0xA1**	**0xAA 0xFF**	**See Appendix D**	**This command lets you read a 16-bit variable from the Controller the requested variable is transmitted as two bytes.**
Set Treadbelt Speed	0xD0	Integral | Fractional | 0x00 | 0x00	0xD0	0xAA 0xFF 0xEE	0x00 | 0x00 | 0x00 | 0x00	Integral byte can be from 0x00 to 0xFF. Fractional part can be from 0x00 to 0x63. Maximum speed should be limited by "Max Possible Speed"
Set Incline	0xD2	Incline Level | 0x00 | 0x00 | 0x00 (See Appendix C)	0xD2	0xAA 0xFF 0xEE	0x00 | 0x00 | 0x00 | 0x00	In Treadmill: Values 0–50 represents actual Integral values of Incline. 51 means -1, 100 means -50. In Bike: Incline Level means Bike Level Level range 1 - 16

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Command	Code	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Set Resistance	0xD3	Major Byte | Minor Byte | 0x00 | 0x00 (See Appendix C)	0xD3	0xAA 0xFF 0xEE	0x00 | 0x00 | 0x00 | 0x00	Values 0–400 represents actual Integral values of Resistance. Example: 200Watt would be: 0x00 | 0xC8
Motor Pause	0xE0	0x00 | 0x00 | 0x00 | 0x00	0xE0	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	When pause mode is uninterrupted for 5 minutes or longer the external control will be disengaged automatically on the equipment.
Motor Start	0xE1	0x00 | 0x00 | 0x00 | 0x00	0xE1	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Start Command

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Command	Code	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Reset all Counters	0xE2	0x00 | 0x00 | 0x00 | 0x00	0xE2	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Calories, Distance and Time counters must be reset to zero on equipment.
Set User Weight	0xE4	Major Byte | Minor Byte | 0x00 | 0x00	0xE4	0xAA 0xFF 0xEE	0x00 | 0x00 | 0x00 | 0x00	Sets user weight. Data byte 1 and 2 should be COMBINED into a 2 byte Hex value. If 0x01 is sent for data byte 1, and 0x5E is sent for data byte 2, the combine hex value would be 0x015E, or 350lbs/kg. **Unit of user weight equals to unit of measure in use (variable ID: 0x81)**
Set User Age	0xE6	Age | 0x00 | 0x00 | 0x00	0xE6	0xAA 0xFF 0xEE	0x00 | 0x00 | 0x00 | 0x00	Sets user age. Data byte 1 represents age.
Forced To Start Incline	0xE7	Command| 0x00 | 0x00 | 0x00	0xE7	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	**For engineer mode used** Command: 0x00 – Incline Stop 0x01 – Incline force up 0x02 – Incline force down
Disengage Incline Err status	0xE8	0x00 | 0x00 | 0x00 | 0x00	0xE8	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	**For engineer mode used**
Set Unit of measure	0xE9	Unit| 0x00 | 0x00 | 0x00	0xE9	0xAA	0x00 | 0x00 | 0x00 | 0x00	Unit:

				0xFF		0xAA: Metric OxFF: Imperial
Set Level	0xEA	Value| 0x00 | 0x00 | 0x00	0xEA	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Value: 0x00: don't used. 0x01: Level1 And so on.
Set Sex	0xEB	Byte1| 0x00 | 0x00 | 0x00	0xEA	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Byte1: 0x00: Female 0x01: Male

Please refer to Appendix E for IHP workout commands.

Appendix A, Device IDs and Model IDs

Device IDs:

- Treadmill: 0x11
- Bike: 0x22

Model IDs:

Device Type	Device ID	Model ID	Model Name	Products
Treadmill	0x11	0x0a	TT-2	
	0x11	0x0b	TT-3	
	0x11	0x14	TR7000	
	0x11	0x15	TR8000	
	0x11	0x1e	DT	DT3, DT-5
Bike	0x22	0x0a	CR7000	C7000, R7000
	0x22	0x1e	DT	C3-DT
Elliptical	0x44			
(Reserve)				
Stepper	0x88			
(Reserve)				

Appendix B, Variable IDs

- Max Possible Speed 0x71
- Max Possible Resistance 0x73
- Max Possible Incline 0x75
- Min Possible Incline 0x76
- Unit of Measure: 0x81
- Treadbelt Speed / Bike real speed : 0x82
- Incline / Bike Level: 0x83
- Resistance (W): 0x84
- Distance traveled since reset: 0x85
- Current Heart Pulse Rate: 0x86
- Calories since reset: 0x87
- Steps 0x88
- Workout Time 0x89
- RPM 0x8A
- PACE 0x8B
- ~~Safety key Status: 0x90~~
- Equipment Status: 0x91
- Get Fitness Test Result (VO2): 0x92
- Get ADC Value 0x93
- Get Workout Status 0x94

- Get Workout Number 0x95
- Get Workout Duration Time 0x96
- Get Workout Warmup 0x97
- Get Workout Cooldown 0x98
- Get Target Heart Rate 0x99
- Get Workout Mode 0x9a
- Get Workout Level 0x9b
- Get Level 0x9c
- Get Sex 0x9d

Appendix C, Incline and Resistance Levels

For Incline values 0–50 represents actual Integral values of Incline. 51 means “-1”, 100 means “-50”.

For Resistance values 0–400 represents actual Integral values of Resistance. (Watts)

Appendix D. Get Variable Responses

Command	Variable ID	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Max Possible Speed	0x71		0xA1	0xAA 0xFF	Integral | Fractional | 0x00 | 0x00	Result shows maximum value of Treadbelt speed in "general" format, used for get/set motor speed commands. SetTreadbelt Speed command should return 0xEE if app is trying to set speed that exceeds MaxPossibleSpeed.
Max Possible Resistance	0x73		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | 0x00	Result shows maximum equipment resistance. SetResistance command should return 0xEE if app is trying to set resistance that exceeds MaxPossibleResistance.
Max Possible Incline	0x75		0xA1	0xAA 0xFF	Integral | 0x00 | 0x00 | 0x00	Result shows maximum equipment incline. SetIncline command should return 0xEE if app is trying to set incline that exceeds MaxPossibleIncline.
Min Possible Incline	0x76		0xA1	0xAA 0xFF	Integral | 0x00 | 0x00 | 0x00	Returns shows minimum equipment incline. SetIncline command should return 0xEE if app is trying to set incline below MinPossibleIncline.

Command	Variable ID	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Unit of measure	0x81		0xA1	0xAA 0xFF	0xAA | 0x00 | 0x00 | 0x00 for Metric 0xFF | 0x00 | 0x00 | 0x00 for Imperial	0xAA: Metric OXFF: Imperial
Treadbelt Speed / Bike real speed	0x82		0xA1	0xAA 0xFF	Integral | Fractional | **RPM Status**| 0x00	Exactly like setting speed. Integral byte can be from 0x00 to 0xFF. Fractional part can be from 0x00 to 0x63. Example, 0x12, 0x63, the speed would be "18.99" RPM Status = 0x00 == Stillness 0x01 == Turn
Incline / Bike level	0x83		0xA1	0xAA 0xFF	Value | 0x00 | 0x00 | 0x00	Values 0–50 represents actual Integral values of Incline. 51 means -1, 100 means -50.
Resistance	0x84		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | 0x00	Values 0–400 represents actual Integral values of Resistance. Example: 200Watt would be: 0x00 | 0xC8
Distance traveled since workout start	0x85		0xA1	0xAA 0xFF	Integral | Fractional | 0x00 | 0x00	First response byte one (0x00 (0)-0xff (255)): whole number 0x5 = (5 miles or Kilometers) Second response byte (0x00-0x63).

Command	Variable ID	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Current heart pulse rate	0x86		0xA1	0xAA 0xFF	Value | 0x00 | 0x00 | 0x00	0x00 (0)-0xFF (255). Maximum being 220 BPM anything above 210 should shut down the machine.
Calories burned since start of workout	0x87		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | 0x00	Example: 2000K calories would be: 0x07 | 0xD0
Steps	0x88		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | 0x00	Example: 2000 steps would be: 0x07 | 0xD0
Workout Time	0x89		0xA1	0xAA 0xFF	Hours / Minutes | Seconds | 0x00	Hours: 0x00 – 0x17 Minutes: 0x00 – 0x3B Seconds: 0x00 – 0x3B
RPM	0x8A		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | 0x00	Example: 60 RPM would be: 0x00 | 0x3C
PACE	0x8B		0xA1	0xAA 0xFF	Hours / Minutes | Seconds | 0x00	Hours: 0x00 – 0x17 Minutes: 0x00 – 0x3B Seconds: 0x00 – 0x3B
~~Safety Key Status~~	~~0x90~~		~~0xA1~~	~~0xAA 0xFF~~	~~0xAA / 0xFF | 0x00 | 0x00 | 0x00~~	~~0xAA — Key in Place,0xFF — Key is Missing.~~
Equipment Status	0x91		0xA1	0xAA 0xFF	**Value** | **Err_code**| 0x00 | 0x00	**Value** = 0x01 — STATUS_IDLING 0x03 — STATUS_RUN 0x05 — STATUS_PAUSE 0x09 – STATUS_EDIT 0X0A — STATUS_SAFE_KEY_LOSS

						0X0F – STATUS_ERROR **Err_code** = 0X00 – NO ERR 0X01 – DC1 0X02 – DC2 0X03 – DC3 0X04 – DC4 0X05 – DC5 0X06 – DC6 0X07 – DC7 0X08 – DC8 0X09 – DC9 0X11 – AC1 0X12 – AC2 0X13 – AC3 0X14 – AC4 0X15 – AC5 0X16 – AC6 0X17 – AC7 0X18 – AC8 0X19 – AC9 0X21 – E1 0X22 – E6 0X23 – E7 0X24 – E9 0X25 – E10 0X31 – UART 0x41 – DCV voltage overload 0x42 – DCV voltage overvolt. 0x43 – MV voltage overload. 0x44 – CMP current overcurr. 0x45 – DC bus Err. 0x46 – Short Circuit. 0x47 – Communication Fail.

Get Fitness Test Result (VO2)	0x92		0xA1	0xAA 0xFF	Integral | Fractional | 0x00 | 0x00	First response byte one (0x00 (0)-0xff (255)): whole number 0x5 = (5) Second response byte (0x00-0x63). For P23 used.
Get ADC Value	0x93		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | 0x00	**For engineer mode used** ADC Value range 0 ~ 4000 Example: 1000 would be: 0x03 | 0xE8
Get Workout Status	0x94		0xA1	0xAA 0xFF	Status | 0x00 | 0x00 | Byte4	Status: 0x00 – Warmup 0x01 – Cooldown 0x02 – Running 0x03 – End Byte4: Status 0x00: edit 0x01: enter
Get Workout Number	0x95		0xA1	0xAA 0xFF	Byte1 | 0x00| 0x00| Byte4	Byte1: Program Number See appendix F. Can not use 0x12, 0x13 Byte4: Status 0x00: edit 0x01: enter
Get Workout Duration Time	0x96		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | Byte4	Example: 500 secs would be: 0x01 | 0xF4 Max 65535 secs Byte4: Status

						0x00: edit 0x01: enter
Get Workout Warmup	0x97		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | Byte4	Example: 500 secs would be: 0x01 | 0xF4 Max 65535 secs Byte4: Status 0x00: edit 0x01: enter
Get Workout Cooldown	0x98		0xA1	0xAA 0xFF	Major Byte | Minor Byte | 0x00 | Byte4	Example: 500 secs would be: 0x01 | 0xF4 Max 65535 secs Byte4: Status 0x00: edit 0x01: enter
Get Target Heart Rate	0x99		0xA1	0xAA 0xFF	Byte1 | Byte2| 0x00| Byte4	Byte1: Heart Rate (Hi) Value. (Default used) Max value: 255 Byte2: Heart Rate (Low) Value. Max value: 255 Byte4: Status 0x00: edit 0x01: enter
Get Workout Mode	0x9a		0xA1	0xAA 0xFF	Byte1 | 0x00| 0x00| Byte4	Byte1: 0x00: don't used. 0x01: Incline mode 0x02: Speed mode. Byte4: Status 0x00: edit

						0x01: enter
Get Workout Level	0x9b		0xA1	0xAA 0xFF	Byte1 | 0x00 | 0x00 | Byte4	Byte1: Workout Level 0x01: Level1 And so on. Range (L1 ~ L3) Byte4: Status 0x00: edit 0x01: enter
Get Level	0x9c		0xA1	0xAA 0xFF	Byte1 | 0x00 | 0x00 | Byte4	Byte1: Workout Level 0x01: Level1 And so on.
Get Sex	0x9c		0xA1	0xAA 0xFF	Byte1 | 0x00 | 0x00 | Byte4	Byte1: 0x00: Female 0x01: Male

Appendix E. Workout Data

Command	Code	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Set Workout Date	0x60	Byte1 | Byte2 | Byte3 | 0x00	0x60	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Byte1: Workout Year-2000; 0xFF: if workout data does not exist Byte2: Workout Month; 0xFF: if workout data does not exist Byte3: Workout Day; 0xFF: if workout data does not exist
Set Workout	0x61	Byte1 | 0x00| 0x00| Byte4	0x61	0xAA	0x00 | 0x00 | 0x00 | 0x00	Byte1: Program Number

Number				0xFF 0xEE		See appendix F. Can not use 0x12, 0x13 Byte4: Status 0x00: edit 0x01: enter **Note:** **If program flow start the edit state in the program number setting, the program setting will go step by step. If program flow start the enter state in the program setting, the program setting will go final result.**
Set Workout Duration Time	0x62	Major Byte | Minor Byte | 0x00 | Byte4	0x62	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Example: 500 secs would be: 0x01 | 0xF4 Max 65535 secs Byte4: Status 0x00: edit **0x01: enter**
Set Workout Warmup	0x63	Major Byte | Minor Byte | 0x00 | Byte4	0x63	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Example: 500 secs would be: 0x01 | 0xF4 Max 65535 secs Byte4: Status 0x00: edit **0x01: enter**
Set Workout	0x64	Major Byte | Minor Byte | 0x00 |	0x64	0xAA	0x00 | 0x00 | 0x00 | 0x00	Example: 500 secs would be:

Cooldown		Byte4		0xFF		0x01 | 0xF4 Max 65535 secs Byte4: Status 0x00: edit **0x01: enter**

Command	Code	Request (byte 1 | byte 2 | byte 3 | byte 4)	Echo Code	Possible Response Codes	Response (byte1 | byte2 | etc.)	Description
Set Target Heart Rate	0x65	Byte1 | Byte2| 0x00| Byte4	0x68	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Byte1: Heart Rate (Hi) Value. (Default used) Max value: 255 Byte2: Heart Rate (Low) Value. Max value: 255 Byte4: Status 0x00: edit **0x01: enter**
Set Workout Mode	0x66	Byte1 | 0x00| 0x00| Byte4	0x69	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Byte1: 0x00: don't used. 0x01: Incline mode 0x02: Speed mode. Byte4: Status 0x00: edit **0x01: enter**
Set Workout Level	0x67	Byte1 | 0x00 | 0x00 | Byte4	0x66	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Byte1: Workout Level Range (L1 ~ L3) Byte4: Status 0x00: edit **0x01: enter**

Set Workout Audio Name	0x68	Byte1 | Byte2 | Byte3 | Byte4	0x67	0xAA 0xFF	0x00 | 0x00 | 0x00 | 0x00	Byte1: Sequential Number (copied from Mobile/Tablet's command). Byte2: Workout audio name character (Upper case, fill with 0 when end of name string). Byte3: Workout audio name character (Upper case, fill with 1 when end of name string).

Appendix F. Program Number & Program Name define

Area	Program number	Code	Program name (workout_name)	Default (min)	Note
A. Sports Training	P00	0x00	MANUAL	20	APP no use
	P01	0x01	LONG SLOW DIST-1	40	
	P02	0x02	SHORT INTERVAL-1	20	
	P03	0x03	MOD INTERVAL	30	
	P04	0x04	LONG INTERVAL	40	
	P05	0x05	NEG INTERVAL-1	30	
	P06	0x06	NEG INTERVAL-2	30	
	P07	0x07	FARTLEK	30	
B. Healthy Living	P08	0x08	UPHILL CLIMB	30	
	P09	0x09	PYRAMID CLIMB	30	

	P10	0x0a	PLATEAU CLIMB	40	
	P11	0x0b	LADDER	30	
	P12	0x0c	UPHILL INTERVAL	20	
C. Weight Managenment	P13	0x0d	STEADY PACE	40	
	P14	0x0e	LONG SLOW DIST-2	40	
	P15	0x0f	CARDIO RUN	20	
	P16	0x10	SHORT INTERVAL-2	20	
	P17	0x11	UPHILL WALK	30	
D. User Defined Program	**P18**	**0x12**	**CUSTOM USER 1**	**20**	**Suspend**
	P19	**0x13**	**CUSTOM USER 2**	**20**	**Suspend**
E. Heart Rate Control	P20	0x14	HRC CONSTANT	20	HRC
	P21	0x15	HRC INTERVAL	20	HRC
	P22	0x16	HRC COMBINATION	20	HRC Hi Low
A. Sports Training	P23	0x17	Fitness Test Program	-	16Km or 10 mile

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◆ Modify List

Date	Modify item description	Note
2012-09-25	1. Cancel 0x90 Safety key status. 2. New command Set console unit. 0xE9 3. New Model ID defines. 4. New Program Number and Program Name define. 5. New Edit Status. 6. New Set Workout Status. 7. New Set Workout Mode. 8. New Get Workout Status, Number, Duration Time, Warmup. Cooldown, Target Heart Rate, Mode, Level, Result. 9. Modify Engage External Control mode description.	
2012-10-01	1. New workout setting status. 2. New Set and Get Level.	