Feature Summary

Feature	Harbortronics DigiSnap 2000	Nikon MC-EU1
Compatibility		
Manufacturers / Models	Nikon / Coolpix 700, 800, 880 Nikon / Coolpix 900, 950, 990 Olympus / C2020, C3030, many others Sanyo / many models Epson / PhotoPC… many models Agfa ?	Nikon / Coolpix 880, 990
Connector	Industry standard DB-9	Custom to Nikon
Industry Common Protocol	Yes	No
Nikon 880 / 990 Protocol	Yes	Yes
Time-Lapse Features		
1) Minimum Interval	0 seconds	120 seconds
2) Maximum Interval	10 days	1 day
3) Number of Pictures	1..255, Infinite	Infinite
4) Configurable in Field	Yes*	Yes
5) Take Manual Picture	Yes	No
6) Zoom still active	Yes	No
Extended Protocol Features		
1) Half-Press Shutter Release	Yes*	Yes
2) Bulb - Manual	Yes*	Yes
3) Bulb - Time-Lapse	Yes*	No
4) Smooth Zoom Action	Yes*	Yes
5) Playback Control	Not currently	Yes
Advanced Time-Lapse (Time-Lapse sequences triggered per time of day)	8 Programmable Sequences*	N/A
Maximum Cable Length	> 500 feet, using additional serial cables	2.5 feet
Camera Battery Life (estimated) (Nikon 990, LCD off, Time-Lapse, NiMH batteries)		
1) Standard Protocol	10 days	N/A
2) Extended Protocol	4 hrs	4 hrs
Battery	AAA Alkaline (available everywhere)	Lithium CR2032 (specialty stores)
Remote Control Battery Life (estimated), Time-Lapse	1 – 2 weeks	1 – 2 weeks
Upgradeable Firmware (future capability?)	Yes, distributed by email!*	No
Size	Handheld (cord detaches to fit DigiSnap in pocket)	Handheld, w/ 3 foot cord
Customized Applications	Yes! The DigiSnap 2000 has built in capability for remote triggering and control, as well as connections for custom designed internal daughter boards for other connectors and sensing needs. The DigiSnap 2000 firmware may be tailored for custom applications, and easily upgraded by the end customer.	No
Price	$120	$130
Manufacturer	Harbortronics is a small business who makes all products in the USA, and has great customer service!	Nikon…

(* new feature since original DigiSnap 1000)

Camera Compatibility

The MC-EU1 is designed for the Nikon Coolpix 990 / 880 cameras, and uses a protocol custom to these cameras. If you need a remote controller for another camera type, or several camera models, this product will not work for you.

The DigiSnap was designed to be compatible with a wide range of camera models, from many manufacturers. An example of this was when Harbortronics developed a DigiSnap distributor, whereby ten cameras could be activated with a single button press. It was shown to work fine with a Coolpix 950, a Coolpix 990, and a C3030Z all connected at the same time. The DigiSnap uses both a standard protocol common to many camera manufacturers, as well as the one developed expressly for the MC-EU1.

Connector

The serial port connector used on the Coolpix 990 and 880 cameras is custom to Nikon.

The MC-EU1 utilizes this connector directly. This is nice and simple, until you have a need to stand more than 3 feet from the camera. There are no extension cables available!

The DigiSnap uses an industry standard DB9 connector, and requires an adapter cable (provided by the camera manufacturer to connect to PC serial ports) to connect to the camera. Using a standard connector means that it's trivially easy to extend the distance from the camera (this is a *Remote c*ontroller, after all), by adding in a longer serial cable, available at any computer store. The DigiSnap has been tested with a 700 ft serial cable, and worked fine at that length with the several cameras tested.

Using a standard interface also permits the use of other accessories made for serial devices, such as radio modem links. Can you say "really really remote" three times fast? Let's get creative!

Batteries

The MC-EU1 uses a lithium button cell, which can be rather frustrating to locate when it dies. They are widely available in stores that handle electronics, but not everyone else carries them.

The DigiSnap uses a single AAA cell, which is available in most any grocery or hardware store in the known world.

The battery life of the MC-EU1 and DigiSnap controller are similar… they will both last between 1 and 2 weeks of continuous use (i.e. time-lapse control).

Signal Interface

The DigiSnap uses a true RS-232 level interface, maximizing the distance potential. The MC-EU1 uses logic level signals, which works OK at the distance enforced by the length of the cable, but will be less reliable if extended (i.e. if you cut the cable and solder in some additional cable length).

Simple Time-Lapse

Interval

The MC-EU1 time lapse interval can be set from 2 minutes to 24 hrs, in 1 second increments. While sufficient for some applications, the two minute minimum interval may be very limiting.

The DigiSnap can be set to any interval from zero seconds to about 10 days, in 1 second increments. We've seen several series of stop-gap 'movies' using the time-lapse set to about 10 seconds, and only occasionally is the interval set to *more* than 2 minutes! Note, when set to zero seconds, the DigiSnap essentially commands the camera to take pictures as quickly as possible, dependent generally on the image compression.

Number of Pictures

The MC-EU1 presumes an infinite number of picture is always desired. Once started, it will take pictures at that interval until you stop it.

The DigiSnap can be configured to take any number of pictures, from 1 to 255, or infinite. There are applications where it can be nice to initiate a sequence of say five shots per button press.

Manual Shutter Release During Time-Lapse

Pressing the shutter release on the MC-EU1 while in time-lapse mode will terminate the time-lapse session.

Pressing the shutter release on the DigiSnap commands the camera to take another shot at that moment, and continue the time-lapse sequence. We once set up the DigiSnap to capture the boats moving in and out of Gig Harbor over the course of a day, and were able to take a few shots between intervals when something particularly interesting was happening in the scene, without impacting the overall long term sequence.

Advanced Time-Lapse

In performing nature studies, many situations naturally align themselves to the time of day. Flowers may open in the morning, and close at night. Animals may appear at watering holes and feeding stations at particular times of the day. Human activities are aligned even more tightly with the daily clock, such as work, traffic, etc. There are loads of studies that would benefit from being able to trigger time-lapse sequences according to a daily clock.

The MC-EU1 can only perform simple time lapse capture, independent of the time of day.

The DigiSnap can be configured with up to eight time-lapse sequences, automatically triggering at particular times of day. One current application is a year-long study of crop growth where several pictures are captured per day, at specific times. The DigiSnap makes this sort of study trivially easy to control!

Camera Battery Life

Something which may not be obvious until you've purchased everything and set up a long term time-lapse study is the battery drain. Lets compare operation using the Nikon 990 camera, controlled with the MC-EU1 and the DigiSnap. The 990 draws about 800 mA from the batteries when the LCD is active, regardless of which controller is used. That explains why the batteries die so quickly!

When communicating with the MC-EU1, and the LCD turned off, the camera still continuously draws about 450 mA! When taking time-lapse sequences with the LCD off, the power drain is still more than 300 mA! Using internal NiMH batteries, the camera will only work about 4 hrs at this rate, even if no pictures are taken!

When the DigiSnap is set to use the standard camera protocol instead of the extended protocol developed for the MC-EU1, the power drain is reduced dramatically! If the LCD is off, the baseline camera battery drain is about 5 mA, with pulses of about 350 mA during the brief exchanges of information. The camera should operate for more than 10 days on internal batteries at this rate!

For anyone interested in time-lapse photography, this can be a critical issue to consider. The MC-EU1 can realistically be only used for short time-lapse sequences, unless the camera is connected to a rather beefy external power source, whereas the DigiSnap can easily accommodate week long sequences on battery power alone!

For astrophotograhy time-lapse use, the additional power dissipation within the camera (about 2.25 watts) when using the MC-EU1 creates self-heating, which increases the imager noise. Using the DigiSnap with the standard protocol minimizes the self-heating dramatically.

Single Picture Operation

The MC-EU1 utilizes an extended protocol feature of the 990 / 880 cameras, allowing the MC-EU1 to substantially duplicate the features of the camera's shutter release button. Half-Press and Bulb operations are possible.

The DigiSnap is also compliant with this extended protocol, and can also access these useful features. The DigiSnap can be configured to enable and disable these features, or to use the standard protocol, providing great flexibility in how it's used.

Other Features

Bulb Operation

The DigiSnap can be configured for another feature that is not possible with the MC-EU1. For some applications, most particularly astrophotography, the bulb setting on the Coolpix 990 / 880 is used to open the shutter for a particularly long period of time. The MC-EU1 and DigiSnap can both control the shutter using the bulb setting when taking pictures manually. The DigiSnap can also access the bulb setting during time-lapse photography! The shutter open time can be configured. For instance, an astrophotographer may want to take a several hour sequence of pictures, taken at say 1 minute intervals, with shutter open time of 10 seconds. This is easily accomplished with the DigiSnap! It's even possible using Advanced Time-Lapse to automate this to run for many nights in a row, taking pictures only during certain hours.

Any application that demands that the shutter be opened for a repeatable period, greater than the camera's internal 8 second limit can only be controlled using the DigiSnap. The MC-EU1 allows for bulb operation, but it can only be manually activated, leading to timing errors. The DigiSnap can be set for either manual or automatic control.

Focal Length

The MC-EU1 provides the capability to control the camera zoom.

The original DigiSnap 1000 uses only a single button, and is not able to control the camera zoom. The DigiSnap 2000 incorporates four buttons, and can also zoom control the camera zoom.

The MC-EU1 does not permit changing the focal length while in Time-Lapse operation, while the DigiSnap does.

Playback

The MC-EU1 provides the capability to control the image playback on the camera.

The DigiSnap is not currently programmed for that function, but could be updated in the future if demand is high enough.

Upgrade Capability

There is no provision in the MC-EU1 to allow code changes. It does what it does, and that's all it'll ever do.

The DigiSnap firmware is upgradeable from any PC, and indeed several firmware upgrades have been released. It is anticipated that as new cameras are released, and new features are demanded by DigiSnap customers, additional firmware releases will be made. The DigiSnap firmware can also be customized… Harbortronics has worked with several customers to tailor operation to suit their unique needs.

Configuration

The MC-EU1 uses an on-board LCD display to indicate operational status and time-lapse settings. While very tiny, the display is nonetheless useful. The MC-EU1 uses several buttons to select features, and configure the time-lapse settings.

The DigiSnap 2000, provides the ability to configure the time-lapse interval in the field, which is the most commonly changed parameter. All other parameters are accessed through a terminal interface to a computer. The DigiSnap was designed for simplicity of the hardware, and uses only a single light for status. There are a large number of parameters that are configurable, which would be rather expensive and un-wieldy to handle with an on-board display.